Department of Defense
Fiscal Year (FY) 2012 Budget Estimates

February 2011

Air Force

Justification Book Volume 3

Research, Development, Test & Evaluation, Air Force

Volume III - Part 1

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Volume 3 Table of Contents

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Fiscal Year 2012 Program And Budget Estimates
RDT&E Descriptive Summaries
Budget Activities
February 2011

INTRODUCTION AND EXPLANATION OF CONTENTS

1. (U) GENERAL
   A. This document has been prepared to provide information on the United States Air Force (USAF) Research, Development, Test and Evaluation (RDT&E) program elements and projects in the FY 2012 Presidentôs Budget.
      1) All exhibits in this document have been assembled in accordance with DoD 7000.14R, Financial Management Regulation, Volume 2B, Chapter 5, Section 050402. Exception:
         a) Exhibit R-1, RDT&E Program, which was distributed under a separate cover due to classification.
      2) Other comments on exhibit contents in this document:
         a) Exhibits R-2/2a and R-3 provide narrative information for all RDT&E program elements and projects within the USAF FY 2012 RDT&E program with the exception of classified program elements. The formats and contents of this document are in accordance with the guidelines and requirements of the Congressional committees in so far as possible.
         b) The ñOther Program Funding Summaryò portion of the R-2 includes, in addition to RDT&E funds, Procurement funds and quantities, Military Construction appropriation funds on specific development programs, Operations and Maintenance appropriation funds where they are essential to the development effort described, and where appropriate, Department of Energy (DOE) costs.
         c) ñFacilities Exhibitsò Military Construction Project Data, (DD 1391), for improvements to and construction of government-owned facilities funded in RD&E are included in this submission.

2. (U) CLASSIFICATION
   A. All exhibits contained in Volumes I, II, and III are unclassified. Classified exhibits are not included in the submission due to the level of security classification and necessity of special security clearances.

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Program Element Table of Contents (by Budget Activity then Line Item Number)

Budget Activity 07: Operational Systems Development
Appropriation 3600: Research, Development, Test & Evaluation, Air Force

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Program Element Table of Contents (Alphabetically by Program Element Title)

In the FY12 PB Justification Book Submission for RDTE Volume 3,

Exhibits in Budget Activity 7 have been split into two books,

Volume 3 - Part 1 and Volume 3 - Part 2.

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Air Force • President's Budget FY 2012 • RDT&E Program
Exhibit R-1
(Listing by Budget Activity, then Program Element Number)

BA# 07: Operational Systems Development

				Cost ($ in Millions)				
Line#	**BA#**	**PE#**	**PE Title**	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**
112	07	0101113F	B-52 SQUADRONS	101.898	146.096	133.261	-	133.261
113	07	0101122F	AIR LAUNCHED CRUISE MISSILE	3.536	3.631	0.803	-	0.803
114	07	0101126F	B-1B SQUADRONS	178.278	33.234	33.011	-	33.011
115	07	0101127F	B-2 SQUADRONS	351.549	260.466	340.819	-	340.819
116	07	0101313F	STRAT WAR PLANNING SYS - USSTRATCOM	32.567	28.441	23.072	-	23.072
119	07	0102325F	JOINT SURVEILLANCE SYSTEM	9.521	-	4.485	-	4.485
120	07	0102326F	REGION/ SECTOR OPERATIONS CONTROL CENTER	25.482	23.732	12.672	-	12.672
121	07	0102823F	STRAT AEROSPACE INTEL SYS ACTIVITIES	0.018	0.015	0.014	-	0.014
122	07	0203761F	Warfighter Rapid Acquisition Program	13.530	10.580	19.934	-	19.934
123	07	0205219F	MQ-9 Development and Fielding	104.162	125.427	146.824	-	146.824
124	07	0207040F	Multi-Platform Electronics	14.370	15.574	-	-	-
125	07	0207131F	A-10 SQUADRONS	11.878	5.661	11.051	-	11.051
126	07	0207133F	F-16 SQUADRONS	118.512	129.103	143.869	-	143.869
127	07	0207134F	F-15 PROGRAMS	240.005	222.677	207.531	-	207.531
128	07	0207136F	Manned Destructive Suppression	9.707	12.937	13.253	-	13.253
129	07	0207138F	F-22 SQUADRONS	559.455	576.330	718.432	-	718.432
130	07	0207142F	Joint Strike Fighter Squadrons	-	217.561	47.841	-	47.841
131	07	0207161F	Tactical AIM Missiles	5.890	6.040	8.023	-	8.023

BA# 07: Operational Systems Development

				Cost ($ in Millions)				
Line#	**BA#**	**PE#**	**PE Title**	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**
132	07	0207163F	Advanced Medium Range Air-to-Air Missile	49.763	62.922	77.830	-	77.830
133	07	0207170F	JHMCS	2.445	2.407	1.436	-	1.436
134	07	0207224F	COMBAT RESCUE AND RECOVERY	-	0.944	2.292	-	2.292
135	07	0207227F	Pararescue (Guardian Angel Weapon System)	2.871	2.921	0.927	-	0.927
136	07	0207247F	Air Force TENCAP	11.594	11.648	20.727	-	20.727
137	07	0207249F	Precision Attack Systems	2.788	3.017	3.128	-	3.128
138	07	0207253F	Compass Call	13.019	20.652	18.509	-	18.509
139	07	0207268F	Aircraft Engine Component Improvement Program (CIP)	147.200	147.396	182.967	-	182.967
140	07	0207277F	Chief's Innovation Program	23.083	-	-	-	-
141	07	0207325F	Joint Air-to-Surface Standoff Missile (JASSM)	28.472	20.000	5.796	-	5.796
142	07	0207410F	Air and Space Operations Center - Weapon System (AOC-WS)	88.534	93.102	121.880	-	121.880
143	07	0207412F	Control and Reporting Center (CRC)	48.616	58.313	3.954	-	3.954
144	07	0207417F	Airborne Warning and Control System (AWACS)	138.053	239.755	135.961	-	135.961
145	07	0207418F	TAC AIRBORNE CONTROL SYSTEM	-	-	8.309	-	8.309
146	07	0207423F	Advanced Communications Systems	61.430	67.532	90.083	-	90.083
148	07	0207431F	Combat Air Intelligence System	1.469	3.310	5.428	-	5.428
149	07	0207438F	Theater Battle Management (TBM) C4I	18.374	15.170	15.528	-	15.528
150	07	0207444F	Tactical Air Control Party Modernization	-	-	15.978	-	15.978

BA# 07: Operational Systems Development

				Cost ($ in Millions)				
Line#	**BA#**	**PE#**	**PE Title**	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**
151	07	0207445F	FIGHTER TACTICAL DATA LINK	66.592	85.492	-	-	-
152	07	0207448F	C2ISR Tactical Data Link	1.604	1.584	1.536	-	1.536
153	07	0207449F	C2 Constellation	29.378	24.229	18.102	-	18.102
154	07	0207581F	JOINT STARS	180.663	168.917	121.610	-	121.610
155	07	0207590F	Seek Eagle	21.979	19.263	18.599	-	18.599
156	07	0207601F	USAF Modeling and Simulation	26.221	21.638	23.091	-	23.091
157	07	0207605F	Wargaming and Simulation Centers	6.790	6.020	5.779	-	5.779
158	07	0207697F	Distributed Training and Exercises	6.493	2.863	5.264	-	5.264
159	07	0208006F	Mission Planning Systems	76.650	83.555	69.918	-	69.918
160	07	0208021F	Information Warfare Support	13.361	2.294	2.322	-	2.322
161	07	0208059F	CYBER Command	-	1.117	0.702	-	0.702
168	07	0301400F	SPACE SUPERIORITY INTELLIGENCE	-	10.006	11.866	-	11.866
169	07	0302015F	E-4B NATIONAL AIRBORNE OPERATIONS CENTER	25.219	12.532	5.845	-	5.845
170	07	0303131F	Minimum Essential Emergency Communications Network (MEECN)	82.056	78.784	43.811	-	43.811
171	07	0303140F	Information Systems Security Program	161.509	140.017	101.788	-	101.788
172	07	0303141F	Global Combat Support System (GCSS)	3.208	3.393	0.449	-	0.449
173	07	0303150F	WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM	2.974	3.055	3.854	-	3.854

BA# 07: Operational Systems Development

Line#	BA#	PE#	PE Title	Cost ($ in Millions) FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
174	07	0303158F	Joint Command and Control	-	2.157	-	-	-
175	07	0303601F	MILSATCOM Terminals	239.352	186.582	238.729	-	238.729
177	07	0304260F	Airborne SIGINT Enterprise (JMIP)	151.842	149.268	121.748	-	121.748
180	07	0305099F	Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)	6.754	5.708	4.604	-	4.604
181	07	0305103F	Cyber Security Initiative	1.992	2.030	2.026	-	2.026
182	07	0305105F	DoD Cyber Crime Center	-	0.279	0.282	-	0.282
183	07	0305110F	Satellite Control Network	19.522	21.667	18.337	-	18.337
Total: Operational Systems Development				3,542.228	3,599.044	3,395.890	-	3,395.890

PROGRAM ELEMENT COMPARISON SUMMARY

PROGRAM ELEMENT (BY BUDGET ACTIVITY)

BUDGET ACTIVITY #1: BASIC RESEARCH (Volume 1)

		Remarks
0601102F	Defense Research Sciences	In FY 2012, nine legacy Projects 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308 and 2311 were consolidated into three new Projects 3001, 3002, 3003 to more appropriately describe and align the changing focus of the scientific disciplines within the overall Basic Research Program. Also in FY 2012, External Research Programs - Project 4113 was renamed Education and Outreach- Project 3004 to more appropriately describe its mission.

BUDGET ACTIVITY #2: APPLIED RESEARCH (Volume 1)

0602204F	Aerospace Sensors	In FY 2012 the efforts in Project 624916 move from Hanscom AFB, MA to Wright Patterson AFB, OH due to the decisions of the Base Realignment and Closure Commission. The individual efforts from Project 624916 are merged into other existing Projects in this PE.

BUDGET ACTIVITY #3: ADVANCED TECHNOLOGY DEVELOPMENT (Volume 1)

0603216F	Aerospace Propulsion and Power Technology	In FY 2012, funding in this project is increased to complete scramjet engine flight demonstrations.

BUDGET ACTIVITY #4: ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPE (Volume 2)

0305178F	National Polar-Orbiting Op Env Satellite	In FY2012, the program funding includes overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $179.701M . Starting in the FY12 year of execution, DWSS funds will be transferred to a new PE (0305187F, Defense Weather Satellite System). Totals include funding for PRCP Program Number 239, NPOESS.
0603423F	Global Positioning System III - Operational Control Segment	In FY2012, totals include funding for PRCP Program Number, 292, GPS IIIA The program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $6.464M. FY12-16 funding has been transferred to this PE from PE 0305265F. However, funds were incorrectly loaded into BPAC 67A021 instead of 64A021.
0603430F	Advanced (EHF MILSATCOM (Space)	In FY 2012,totals include funding for PRCP Program Number 261, AEHF. The program funding includes Overhead reduction and Reports/Studies/ Boards/Reviews efficiencies that are not intended to impact program content. The efficiencies reductions total $4.3M. The Capability and Affordability Insertion Program (CAIP) is funded in BPAC 64A030, Evolved AEHF MILSATCOM. Prior to FY12PB, BPAC 64A030 funds were included in BPAC 644050.

PROGRAM ELEMENT COMPARISON SUMMARY

PROGRAM ELEMENT (BY BUDGET ACTIVITY)		
0603432F	Polar MILSATCOM (Space)	In FY2012, totals include funding for PRCP Program Number 121, EPS. The program funding includes Overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $1.8M.
0603438F	Space Control Technology	FY 2012, the program funding includes Overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.063M. CY funding totals include $16.000M requested for Overseas Contingency Operations.
0603850F	Integrated Broadcast Service (DEM/VAL)	In FY 2012, the program funding includes reductions for Overhead Reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.085M.
0603860F	Joint Precision Approach and Landing Systems - Dem/Val	In FY2012, the program funding includes reductions for Overhead Reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $.161M. While the Joint Precision Approach and Landing System (JPALS) is an ACAT ID program, the Air Force Exhibit R-3 does not include "to complete" costs as the JPALS Land-Based Increment 2 (Air Force lead) is pre-Milestone B (FY15) and not Section 2366a certified. The Sea-Based Increment 1a (Navy lead) is post-Milestone B and Section 2366a certified. Reference Navy JPALS R-Doc for data (PNO 238). Totals include funding for Program Resources Collection Process Program Number (PNO) 238, JPALS (Land-Based Increment 2).
0604283F	BMC2 Sensor Development	In FY 2012, Project 6002, Three Dimensional Expeditionary Long Range Radar (3DELRR), efforts were transferred from PE 0207412F, Control and Reporting Center, BPAC 675294, Theater Air Control System Improvement - Radar, in order to provide this pre-Major Defense Acquisition Program its own Program Element.
0604317F	Technology Transfer	In FY 2012, the Office of the Secretary of Defense (OSD) transferred this program to the Air Force.
0604857F	Operational Responsive Space	In FY 2012, the program funding includes overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $1.187.

BUDGET ACTIVITY #5: SYSTEM DEVELOPMENT AND DEMONSTRATION (SDD)
(Volume 2)

0101125F	NUCLEAR WEAPON MODERNIZATION	In FY2012 B61 LEP efforts were transferred from PE 0604222F, Nuclear Weapons Support, to PE 0101125F, Nuclear Weapon Modernization in order to support B61 LEP development. In FY2012 LRSO efforts were transferred from PE 0101122F, Air Launched Cruise Missile, to PE 0101125F, Nuclear Weapon Modernization in order to support LRSO development.
0207100F	LAAR Squadrons	In FY 2012, Project 657005, Light Attack, includes New Start efforts.
0603840F	Global Broadcast Service (GBS)	In FY2012,the program funding includes overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.070M.

PROGRAM ELEMENT COMPARISON SUMMARY

PROGRAM ELEMENT (BY BUDGET ACTIVITY)		
0604222F	Nuclear Weapons Support	In FY12 B61 LEP efforts were transferred from PE 0604222F, Nuclear Weapons Support, to PE 0101125F, Nuclear Weapon Modernization in order to support B61 LEP development. In FY12 Joint Fuze efforts were transferred from PE 0604222F, Nuclear Weapons Support, to PE 0604851F, ICBM EMD in order to support Joint Fuze development.
0604270F	EW Development	In FY 2012, Project 653891, Advanced IR Counter Measures (AIRCM), includes new start efforts.
0604281F	TACTICAL DATA NETWORKS ENTERPRISE	In FY 2012, the program funding includes reductions for reports/studies/boards efficiencies that are not intended to impact program content. The efficiencies reductions total $0.509M.
0604421F	Counterspace Systems	In FY 2012, the program funding includes reductions for Overhead Reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $2.099M in FY12. The program funding includes reductions for Knowledge Based Services, Acquisition Program Management Administrative efficiencies that are not intended to impact program content. The efficiencies reductions total $0.306M.
0604425F	Space Situational Awareness Systems	In FY 2012, the program funding in this Program Element includes overhead reductions that are not intended to impact program content. The efficiencies reductions total $6.663M. Totals include funding for PRCP Program Number 328, SBSS Block 10.
0604429F	AIRBORNE ELECTRONIC ATTACK	In FY 2012, the program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $.433M.
0604441F	Spaced Based Infrared System (SBIRS) High	In FY 2012, the program funding includes overhead reductions for efficiencies that are not intended to impact program content. The efficiencies reductions total $12.499. Totals include funding for PRCP Program (PNO) 210 SBIRS High.
0604617F	Agile Combat Support	In FY2012, Project 652895, Civil Engineering Readiness, includes two new start efforts, one for Basic Expeditionary Airfield Resources and the other for Explosives Ordnance Disposal.
0604706F	Life Support Systems	In FY2012, Project 65412A, Life Support Systems, includes new starts for Aircrew Laser Eye Protection (ALEP) Block 3 and Voice in Beacon (ViB) programs. The program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.879M in FY12.
0604735F	Combat Training Ranges	In Fy 2012, the program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $.134.
0604851F	ICBM - EMD	In FY2012, Project Number 655037, Support Equipment, includes the Single Integrated Operation Plan Targeting Application Computer System new start effort. In FY2012, the fuze efforts in Project Number 657006, ICBM EMD: Fuze Support, were transferred from PE 0604222F Nuclear Weapons Support in order to consolidate service activities as they progress towards deployable products. The program funding includes reductions for overhead efficiencies that are not intended to impact program content. The efficiencies reductions total $0.432M in FY12 from the Support Equipment Programs.

PROGRAM ELEMENT COMPARISON SUMMARY

PROGRAM ELEMENT (BY BUDGET ACTIVITY)		
0604853F	Evolved Expendable Launch Vehicle - EMD	In FY 2012, the program funding includes overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $.059M.
0605221F	KC-X, Next Generation Aerial Refueling Aircraft	In FY2012, the program funding includes reductions for overhead efficiencies that are not intended to impact program content. The efficiencies reductions are $13.806M.
0605229F	CSAR HH-60 Recapitalization	In FY2012, Project Number 657001, Avionics Development and Integration efforts were transferred to PE 0207224F, Project Number 676016, and PE 0101235F, Modification Number 3149T, in order to effectively execute this effort for both HH-60G and UH-1N aircraft.
BUDGET ACTIVITY #6: RDT&E MANAGEMENT SUPPORT (Volume 2)		
0605807F	Test and Evaluation Support	In FY 2012, the program funding includes reductions for manpower efficiencies that are not intended to impact program content. The efficiencies total $109.336.
0605860F	Rocket Systems Launch Program (RSLP)	In FY 2012,the program funding includes overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $406k. In FY2012, Deep Space Climate Observatory (DSCOVR) launch service is a "New Start" effort.
0605864F	Space Test Program	In FY 2012, the program funding includes reductions for (Knowledge Based Services)efficiencies that are not intended to impact program content. The efficiencies reductions total $291k.
0702806F	ACQUISITION AND COMMAND SUPPORT	In FY 2012, the program funding includes an increases for overhead reductions of $4.822M efficiencies that are intended to reduce out year costs through improvement in program infrastructure or reduction in unit costs. The program funding also includes reductions for service support contractor efficiencies that are not intended to impact program content. The efficiencies reductions total $2.187M.
BUDGET ACTIVITY #7: OPERATIONAL SYSTEM DEVELOPMENT (Volume 3)		
0101113F	B-52 SQUADRONS	In FY 012, the program funding includes reductions for Overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $1.378M.

PROGRAM ELEMENT COMPARISON SUMMARY

PROGRAM ELEMENT (BY BUDGET ACTIVITY)		
0101127F	B-2 SQUADRONS	In FY 2012, three new project numbers were established: 676021 Baseline Support 676022 EHF SATCOM and Computer 676023 Defensive Management System Funding for the three new project numbers was transferred from the existing 675345 project number. Project number 675345 will continue to be used for B-2 Modernization efforts that are not allocated to the three new project numbers. The program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $3.515M in FY12. The program funding includes reductions for acquisition excellence efficiencies for project 676023 in FY15 and FY16 that are not intended to impact program content. Reductions for efficiencies may be spread to other Air Force programs at a later date. Amounts of the reductions are: $3.7M/FY15 and $54.2M/FY16.
0205219F	MQ-9 Development and Fielding	In FY 2012, the program funding includes reductions for Overhead Reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.742M
0207131F	A-10 SQUADRONS	In FY 2012, the program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $.777M
0207133F	F-16 SQUADRONS	In FY2012, the program funding includes reductions for acquisition excellence efficiencies and program management administration reductions that are not intended to impact program content. The efficiencies reductions total $2.189M
0207134F	F-15 PROGRAMS	In FY 2012. the F-15 program has two FY 2012 new starts: F-15C/D BLOS will provide Beyond Line of Sight (BLOS)communications for Air Superiority and Air Sovereignty Alert missions. F-15 Radar Enhancements will improve F-15E capabilities with empahsis on Electronic Protection and other radar improvements.
0207136F	Manned Destructive Suppression	In FY 2012, the program funding includes reductions for Overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $.077M.
0207142F	Joint Strike Fighter Squadrons	In FY 2012, Project 676011 Dual Capable Aircraft includes new start efforts. PE 0207142F was a new PE for Joint Strike Fighter (JSF) starting in FY11 for post SDD enhancements. PE 0604800F is the USAF RDT&E funding for JSF SDD. Program funding reflects reductions to overhead. These efficiencies total $.643M in FY12, and do not impact program content.
0207163F	Advanced Medium Range Air-to-Air Missile	In FY 2012, the program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $.345M.
0207224F	0207224F	In FY2012, Project Number 676016, Avionics Development and Integration, efforts were transferred from PE 0605229F, Project Number 657001, Avionics Development and Integration in order to effectively execute the HH-60G portion of the effort.
0207253F	Compass Call	In FY 2012, the program funding includes reductions for economic efficiencies that are not intended to impact program content. The efficiencies reduction total $0.062M.

PROGRAM ELEMENT COMPARISON SUMMARY

PROGRAM ELEMENT (BY BUDGET ACTIVITY)		
0207325F	Joint Air-to-Surface Standoff Missile (JASSM)	In FY 2012, the program funding includes reduction for overhead cost efficiencies that are not intended to impact program content. The efficiencies reductions total $0.721M.
0207410F	AEROSPACE OPERATION CENTER (AOC)	In FY 2012, The program funding includes reductions for efficiencies that are not intended to impact program content. The efficiencies reductions total $8.703M.
0207412F	Modular Control System	In FY 2012, BPAC 675294, Theater Control System Improvement-Radar (TACSI-R) efforts transfer to PE 0604283F, Battle Management Command & Control (BMC2) Sensor Development, BPAC 646002, Three Dimensional Expeditionary Long Range Radar in order to provide this pre-Major Defense Acquisition Program its own Program Element.
0207417F	Airborne Warning and Control System (AWACS)	In FY 2012, totals include funding for Program Resources Collection Process (PRCP) Program Number, 277, AWACS Upgrade (for Block 40/45 Upgrade). The program funding includes reduction for Overhead Reduction, Service Support Contractors, and Reports/Studies/Boards efficiencies that are not intended to impact program content. The efficiencies reductions total $17.565M
0207423F	Advanced Communications Systems	In FY2012, Project 674934, Tactical Air Control Party,efforts transferred to PE 0207444F, Tactical Air Control Party, Project 676013, Equipment Modernization, in order to better identify and delineate efforts for Tactical Air Control Party Modernization.
0207438F	Theater Battle Management (TBM) C4I	In FY 2012, the program funding includes reductions for Overhead Reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.127M
0207444F	Tactical Air Control Party Modernization	In FY2012, Project 676013, Equipment Modernization, efforts were transferred from PE 0207423F, Advanced Communications Systems, Project 674934, TACP-M, in order to better identify and deliniate efforts for Tactical Air Control Party Modernization.
0207449F	C2 Constellation	In FY 2012, the program funding includes reductions for efficiencies that are not intended to impact program content. The efficiencies reductions total $2.262M
0207581F	JOINT STARS	In FY 2012, the program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $2.490M
0207605F	Wargaming and Simulation Centers	In FY 2012, the program funding includes reductions for Air Force efficiencies that are not intended to impact program content. The efficiencies reductions total $.118M.
0208006F	Mission Planning Systems	In FY 2012, the program funding includes reductions for overhead efficiencies that are not intended to impact program content. The efficiencies reductions total $2.664M.
0303131F	Minimum Essential Emergency Communications Network (MEECN)	In FY 2012, Project 675378 Long Term Solution (LTS) includes new start efforts. The program funding for Project 672832 MEECN System Improvements (MSI) includes reductions for Reports/Studies/Board efficiencies that are not intended to impact program content. The efficiencies reductions total $292K in FY12.

PROGRAM ELEMENT COMPARISON SUMMARY

PROGRAM ELEMENT (BY BUDGET ACTIVITY)		
0303140F	Information Systems Security Program	In FY 2012, the program funding includes reductions for CENTCOM Fourth Estate Baseline Review efficiencies that are not intended to impact program content. The efficiencies reductions total $0.455M. The program funding includes reductions for Reports, Studies, Boards and Commissions Review efficiencies that are not intended to impact program content. The efficiencies reductions total $0.572M in FY12. The program funding includes reductions for Reducing Reliance of DoD Services Support Contractors efficiencies that are not intended to impact program content. The efficiencies reductions total $0.012M in FY12.
0303601F	MILSATCOM Terminals	In FY 2012, the program funding includes Overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.948M.
0304260F	Airborne SIGINT Enterprise (JMIP)	In FY 2012, the program funding includes reductions for Overhead efficiencies that are not intended to impact program content. The efficiencies reductions total $2.455M. Totals include funding for PRCP program number 375 "ASIP"
0305110F	Satellite Control Network	In FY2012, the program funding includes overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.681M.
0305111F	WEATHER SERVICE	In FY 2012, The program funding includes reductions for Overhead and Reports/Studies Board efficiencies that are not intended to impact program content. The efficiencies reductions total $0.260M.
0305164F	NAVSTAR Global Positioning System User Equipment Space	In FY2012, the program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $3.902M.
0305173F	SPACE TEST CTR/RANGE CONSOLIDATION	In FY 2012, the program funding includes overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $12.4M in FY12. FY2012-FY2016: +$1.0B for Acquisition workforce civilian pay.
0305182F	Spacelift Range System	In FY 2012, the program funding includes overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.063M.
0305205F	Endurance Unmanned Aerial Vehicles	In FY2012, funding was added to this AF-DARPA joint project to develop a prototype for flight test and a potential operational demo in FY14.
0305206F	Airborne Reconnaissance Systems	In FY 2012, the program funding includes reductions for Overhead Reduction and 4th Estate Baseline Review efficiencies that are not intended to impact program content. The efficiencies reductions total $1.488M and $.017M, respectively, in FY12. In FY2012, project 675292, is renamed from Airborne Cueing & Exploitation System-Hyperspectral (ACES HY) to Hyperspectral Sensors to better reflect the depth of development efforts and operational need for hyperspectral airborne sensors. In FY2012, project 675382 is renamed from Wide Area Airborne Surveillance Program of Record (WAAS PoR) to Broad Area Surveillance Sensors to better reflect the WAAS PoR termination and continued technical development of Broad Area Surveillance Sensors.
0305208F	Distributed Common Ground Systems	In FY 2012, the program funding includes reductions for Overhead Reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $.513M. In FY 2012, Project Number 676025, Data Compression, includes new start efforts.
0305219F	PREDATOR DEVELOPMENT/FIELDING	In FY 2012, Totals include funding for PRCP Program Number 271, "MQ-1 Predator". The program funding includes reductions for overhead efficiencies that are not intended to impact program content. The efficiencies reductions total $0.086M.

PROGRAM ELEMENT COMPARISON SUMMARY

PROGRAM ELEMENT (BY BUDGET ACTIVITY)		
0305220F	GLOBAL HAWK DEVELOPMENT/FIELDING	In FY 2012, This program element funds three related Air Force efforts sharing the Global Hawk platform in common: Global Hawk program, the Multi-Platform Radar Technology Insertion Program (MP-RTIP), and U.S participation and support of the North Atlantic Treaty Organization (NATO) Alliance Ground Surveillance (AGS) program. The program has been funded to latest cost estimate, less efficiencies. The reduction for efficiencies are not intended to impact program content. In FY 2012, P018, NATO AGS efforts transfer from PE 1001018D8Z, NATO AGS, to PE 0305220F, Project 676001, NATO AGS, in order to transfer control of this effort from OSD to the USAF.
0305265F	GPS III Space Segment	In FY 2012,totals include funding for PRCP Program Number 292, GPS IIIA. The program funding includes overhead reduction and Review, Study, Board reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $3.965M in FY12. FY12-16 total OCX funding transferred to PE 0603423F. In FY2012, BPAC 67007, DASS Integration, includes new start efforts.
0305614F	JSpOC Mission System	In FY 2012, the program funding includes Overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $1.417M.
0305887F	Electronic Combat Intelligence Support	In FY 2012, the program funding includes reductions for Service Support Contractors efficiencies that are not intended to impact program content. The efficiencies reductions total $00.028M.
0305913F	NUDET Detection System (Space)	In FY 2012, the program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.556M.
0305940F	Space Situational Awareness Operations	In FY 2012, the program funding in this Program Element includes overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $.440M.
0308699F	Shared Early Warning System	In FY 2012, the program funding includes reductions for Fourth Estate Baseline Review efficiencies that are not intended to impact program content. The efficiencies reductions total $10k.
0401139F	LIGHT MOBILITY AIRCRAFT (LIMA)	In FY2012, Project 5379, Light Mobility Aircraft, efforts were transferred from PE 0401315F, Cargo-Short Takeoff and Landing (C-STOL) Aircraft, Project 5379, Light Mobility Aircraft, in order to more readily differentiate Light Mobility Aircraft (LiMA) efforts from C-STOL activities.
0401315F	C-STOL AIRCRAFT	In FY2012, Project number 5379, Light Mobility Aircraft, efforts transferred to PE 0401139F, Light Mobility Aircraft, Project 5379, in order to more readily differentiate Light Mobility Aircraft (LiMA) efforts from Cargo-Short Takeoff and Landing (C-STOL) Aircraft efforts.
0603423F	Global Positioning System III - Operational Control Segment	In FY 2012, FY12-16 funding is in an incorrect BPAC - should be in 64A021, GPS III OCX.
0708610F	Logistics Information Technology (LOGIT)	In FY 2012, the program funding includes reductions for Overhead Reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $7.003M.

PROGRAM ELEMENT (BY BUDGET ACTIVITY)

0901202F

PROGRAM ELEMENT COMPARISON SUMMARY

JOINT PERSONNEL RECOVERY AGENCY (JPRA)

In FY 2012, the program funding includes reductions for Overhead Reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $3.598M.

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The following are Program Elements not providing RDT&E exhibits due to classification:

Program Element	Title
0101314F	NIGHT FIST- USSTRATCOM
0101815F	Advanced Strategic Program
0207424F	Evaluation and Analysis Program
0208161F	Special Evalution System
0301310F	National Air Intelligence Center
0301314F	COBRA BALL
0301315F	Missile and Space Techincal Collection
0301324F	FOREST GREEN
0301386F	GDIP Collection Management
0301555F	Classified Programs
0301556F	Special Program
0304111F	Special Activities
0304311F	Selected Activities
0304348F	Advanced Geospatial Intelligence (AGI)
0305124F	Special Applications Program
0305142F	Applied Technolgy and Integration
0305159F	Defense Reconnaissance Support Activities
0305172F	Combined Advanced Applications
0605798F	Analysis Support Group
0305127F	Foreign Counterintelligence Activites

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1. COMPONENT	FY 2010 PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
EGLIN AIR FORCE BASE, FLORIDA	CONSTRUCT FUZE ELECTRONICS EXPERIMENTATION FACILITY

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
65976	315-237	FTFA101048	EEIC 52900 1,517.5

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
PRIMARY FACILITIES				1,103.1
CONSTRUCT FUZE FACILITY	SF	4,666	236	(1,103.1)
SUPPORTING FACILITIES				207.0
UTILITIES	LS			(95.0)
PAVEMENTS	LS			(90.0)
SITE WORK	LS			(20.0)
COMM	LS			(2.0)
SUBTOTAL				1,310.1
CONTINGENCY (5.0%)				65.5
DESIGN/BUILD - DESIGN COST (4.0% OF SUBTOTAL)				52.4
SUPERVISION,INSPECTION, AND OVERHEAD (6.5%)				89.4
PROFIT AND OVERHEAD (.0%)				0.0
TOTAL FUNDED COST				1,517.5
UNFUNDED COST (.0%)				0.0
TOTAL REQUEST				1,517.5

10. Description of Proposed Work: Construct a 4666 SF single story insulated building with concrete foundation, steel frame structural system, metal siding, sloped metal roof, and interior facility utilities (electrical, plumbing, fire suppression, and HVAC) to house offices, administrative space, restrooms, locker rooms, and electronics research laboratory space. Project to provide adequate paved parking as well as paving surface on an existing unimproved roadway to the new facility; also extended utility run to sewer tie-in. Contractor profit and overhead costs are built into the cost proposal of the project.
Air Conditioning: 4 Tons

11. Requirement: 4666 SF Adequate: 0 SF Substandard: 7222 SF

PROJECT: Construct Fuze Electronics Experimentation Facility

REQUIREMENT: Office, laboratory space, and much needed storage space is required to support research, development, test, and evaluation activities for fuze (specialized detonators for explosives), characterization and phenomenology research. This facility will provide the necessary space required for 12 permanent scientists, engineers, technicians, research equipment and project materials. Locker rooms will provide storage of personal protective equipment and shower facilities for personnel who have been contaminated by munitions detonation residue. The work space proposed will allow for creation of and test of fire control circuitry used with large caliber guns, air guns, and light gas guns as well as allow continued support the Air Force Special Operations Command weapons development efforts and the Air Combat Command Hard Target Roadmap. Continuing technology needs require the development of predictive modeling and a cost effective testing capability to support the development of fuze component and system technologies.

CURRENT SITUATION: The current work space is insufficient for the number of in-house projects under investigation, there is inadequate storage for the amount of research equipment that is required in the electronics laboratory, and there is

1. COMPONENT	FY 2010 PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
EGLIN AIR FORCE BASE, FLORIDA	CONSTRUCT FUZE ELECTRONICS EXPERIMENTATION FACILITY

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
65976	315-237	FTFA101048	EEIC 52900 1,517.5

inadequate office space to house the research scientists, engineers, and technicians. The current facility has extensive roof leaks every time it rains (145 days/year on average) that pose a threat to computers and other electronic equipment. The leaks have lead to the growth of mold and mildew which pose long term health risks to personnel. Gaps in the structure allow the incursion of rodents posing long term health risks from their waste.

IMPACT IF NOT PROVIDED: Fuze research and development must meet public law for insensitive munitions and support the trend of smaller warhead, higher speed, hard target munitions. Without this laboratory revitalization, the AF will incur a 3-5 year delay in validating the design strategies necessary for fuze electronics to survive the ever-increasing harsh penetration environment when attacking hard targets. This delay will translate into a 3-5 year delay in the development and fielding of the next generation of hard target fuze systems to meet the deficiencies identified in the Air Combat Command Hard Target Roadmap.

ADDITIONAL: This project will be accomplished with using the Lab Revitalization and Demonstration Program (LRDP) funds authority minor construction limit up to $2,000,000, supporting mission requirements under section 2804 of the National Defense Authorization Act amended Section 2805 of Title 10. The siting for this project was approved by the Base Civil Engineer on 6 May 2010.
Base Civil Engineer: Colonel David H. Maharrey, Jr., (850) 882-2876.

JOINT USE CERTIFICATION: This facilty can be used by other components on an "as available" basis; however, the scope of the project is based on Air Force requirements. AFRL/RWMF is the only AF agency conducting shock hardened electronics, post impact intelligent fuzing, and fuze environment characterization R&D. These unique capabilities allow for the conduct of R&D activities across RW and for the Air Armament Center, the Defense Threat Reduction Agency, the Army, Navy, other governmental agencies (NASA), and DoD's Industry Partners.

CERTIFICATIONS: I have reviewed this document and certify it is complete and accurate. I have validated the project's primary and supporting costs and work classification. It has been fully coordinated with the user and other appropriate agencies and approved by the Installation Commander:

DAVID H. MAHARREY, JR., Colonel, USAF
Commander, 96th Civil Engineer Group

DAVID W. FUNK, Colonel, USAF
Chief, Programs Division AFMC
Installations and Mission Support

1. COMPONENT	FY 2010 PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	13 July 2010

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
KIRTLAND AIR FORCE BASE, NEW MEXICO	LRDP-CONSTRUCT ISOON TELESCOPE FACILITY

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
62205	310-923	MHMV101125	EEIC 52900 1,596.0

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
PRIMARY FACILITIES				222.8
ISOON PRE-ENGINEERED TELESCOPE FACILITY	SF	1,375	162	(222.8)
SUPPORTING FACILITIES				1,215.3
CONSTRUCT BASE COURSE ACCESS ROAD	LF	4,121	48	(197.8)
ANTITERRORISM/FORCE PROTECTION	LS			(13.0)
PAVEMENTS	SP	20	870	(17.4)
SITE WORK	LS			(35.0)
UTILITIES	LS			(837.1)
ELECTRICAL TRANSFORMER	LS			(48.0)
EMERGENCY GENERATOR	LS			(67.0)
SUBTOTAL				1,438.1
CONTINGENCY (5.0%)				71.9
SUPERVISION, INSPECTION, AND OVERHEAD (5.7%)				86.1
PROFIT AND OVERHEAD (.0%)				0.0
TOTAL FUNDED COST				1,596.0
UNFUNDED COST (.0%)				0.0
TOTAL REQUEST				1,596.0
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				(15.0)

10. Description of Proposed Work: Construct a one-story, pre-engineered facility with reinforced concrete foundation to house the Improved Solar Observing Optical Network (ISOON) telescope. Work includes a 20'-wide aggregate base course roadway, a dedicated T-1 communication line, a four-ton HVAC system to maintain a temperature of 60-79 degrees F and relative humidity of 30-60% (non-condensing), backup generator and pad, water, sewer, and electrical utility lines, and site work. Lightning and grounding protection are required to protect the ISOON telescope. Project complies with DoD minimum antiterrorism force protection standards.
Air Conditioning: 4 Tons

11. Requirement: 1375 SF Adequate: 0 SF Substandard: 0 SF

PROJECT: Construct an Improved Solar Observing Optical Network (ISOON) Telescope Facility. (Current Mission)

REQUIREMENT: A state-of-the-art facility is required to house the ISOON Telescope to support the detection of solar flares, as well as magnetic field signatures and sunspot groups that are known to lead to flares, coronal mass ejections, and other eruptive activity that impact the Department of Defense's Space Situational Awareness (SSA). The Air Force Research Laboratory uses the data to develop models of solar activity and its forecast and to develop future instrumentation for the Air Force.

CURRENT SITUATION: The USAF's ISOON prototype telescope is currently located at the National Solar Observatory (NSO) in Sunspot, New Mexico. This prototype is being transitioned to the Air Force Weather Agency (AFWA) and is expected to become the first operational unit at Kirtland AFB. After the remaining four ISOON telescopes are installed around other AF locations, the Kirtland ISOON will become

1. COMPONENT	FY 2010 PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	13 July 2010

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
KIRTLAND AIR FORCE BASE, NEW MEXICO	LRDP-CONSTRUCT ISOON TELESCOPE FACILITY

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
62205	310-923	MHMV101125	EEIC 52900 1,596.0

the network test bed. The Space Weather Center of Excellence Branch, AFRL/RVBX, is supporting AFWA in this transition and uses the data from the telescope for research. In addition, the NSO will be shutting down its Sunspot operations in approximately five years in order to consolidate its facilities at a new location.

IMPACT IF NOT PROVIDED: The termination of NSO operations at Sunspot will place the ISOON telescope's future in jeopardy and adversely impact the USAF's ability to continue operating the instrument. If not moved, the Air Force will become resposible for all operations and maintenance bills for all support infrastructure at the NSO. Since all space weather originates with the sun, solar activity is the dominant factor that drives all other space weather. This critical instrument provides the Air Force's solar program with data to perform research on solar events. Many new methods coming out of the program in the near future will require the ISOON's data to test theories. The ISOON telescope is a key part of overall integrated Space Weather Forecasting. The ISOON, as an Air Force asset, will need a new location from which to operate.

ADDITIONAL: This project meets the criteria/scope specified in Air Force Handbook 32-1084, "Facility Requirements." Block 9 costs exclude design. Line item costs shown in Block 9 include contractor overhead and profit. The unfunded equipment line amount will be funded by RDT&E funds and will be available at project completion. All known alternative options were considered during the development of this project. The project has undergone environmental analysis, resulting in a Categorical Exclusion. The project is in direct support of a research program, and as such is using the Lab Revitalization and Demonstration Program (LRDP) authority to exceed the $750,000 minor construction limit up to $2,000,000. Base Civil Engineer: Mr. D. Brent Wilson (505) 846-7911.

JOINT USE CERTIFICATION: This facility can be used by other components on an "as available" basis; however, the scope of the project is based on Air Force requirements.

I have reviewed this document and certified it is complete and accurate. I have validated the project's primary and supporting costs and work classification. It has been fully coordinated with the user and other appropriate agencies and approved by the Installation Commander at the 2 Apr 09 Facilities Board.

13 JUL 2010

D. Brent Wilson, P.E.
Base Civil Engineer
Kirtland Air Force Base, NM

20 JUL 10

DAVID W. FUNK, Colonel, USAF
Chief, Programs Division
HQ AFMC Installations and Mission Support

1. COMPONENT	FY 2011 CONSTRUCTION PROJECT DATA COMPUTER GENERATED	2. DATE
AF (AFMC)		16 Dec 2010
3. INSTALLATION AND LOCATION	4. PROJECT TITLE	
WRIGHT-PATTERSON AFB OH (AFMC)	CNST HVAC FOR TEST FACILITY F/20019	
5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
65976	318-612	ZHTV060039C	EEIC 529: $ 890.0

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
Construct HVAC for Test Facility				712.0
25% Overhead & Profit				178.0
Total Funded Cost				890.0

10. DESCRIPTION OF PROPOSED WORK: Remove unit heaters and construct ducted heating, ventilation, and air conditionings system. Provide ducts, diffusers, danpers, chillers, air handlers, fans, coils, motors, controls, connections, and all labor and material to provide a ducted HVAC system in 20019.

11. PROJECT: Construct HVAC for Test Facility

REQUIREMENT: Facilities to house research, development, test, and evaluation of new propulsion systems for military aircraft.

CURRENT SITUATION: Air Force Research Laboratory (AFRL) lacks a testing capacity to simulate propulsion systems for ground testing. AFRL developes prototype propulsion technology but does not have a system of apparatus to evaluate the new technology on the ground by modeling and simulating critical systems under flight and propulsion conditions. Using private sector test facilities is not a realistic option as these facilities are frequently not available to the Air Force since they are used and scheduled to support aircraft production and configured to support specific aircraft types. The proposed system will provide a neutral evaluation and itegration capability, permitting the Air Force to independently assess manufactures' components in support of aquistion decisions. Presently the Air Force lacks this type of independent evaluation capability. The proposed facility for the test and evaluation apparatus is a 1920s-era wind tunnel facility which lacks a ducted HVAC system, only having unit heaters, and can not support the test function without proper heating, cooling and air conditioning.

IMPACT IF NOT PROVIDED: New components and technology will not be evaluated in a timely manner, resulding in delays in program development. Research programs into advanced technology will be delayed by months, adversely impacting the development and fielding of new techonology. Delays in schedule would increase contract costs significantly and ultimately cause the technology to be unavailable for insertion at the right time in the weapon systems development cycle. Evaluation will be limited to flight tests, putting aircraft and crew at risk in the event of components not functioning as intended while in flight

ADDITIONAL: Companion Project: ZHTV060039A, B, Repair/Modernize for Test Facility

1. COMPONENT	FY 2011 PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
KIRTLAND AIR FORCE BASE, NEW MEXICO	LRDP-CONSTRUCT IRREL LABORATORY

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
62205	312-472	MHMV101145	EEIC 52900 1,847.9

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
PRIMARY FACILITIES				1,575.0
CONSTRUCT IRREL LAB	SF	6,000	263	(1,575.0)
SUPPORTING FACILITIES				90.0
UTILITIES	LS			(50.0)
ANTITERRORIS/FORCE PROTECTION	LS			(15.0)
SITE WORK	LS			(25.0)
SUBTOTAL				1,665.0
CONTINGENCY (5.0%)				83.3
SUPERVISION,INSPECTION, AND OVERHEAD (5.7%)				99.7
PROFIT AND OVERHEAD (.0%)				0.0
TOTAL FUNDED COST				1,847.9
UNFUNDED COST (.0%)				0.0
TOTAL REQUEST				1,847.9

10. Description of Proposed Work: Construct a single story building with reinforced concrete foundation, CMU walls, structural steel framing, with a standing seam metal insulated sloped roof system. Work includes multi-zone HVAC systems, multi-voltage electrical systems, air and gas supplies and all site work. Project complies with DoD minimum antiterrorism force protection standards.

11. Requirement: As Required.

PROJECT: Laboratory Revitalization Demonstration Program (LRDP) Construct Infrared Radiation Effects Laboratory (Current Mission)

REQUIREMENT: Construct a 6,000 SF facility with two laboratories and office space for up to 15 personnel. This facility will replace a portion of the Space Vehicles Component Development Laboratory MILCON project. The Infrared Radiation Effects Laboratory (IRREL) has demanding power requirements due to high current draw devices and very low noise measurements floor(electronic noise caused by improper electrical isolation, poor quality ground, and interference from other RF sources, as well as low frequency mechanical noise due to building vibration).

CURRENT SITUATION: The 2010 Air Force Scientific Advisory Board review of AFRL/RV recognized infrared radiation effects research as a unique capability in DoD, playing a critcal role in maturing technology for Space-based ISR, but commented that poor facility conditions were holding back critical research and integration potential. Specifically, the existing lab, Building 426, was constructed in 1958 as a dining hall. Experiment setup time is extremely time consuming due to adjusting for varying conditions; extended data samples cannot be taken. The noise created by other electrical equipment and power demands make experiments impossible to perform during duty hours due to the power and noise requirements.
Currently, the IRREL occupies 2478 SF of lab space and 553 SF of office space in Bldg 426. In addition to the poor facility conditions described, there is no space available for the IRREL to expand lab characterization capabilities, nor space available for additional employees. The IRREL characterization schedule is maximized in terms of what projects can be simultaneously performed in the lab, and people dedicated to these projects.

IMPACT IF NOT PROVIDED: IRREL is the only DoD laboratory capable of focal plane

1. COMPONENT	FY 2011 PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
KIRTLAND AIR FORCE BASE, NEW MEXICO	LRDP-CONSTRUCT IRREL LABORATORY

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
62205	312-472	MHMV101145	EEIC 52900 1,847.9

array characterization for radiometric performance, radiation tolerance, and assessment of mission readiness for these state-of-the art sensors. The Air Force Scientific Advisory Board review of AFRL/RV recognized this research as a unique capability, playing a critical role in maturing technology for several space-based platforms, but commented that poor facility conditions were holding back critical research and integration potential. This laboratory project completes two of the nine labs planned within the Space Vehicles Component Development Lab MILCON project that has been in the FYDP for the last seven years; however, the need for this critical technology can no longer wait or be performed in such substandard facilities. Therefore, it is being removed and executed under the new LRDP authority.

ADDITIONAL: This project meets the criteria/scope specified in Air Force Handbook 32-1084, "Facility Requirements." Block 9 costs exclude design. Line item costs shown in Block 9 include contractor overhead and profit. All known alternative options were considered during the development of this project. The project is in direct support of a research program, and as such is using the Lab Revitalization and Demonstration Program(LRDP) authority to exceed the $750,000 minor construction limit up to $2,000,000. Base Civil Engineer: Mr. D. Brent Wilson (505) 846-7911.

The original $1.6M programmatic estimate would constrain this project severely; $1.85M allows for the correct complement of laboratory to office space. The Space Vehicles Directorate, in collaboration with the Kirtland AFB BCE, has a history of small project success (40 projects/yr; $2M), and the local funding climate for construction contracting has been exceptional. The $56M BRAC MILCON, Battlespace Environment Laboratory, was completed within budget and with all separate bid items (long-span joists, additional service yard, 109 extra parking spaces, and an AT/FP wall) successfully added. The Directorate is experienced in small to mid-sized projects.

JOINT USE CERTIFICATION: This facility can be used by other components on an "as available" basis; however, the scope of the project is based in Air Force requirements.

I have reviewed this document and certified it is complete and accurate. I have validated the project's primary and supporting costs and work classification. It has been fully coordinated with the user and other appropriate agencies and approved by the Installation Commander at the 2 Apr 09 Facilities Board.

D. Brent Wilson, P.E.
Base Civil Engineer
Kirtland Air Force Base, NM

DAVID W. FUNK, Colonel, USAF
Chief, Programs Division
HQ AFMC Installations and Mission Support

1. COMPONENT	FY 2012 PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	3 JAN 2011

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
EGLIN AIR FORCE BASE, FLORIDA	ADVANCED ENERGETICS RESEARCH LAB

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
62602	316-333	FTFA041133R3	EEIC 52900 1,600.0

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
PRIMARY FACILITIES				1,263.6
ADVANCED ENERGETICS RESEARCH LABORATORY	SF	6,600	191	(1,263.6)
SUPPORTING FACILITIES				178.0
UTILITIES	LS			(96.0)
PAVEMENTS	LS			(9.0)
SITE WORK	LS			(73.0)
SUBTOTAL				1,441.6
CONTINGENCY (5.0%)				72.1
SUPERVISION,INSPECTION, AND OVERHEAD (5.7%)				86.3
PROFIT AND OVERHEAD (.0%)				0.0
TOTAL FUNDED COST				1,600.0
UNFUNDED COST				0.0
TOTAL REQUEST				1,600.0

10. Description of Proposed Work: Construct a 60' x 110' pre-engineered metal building with a 14' minimum clear ceiling height containing two 35' x 40' modular isolated lab rooms with a 14' ceiling height at AFRL/RW's High Explosives Research and Development (HERD) Complex. Each isolated lab room floor is a thick reinforced concrete slab, a vibration dampening pad to isolate it from the exterior metal building floor with a 2-inch separation to ensure no exterior vibration. Rest rooms, lab support work areas, mechanical, electrical, and communication rooms are located inside the exterior metal building. The isolated lab rooms are also isolated from these rooms located inside the exterior metal building with a 2-inch separation to ensure no exterior vibration. The existing HERD's circulating chilled/heated water will be used for heating and cooling with new air handling units installed for each of the modular isolated lab rooms as well for the areas inside the exterior metal building surrounding the two modular isolated lab rooms. The air handling unit for each modular isolated lab room must be capable of maintaining a set air temperature plus or minus 1 degree C inside the modular lab room at all times and provide a minimum of 12 air changes per hour when exposed energetic/reactive materials or their mixtures/formulations are present. No recirculation of air is permitted in the two modular isolated lab rooms or their associated chem lab rooms. Site work will provide access, storm water drainage and utilities for the facility as required. The metal building plus rebar and any other conductors in or connected to the metal building foundation/floor, and all connected external building components must have electrical continuity and be grounded to the building master ground bus bar. All conductors in each isolated lab room plus rebar and any other conductors in the vibration dampening pad must have electrical continuity and be grounded to the building master ground bus bar.

11. Requirement: 6600 SF Adequate: 0 SF Substandard: 0 SF

PROJECT: Construct a new Advanced Energetics Research Laboratory for 6.1 Advanced Energetics basic research activities being conducted at the Air Force Research Laboratory, Munitions Directorate, High Explosives Research and Development (HERD) Complex, a unique Air Force capability accomplishing advanced energetics and explosives research, development, integration, and testing activities in support of Air Force munitions.

1. COMPONENT	FY 2012 PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	3 JAN 2011

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
EGLIN AIR FORCE BASE, FLORIDA	ADVANCED ENERGETICS RESEARCH LAB

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
62602	316-333	FTFA041133R3	EEIC 52900 1,600.0

REQUIREMENT: This facility will provide critically needed/mission essential laboratory areas capable of handling advanced energetic materials for 6.1 advanced energetics basic research supporting the Director of Defense Research & Engineering's (DDR&E) Advanced Energetics Major Thrust and the National Aerospace Initiative. This facility is also critical to AFRL's role as a "key participant" in the National Advanced Energetics Technology Program. This Advanced Energetics Research Lab is a critical initial component necessary to achieve the AFRL goal to develop a 6.1 Advanced Energetics basic research program recognized by AFOSR as a "Star Team", a unique world class research capability. This new facility is required to allow the HERD Complex to expand its advanced energetic basic research efforts to include laboratory work and to significantly improve the productivity of the increasing number of researchers. It will facilitate increased scientific collaboration with leading universities and distinguished researchers by providing a facility needed to support world class advanced energetics laboratory research. This world-class energetics program is critical to the development of future Air Force munitions required to meet present AFRL, AFMC, Air Force and DoD strategic plans.

CURRENT SITUATION: No existing lab space is available or suitable/usable for the expanding 6.1 advanced energetics research activities. Existing HERD requirements are increasing and the mission is significantly expanding. The Processing Section through-put doubled in the last 3 years, quadrupled in the last 6 years. All existing facilities are fully utilized and are overcrowded causing explosives safety concerns, impacting the mission and increasing development time because of a lack of space. The number of researchers assigned to the 6.1 basic research advanced energetics program has increased 533% in the last 4 years and is increasing again this year. Without this new facility, these scientists will be unable to accomplish their critical research. Over half of current research efforts are modeling and developing experiments that cannot be completed without this new facility, and designing/procuring unique equipment for development and testing of advanced energetics. Many researchers will share the two modular isolated lab rooms. Safety allows only one experiment/test at a time in each modular isolated lab room. The lack of adequate facilities currently prevents researchers from pursuing projects offering the biggest payoff or the best chance of success. Current strategic plans at all levels of DoD show a critical need to aggressively pursue advanced energetics concepts especially for applications to future micro munitions. This unique facility will allow advanced energetic researchers to apply nano fundamental research breakthroughs currently being discovered in other labs using non explosive nano materials to advanced energetics for Air Force munitions applications. Existing facilities at universities and basic research institutes working with nano materials do not meet minimum safety requirements for working with advanced energetics.

IMPACT IF NOT PROVIDED: AFRL will be unable to meet mid and far term DoD, Air Force, and AFRL munitions development strategic plans resulting in significant delays or forfeited future war fighter capabilities. Without this unique and critical facility we anticipate the loss of a large number of critical researchers with unique capabilities needed to support advanced energetic research. This will result in the loss or delay of time critical/essential research that will impact future Air Force and DoD munitions development for years to come, leading to a lack of appropriate munitions for future Air Force use and a significant reduction in future war fighter capabilities.

ADDITIONAL: Under the FY2005 $1M LRDP authorization this project was initiated and approved by the Air Armament Center Base Civil Engineer and the Installation Commander. A construction contract was signed for $930K. Due to explosive safety and storm water requirements the current total request amount is now $1.6M. These issues have been resolved however the resulting delay and pending contract

1. COMPONENT	FY 2012 PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	3 JAN 2011

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
EGLIN AIR FORCE BASE, FLORIDA	ADVANCED ENERGETICS RESEARCH LAB

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
62602	316-333	FTFA041133R3	EEIC 52900 1,600.0

amendments drove a total request increase of $670K above the 2005 contract award amount. The current construction estimate includes SIOH and contractor overhead and profit. Approval under the 2008 LRDP authority will ensure a complete and usable facility as originally programmed.

JOINT USE CERTIFICATION: This facility will be available for use by other services on an "as-available" basis, but the requirements set forth in this document are based only on the Air Force requirements.

CERTIFICATION: I have reviewed this document and certify it is complete and accurate. I have validated the Project's primary and supporting costs and work classification. It has been fully coordinated with the user and other appropriate agencies and approved by the Installation Commander.

DAVID H. MAHARREY, JR., Colonel, USAF
Commander, 96th Civil Engineering Group
Eglin Air Force Base, FL

DAVID W. FUNK, Colonel, USAF
Chief Programs Division
Installations and Mission Support

1. COMPONENT	FY2012 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE		16 DEC 2010

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
ARNOLD AIR FORCE BASE, TENNESSEE	CONSTRUCT TEST CELL COOLING WATER LINE

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
65976	845-363	ANZY109056	1,974.2

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
PRIMARY FACILITIES				
66-INCH COOLING WATER LINE	LF	700	2,150,00	1,505.0
66-INCH VALVE WITH PIT & ELECTRICAL OPERATORS	EA	1	100,000.00	100.0
MANHOLE	EA	1	40,000.00	40.0
CATHODIC PROTECTION	LF	700	85.00	59.5
SUBTOTAL				1,704.5
CONTINGENCY (5%)				85.2
SUBTOTAL				1,789.7
SIOH (6.5%)				116.3
TOTAL FUNDED COST OF PROJECT				1,906.0
DESIGN/BUILD - DESIGN COST (4% OF SUBTOTAL)				68.2
TOTAL REQUEST				1,974.2

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Install a coated steel water line from the 84" header leaving the Secondary Pumping Station to the 54" main supplying the ASTF (Aeropropulsion Systems Test Facility) Air Supply area. Size pipe to provide all ASTF water requirements west of CB01 distribution valve (105,000 gpm). Project will include cathodic protection. An isolation valve will be installed at the supply end of the pipeline and an access manhole at opposite end to provide maintenance access.

11. REQUIREMENT: 700 LF

PROJECT: Construct Test Cell Cooling Water Line (Current Mission)

REQUIREMENT: Arnold Engineering Development Center's (AEDC) mission is to provide pre-flight testing in support of DoD pre/post fuselage, turbine and weapons testing programs. The test facilities at the AEDC require cooling water to support this mission. This project will provide a new capability to conduct concurrent turbine engine and wind tunnel testing during the hot summer months.

CURRENT SITUATION: The existing cooling water to support wind tunnel and turbine engine testing is inadequate during the hottest period of the summer. Configuration of the cooling water system creates a water source problem where several test cells are all competing for the same inadequate water supply. Inability to support concurrent testing occurs during peak test load as customers attempt to accomplish testing before the end of the fiscal year. Significant test scheduling issues arise because AEDC's test capacity is reduced and the flexibility to meet customer schedules is lost. Typically, the hot summer period where the problem occurs is approximately 6-8 weeks, which equals to 12-16% of AEDC's annual earning capacity. Turbine engine testing can generate up to $6M of testing per month. Wind tunnel testing is usually scheduled to near-full capacity, which translates to approximately $1M per month. Alternating testing between the mission areas reduces significantly needed revenue and adversely impacts customer platforms such as fighters, bombers, missiles, bombs, and stores.

IMPACT IF NOT PROVIDED: Inability to test turbine engines directly affects the component improvement program, which enhances the safety and reliability of fielded engines such as F-15 (F100), F-16 (F100/F110), F-22A (F119), and B-1B (F101); qualification testing for next generation aircraft such as F-35 (F135) and Global Hawk (F137); high speed engine demonstration testing on the XTE-88 to develop technology for cruise missiles; developmental testing on the alternate engine for the next generation fighter F-35 (F136), and alternate fuels certification for F-15 (F100), F-16 (F100/F110), B-1B (F101), and F-35 (F135). Wind tunnel testing supports classified programs; fighters (e.g. F-35, F-22, F-15, F-18, and UCAS); bombers (e.g. B-1 and B-52); missiles (e.g. SM3, Next Gen AEGIS); stores (e.g. SDB II, JDAM, Next Generation Jammer) classified programs; fighters (e.g. F-35, F-22, F-15, F-18, and UCAS); bombers (e.g. B-1 and B-52); missiles (e.g. SM3, Next Gen AEGIS); stores (e.g. SDB II, JDAM, Next Generation Jammer).

1. COMPONENT	FY2012 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE		16 DEC 2010

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
ARNOLD AIR FORCE BASE, TENNESSEE	CONSTRUCT TEST CELL COOLING WATER LINE

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
65976	845-363	ANZY109056	1,974.2

ADDITIONAL: Section 2804 of the National Defense Authorization Act amended Section 2805 of Title 10 USC to allow an unspecified minor construction project costing not more than $2,000,000 for Laboratories. Base Civil Engineer: Mr. William (Bill) E. Wendle, DSN: 340-7916/COMM: (931) 454-7916.

JOINT USE CERTIFICATION: This is an installation utility/infrastructure project, and does not qualify for joint use at this location. However, all tenants on this installation are benefited by this project.

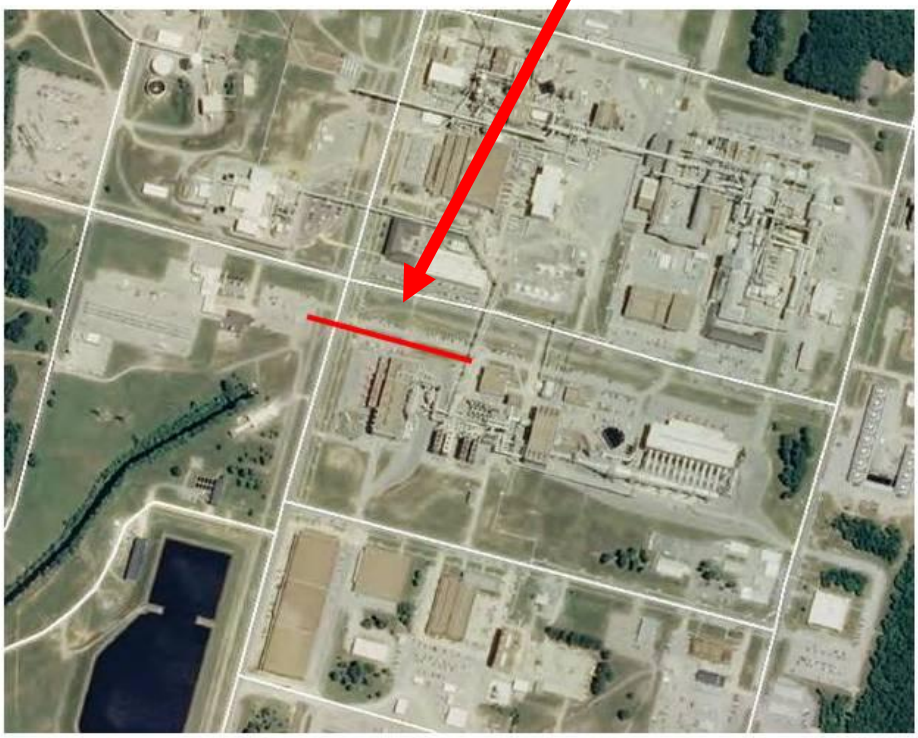
1. COMPONENT	FY2012 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE		16 DEC 2010

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
ARNOLD AIR FORCE BASE, TENNESSEE	CONSTRUCT TEST CELL COOLING WATER LINE

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
65976	845-363	ANZY109056	1,974.2

Arnold Air Force Base, TN

Project Location



1. COMPONENT	FY2012 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE		17 DEC 2010

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
ARNOLD AIR FORCE BASE, TENNESSEE	CONSTRUCT SL2/SL3 ADMINISTRATIVE FACILITY

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
65976	318-614	ANZY089010	1,106.5

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
PRIMARY FACILITIES				846.0
SL2/SL3 ADMINISTRATIVE FACILITY	SF	4,000	201.35	(829.0)
SDD/EPA ACT5/EO13423	SF	4,000	4.25	(17.0)
SUPPORT FACILITIES				109.3
UTILITIES				
ELECTRICAL POWER LINE	LF	250	7.50	(1.9)
TRANSFORMER	EA	1	3,000	(3.0)
WATER SUPPLY	LF	250	5.50	(1.4)
SEWER SUPPLY CONNECTION	LF	250	6.00	(1.5)
PAVEMENTS	SY	1,500	20	(30.0)
SITE IMPROVEMENTS				
CLEARING	AC	1	1,500	(1.5)
LANDSCAPING	AC	0.5	4,000	(2.0)
SIDEWALK	LF	100	29.75	(3.0)
COMMUNICATIONS	LS			(65.0)
SUBTOTAL				955.3
CONTINGENCIES (5%)				47.8
TOTAL CONTRACT COST				1,003.1
SIOH (6.5%)				65.2
TOTAL FUNDED COST OF PROJECT				**1,068.3**
DESIGN/BUILD – DESIGN COST (4% OF SUBTOTAL)				38.2
TOTAL REQUEST				1,106.5

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Construct a single story facility with reinforced concrete foundation, floor slabs, masonry walls, brick veneer, and standing seam metal roof. Work includes electrical, mechanical, fire detection/suppression, pre-wiring of the facility, supporting utilities, site improvements, and parking. Comply with DoD force protection requirements per Unified Facilities Criteria (UFC) and Leadership in Energy and Environmental Design (LEED) mandated by the Environmental Protection Act of 2005 and Executive Order 13423.

11. REQUIREMENT: 4,000 SF

PROJECT: Construct SL2/SL3 Administrative Facility

REQUIREMENT: Provide an administrative office space for 9 personnel to include supervisors, planner, schedulers, and engineers; conference/training/meeting room and break room for 40 personnel, conditioned storage area, shipping area, and restrooms. Sea-Level Test Cells SL-2 and SL-3 provide the capability to economically conduct durability testing on large augmented turbine engines at near-sea-level conditions (1000 ft altitude) by eliminating the cost of running inlet and exhaust plant machinery. They also provide the capability of using the Engine Test Facility (ETF) plant to run ram conditions (inlet pressures above ambient), allowing testing at up to Mach 1.2 when necessary to achieve test objectives. Test programs supported include the F35, F22, F15 and F16.

CURRENT SITUATION: The existing SL2/SL3 facilities do not adequately accommodate the number of personnel assigned to the area. The existing office area does not provide adequate space for the nine supervisors/planner/schedulers/engineers, including the ability to meet with their workers in a private setting. Control rooms, test observation rooms and the electrical shop area are currently being utilized as office space for these personnel. Currently, there are 40 personnel per shift who conduct the required training, safety briefings and staff meetings in the industrial area. These activities are also conducted in the high bay area, control rooms, data conditioning rooms and electrical shop area which is not conducive due to high noise level environment. In addition, thousands of dollars of AF equipment are also being stored in control rooms, data conditioning rooms, the electrical

and mechanical shop areas, and at various remote locations. These equipment need to be centrally stored in an environmentally controlled area. This would allow a single point delivery and pickup and ready access to SL2/SL3 personnel. Much of the materials, equipment and personnel that are needed to be on site for efficient and reliable operations located at various remote locations have to be retrieved when the need arises. SL2/3 testing has consistently been heavy and the testing is projected to increase in the future. Over the past three years (FY08 – FY10) the test load has averaged 1489 engine test hours per year. The average test load projected for the next five years (FY12 – FY16) is 1645 engine test hours per year.

IMPACT IF NOT PROVIDED: Due to lack of adequate space for personnel, materials and equipment required to efficiently support the mission have increased inefficiencies and risks posed on the programs that test at SL2 and SL3. Personnel will continue to work in cramped quarters, share desks, eat at their work station, and perform tedious tasks in high noise level areas. The new space would allow for these resources to be on site in close proximity to the needed location and allow for them to be organized in a much more efficient and reliable manner. It will provide a low noise work environment to reduce the risks on jobs that require tedious verbal communications. Not funding this building will drive inefficiencies and delays to a very demanding test programs to include the F35, F22, F15 and F16.

ADDITIONAL: Section 2804 of the National Defense Authorization Act amended Section 2805 of Title 10 USC to allow an unspecified minor construction project costing not more than $2,000,000 for Laboratories. Base Civil Engineer: Mr. William (Bill) E. Wendle, DSN: 340-7916/COMM: (931) 454-7916.

JOINT USE CERTIFICATION: This facility can be used by other components on an "as available" basis; however, the scope of the project is based on Air Force requirements.

1. COMPONENT	FY2012 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE		17 DEC 2010

3. INSTALLATION AND LOCATION
ARNOLD AIR FORCE BASE, TENNESSEE

4. PROJECT TITLE	7. PROJECT NUMBER
CONSTRUCT SL2/SL3 ADMINISTRATIVE FACILITY	ANZY089010

Existing Facilities/Deficiency Detail Data Sheet

a. Requirements and Assets:

(1) Scope of FY12 Request (SM): 372 SM (4,000 SF)

(2) Mission: The mission of AEDC is to support the development of aerospace systems by testing hardware in aerodynamic, propulsion, and space environmental ground test facilities that simulate flight conditions, and to develop advanced test techniques, instrumentation, and facilities through the performance of research and the application of new technology..

Requirement: Sea-Level Test Cells SL-2 and SL-3 provide the capability to economically conduct durability testing on large augmented turbine engines at near-sea-level conditions (1000 ft altitude) by eliminating the cost of running inlet and exhaust plant machinery. They also provide the capability of using the Engine Test Facility (ETF) plant to run ram conditions (inlet pressures above ambient), allowing testing at up to Mach 1.2 when necessary to achieve test objectives. Test programs supported include the F35, F22, F15 and F16.

(3) Functional Breakout of Proposed Scope:

SL2 Administrative Facility	(318-614)	4,000 SF

(4) Requirements/Assets Summary	SM	# of Facilities	Remarks
a. Total Requirement	67101	64	
b. Existing Substandard	66,729	63	Retain
c. Existing Adequate	0	0	
d. **Funded, Not in Inventory**	0	0	
e. **Adequate Assets (c+d)**	0	0	
f. Included in prior program	0	0	
g. Deficiency (a-e-f)	372	1	This FY request

Facility Summaries

Cat Code	Nomenclature/Bldg #	Scope Used (SM)	Total Scope Bldg (SM)	Year	Cond Code	Type Const	Remarks
b. Existing Substandard							
318-614	J-4 HYDRAULIC BLDG./519	36	36	1968	2	P	Retain
318-614	J-4/J-5 CNTRL ROOM./520	1,003	1,003	1963	2	P	Retain
318-614	J-4 STORAGE BLDG./521	190	190	1968	2	P	Retain
318-614	J-5 TEST CELL BLDG./522	520	520	1966	2	P	Retain
318-614	J-4/J-5 H2O SOFTENER/528	55	55	1965	2	P	Retain
318-614	J-4 LCL ELECTRONICS/529	119	119	1966	2	P	Retain
318-614	J-4 DATA COND BLDG./534	118	118	1966	2	P	Retain
318-614	J-4 SUPPORT BLDG./536	543	543	1965	2	P	Retain
318-614	J-5 VALVE SHELTER/537	50	50	1964	2	P	Retain
318-614	ETF TEST BLDG./559	50	50	1971	2	P	Retain
318-614	ETF RKT TEST CNTRL./560	17	17	1958	2	P	Retain
318-614	J-4 HE STORAGE&CMPR/567	71	71	1967	2	P	Retain
318-614	J-4 POWER DIST BLDG./569	144	144	1967	2	P	Retain
318-614	APTU VALVE BLDG./576	26	26	1985	2	P	Retain
318-614	APTU MAINT/STORAGE/577	286	286	1972	2	P	Retain
318-614	APTU CONTROL BLDG./578	171	171	1972	2	P	Retain
318-614	APTU TEST CELL./579	956	956	1972	2	P	Retain
318-614	J-6 FIELD OFFICE BLDG)/591	669	669	1989	2	P	Retain

1. COMPONENT	FY2012 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE		17 DEC 2010

3. INSTALLATION AND LOCATION
ARNOLD AIR FORCE BASE, TENNESSEE

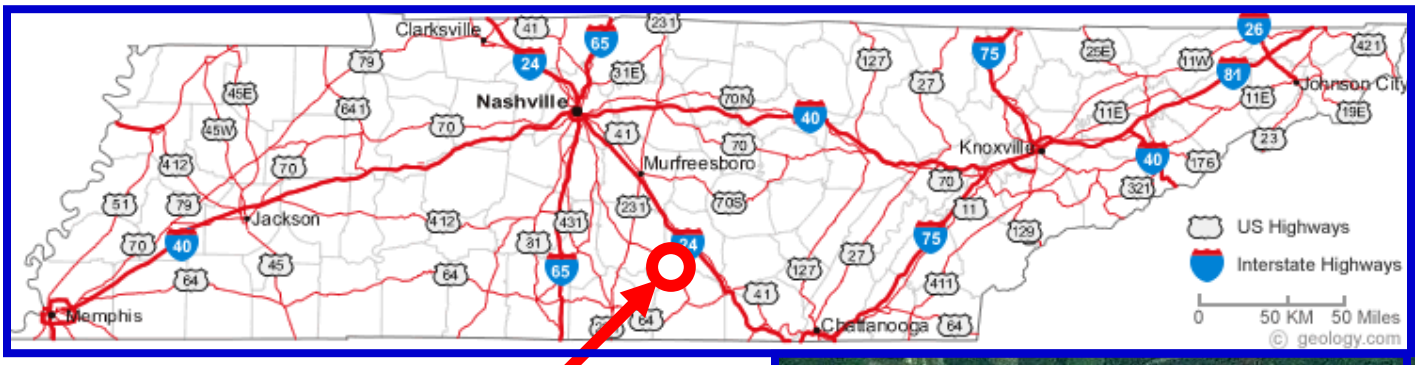
4. PROJECT TITLE	7. PROJECT NUMBER
CONSTRUCT SL2/SL3 ADMINISTRATIVE FACILITY	ANZY089010

Cat Code	Nomenclature/Bldg #	Scope Used (SM)	Total Scope Bldg (SM)	Year	Cond Code	Type Const	Remarks
b. Existing Substandard							
318-614	FSD MAINT. SHOP/645	260	260	1959	2	P	Retain
318-614	EXP RESEARCH LAB/646	133	133	1966	2	P	Retain
318-614	FSD RESEARCH BLDG./648	520	520	1963	2	P	Retain
318-614	ETF TEST FUEL METER/830	456	456	1954	2	P	Retain
318-614	ETFA J-3 MAINT BLDG./832	30	30	1963	2	P	Retain
318-614	ETF INSTRUMENT OPS/850	303	303	1968	2	P	Retain
318-614	ETF ELEC EQUIP NO. 1/862	8	8	1997	2	P	Retain
318-614	ETF ELEC EQUIP NO. 2/863	16	16	1999	2	P	Retain
318-614	I & C STAGING LAB/868	269	269	1974	2	P	Retain
318-614	ETF SHOP BLDG./876	3,332	3,332	1953	2	P	Retain
318-614	ETF AC&T BLDG. /878	16,651	16,651	1953	2	P	Retain
318-614	ETF-B EXHAUSTER/879	4,329	4,329	1953	2	P	Retain
318-614	ETF-A AIR SUPPLY/881	2,057	2,057	1956	2	P	Retain
318-614	ETF-A EXHAUSTER/882	962	962	1957	2	P	Retain
318-614	ETFA REFRIGERATION/884	1,219	1,219	1967	2	P	Retain
318-614	ETFA HEATER CNTRL/ 885	49	49	1956	2	P	Retain
318-614	HIGH PRESS STATION/886	30	30	1957	2	P	Retain
318-614	ETFA HEATER BLOWER/887	40	40	1957	2	P	Retain
318-614	ETFA PUMP HOUSE/889	4	4	1958	2	P	Retain
318-614	ETFA HYDRAULIC BLDG./891	37	37	1967	2	P	Retain
318-614	ETFA VALVE HOUSE/892	36	36	1958	2	P	Retain
318-614	ETFA J-2A CRYOGENIC/893	139	139	1974	2	P	Retain
318-614	ETFA FUEL SHELTER/894	245	245	1960	2	P	Retain
318-614	ETFA INSTR HUT 1/895	14	14	1960	2	P	Retain
318-614	ETFA INSTR HUT 2/896	24	24	1967	2	P	Retain
318-614	ETFA VALVE RPR /897	84	84	1964	2	P	Retain
318-614	T-3 TEST CELL ENCL/898	191	191	1963	2	P	Retain
318-614	ETF SPECIAL PROJ/899	460	460	1980	2	P	Retain
318-614	ETF-C EXHAUSTER/903	10,261	10,261	1984	2	P	Retain
318-614	TEST BLDG, C1 & C2/912	4,806	4,806	1983	2	P	Retain
318-614	ETF-C COMPRESSOR/913	690	690	1983	2	P	Retain
318-614	ETF-C TEST FUEL COND/914	325	325	1984	2	P	Retain
318-614	ETF-C RC-3 COOLER/916	228	228	1984	2	P	Retain
318-614	ETF-C HEATER CNTRL/921	96	96	1983	2	P	Retain
318-614	ETF-C REFRIG. CNTRL/922	1,404	1,404	1983	2	P	Retain
318-614	ETF-C AIR SUPPLY/929	8,533	8,533	1983	2	P	Retain
318-614	PROP TECH DIAG LAB /936	297	297	1988	2	P	Retain
318-614	ELECTRO-OPTICS LAB/938	297	297	1992	2	P	Retain
318-614	AMSC/939	1,547	1,547	1992	2	P	Retain
318-614	ROCKET PREP NO. 1/1690	299	299	1960	2	P	Retain
318-614	RPA IGNITOR BLDG./1695	17	17	1962	2	P	Retain
318-614	RPA SUPPORT BLDG./1697	90	90	1966	2	P	Retain
318-614	J6 SUPPORT BUILDING/2120	320	320	1987	2	P	Retain
318-614	WEBBER BOX/2214	25	25	1962	2	P	Retain
318-614	RPA - 2 BLDG./2215	574	574	1966	2	P	Retain

1. COMPONENT	FY2012 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE		17 DEC 2010

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
ARNOLD AIR FORCE BASE, TENNESSEE	CONSTRUCT SL2/SL3 ADMINISTRATIVE FACILITY

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
65976	318-614	ANZY089010	1,106.5



Arnold Air Force Base
Site Location

Project Location

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0101113F: *B-52 SQUADRONS*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	101.898	146.096	133.261	-	133.261	78.369	74.047	69.595	45.645	Continuing	Continuing
675039: *B-52 Modernization*	101.898	146.096	133.261	-	133.261	78.369	74.047	69.595	45.645	Continuing	Continuing

Note

The program funding includes reductions for Overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $1.378M in FY12.

A. Mission Description and Budget Item Justification

B-52 modernization is a comprehensive program to ensure B-52 viability to perform current and future wartime missions to include datalinks, navigation, sensors, weapons, and electronic warfare (EW) and training capabilities. B-52 modernization (initiated in FY 2005) integrates and adds both tactical and global datalink communications for real time command and control, targeting, and intelligence. It upgrades antiquated air traffic management (ATM) systems with those supported by three key functions using satellite technology: Communications, Navigation and Surveillance (CNS). Modernization upgrades training devices to support aircrew and maintenance training with the latest B-52 capability. In addition, modernization improves conventional warfare capability with additional MIL-STD-1760 smart weapons and improved weapons carriage and fully integrates advanced targeting pods with the offensive avionics system. B-52 modernization upgrades or replaces legacy defensive EW systems to include the radar warning receiver, jammers, chaff and flare dispensers and situational awareness displays as well as integration of offensive EW such as the Miniature Air-Launched Decoy (MALD) and MALD-Jammer (MALD-J). Lastly, B-52 Modernization replaces the current aging strategic radar capability with a state-of-the-art, non-developmental radar.

CONECT

The B-52 Combat Network Communications Technology (CONECT) acquisition program will support nuclear and conventional operations by upgrading the B-52 fleet with tactical datalink and voice communications capabilities along with improved threat and situational awareness to support participation in network centric operations. The CONECT upgrade includes new multi-functional color displays (MFCDs) and a digital interphone system, which will survive and function through the nuclear environment to enhance crew interaction and situational awareness. To enable net centric operations, the CONECT upgrade integrates: on-board client/ server architecture supporting distributed processing with independent control functions; UHF Beyond Line-Of-Sight (BLOS) Joint Range Extension (JRE) capability via ARC-210 Warrior radio to exchange J-Series messaging within theater; Intelligence Broadcast Receiver (IBR); limited Internet Protocol (IP)-based UHF BLOS link supporting e-mail and file transfers; and Improved Data Modem (IDM)-based digital Variable Message Format (VMF) datalink to significantly enhance close air support (CAS) missions. This integrated suite will provide the B-52 fleet with a machine-to-machine data transfer capability supporting aircraft re-tasking and re-targeting of Conventional Air Launched Cruise Missile (CALCM), Joint Air-to-Surface Standoff Missile/JASSM-Extended Range (JASSM/JASSM-ER), and other J-series weapons across the range of B-52 military operations and missions.

B-52 EHF

The B-52 Extremely High Frequency (EHF) program will integrate and install the B-52 fleet with equipment to provide secure, survivable two-way EHF SATCOM link for Emergency Action Messages (EAMs) and report-backs to meet Joint Chiefs of Staff (JCS) nuclear protected Information Exchange Requirements (IERs).

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101113F: *B-52 SQUADRONS*

The B-52 EHF will integrate the Family of Advanced Beyond-Line-of-Sight (BLOS) Terminal (FAB-T) Airborne Wideband Terminal system developed and procured by Space and Missile Center (SMC) through PE 0303601F. The FAB-T system consists of the Operator Interface Group, Modem Processor Group, and Antenna Group. The B-52 EHF will also integrate a high data rate BLOS communication link supporting IP-based Global Information Grid (GIG) interoperability into the B-52 architecture. The B-52 EHF program is planned to be accomplished in two increments. Increment 1 preserves the existing B-52 capability to receive EAMs and report-backs via SATCOM. It includes the up-front program planning and risk reduction trade studies on items such as radome mounting, Environmental Control System (ECS) capabilities, antenna boresighting, etc. to get all program requirements through System Requirements Review (SRR). Increment 1 will also include additional risk reduction studies, development of integration and installation kits for the FAB-T equipment for strategic connectivity, as well as implement trade study solutions. In addition, the ECS will need to be upgraded or replaced to meet equipment/crew comfort cooling requirements. Finally, Increment 2 will provide GIG and net-ready capability as well as full integration with other-B-52 systems.

Trainers and upgrades for CONECT & EHF
In order to maintain currency with the latest aircraft configuration, the CONECT and EHF programs will update existing trainers or use computer-based training to add CONECT and EHF functionality to meet user-training requirements and establish a system integration laboratory (SIL) for updates of the Weapon System Trainers (WST).

ATP Functionality
The B-52 Modernization program fully integrates Advanced Targeting Pods (ATP) by linking pod control, display and target geo-location with the B-52 Offensive Avionics System (OAS). The B-52 ATP effort continues the ATP (Sniper or LITENING) integration effort that began in FY07 with GWOT funding. The ATP effort develops aircraft software updates to add and incorporate advanced pod functionality into the B-52, as well as retain currency/certification/connectivity to new/upgraded variants of ATPs. In addition, this effort upgrades the software functions of the new Alternate Mission Equipment (AME) (Multi Function Display and the Integrated Hand Controller), developed and procured under the B-52 Advanced Weapons Integration (AWI) modification, and enables the B-52 to utilize a LITENING or Sniper pod. This effort provides hardware and software upgrades to the existing aircrew/maintenance trainers and the SIL.

Weapons Improvements
B-52 modernization also includes improvement of conventional warfare capability. This effort provides development and testing to rapidly integrate weapons with a large array of properties but not limited to: stealth, hard target penetration, standoff, adverse weather, precision strike, loiter, decoy, defense suppression, post-release/ launch re-target capability, area denial, mobile targets, and multiple simultaneous attack. These capabilities are provided through the integration of advanced weapons both internally (MIL-STD-1760 data bus in the weapons bay) and externally.

1760 IWB Upgrade
B-52 Modernization provides for expansion of B-52H conventional munitions carriage capability through modification of weapons carriage equipment and aircraft software IAW MIL-STD-1760 (hereafter, "1760"). The 1760 Internal Weapons Bay (1760 IWB) upgrade (also known as 1760 In the Bay) program modifies aircraft bomb bay 1760 connection locations, aircraft software, and the Common Strategic Rotary Launchers (CSRL) to carry 1760-based munitions in the B-52's internal weapons bay. It follows a 2005 flight demonstration in which a B-52 successfully dropped eight Joint Direct Attack Munitions (JDAMs) from a modified CSRL using a prototype Integrated Weapons Interface Unit (IWIU). Following the demonstration, the IWIU went into production to sustain external wing pylon 1760 requirements

under the Advanced Weapons Integration (AWI) program. Congressional adds in FY 2006 and 2007 provided the software design work and risk reduction activities for an internal 1760 capability. The 1760 IWB program uses the same external pylon IWIU to control the smart weapons on the modified CSRL. Modified CSRLs become "Conventional Rotary Launchers (CRL) and lose their current nuclear capability; therefore, only those launchers not required for nuclear missions will modified. However, nuclear capability can be restored to the CRL upon integration of 1760 Type II nuclear munitions. The program also modifies the aircraft's weapon interface Stores Management Overlay (SMO) software. The SMO for each weapon family will be upgraded to expand its capability from external pylon-only carriage to include carriage on the CRL in the weapons bay. 1760 IWB program includes hardware and software upgrades to aircrew/maintenance training devices, weapons carriage and release systems test equipment, mission planning development including implementation of the Joint Mission Planning System (JMPS), and the B-52 SIL and Avionics Integration Support Facility (AISF). The program is segregated into increments and subordinated phases. The program's threshold capability, Increment 1, Phase 1 (Increment 1.1) modifies the JDAM SMO for internal carriage of eight JDAMs on each CRL. Applicable JDAM variants include GBU-31 (2000 lb.), GBU-38 (500 lb.), and GBU-54 (500 lb. Laser JDAM). Increment 1, Phase 2 (Increment 1.2) adds 8-carriage capability of Joint Air to Surface Standoff Missile (JASSM), JASSM-Extended Range (JASSM-ER), Miniature Air Launched Decoy (MALD), and MALD-Jammer (MALD-J). Future internal capabilities appear in Increment 2 and include (1) all family variants of Wind Corrected Munitions Dispenser (WCMD) and Laser Guided Bombs (LGB); (2) Countermine System; (3) expansion of CRL carriage capability (quantity and mixed loads); and (4) additional weapon variants, such as, GBU-56 (2000 lb. Laser JDAM). Program also includes development of the B-52 baseline mission planning software for the Joint Mission Planning System (JMPS).

CNS/ATM
Capabilities identified under Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) activities will include Frequency Management (FM) Immunity, digital communications (voice and data), improved navigation accuracy such as Required Navigation Performance (RNP) or Global Positioning System (GPS) enhancements, Reduced Vertical Separation Minimum (RVSM), Traffic Alert and Collision Avoidance System (TCAS), enhanced situational awareness such as Mode S/Mode 5 Identify Friend or Foe (IFF), Communications Management Unit, HF Data Link, 8.33MHz Very High Frequency (VHF), Auto Dependent Surveillance (both address and broadcast), and any follow-on activities to associated components/systems resulting from modifications to CNS/ATM systems.

Mode S/5 IFF
Mode S/5 Identification Friend or Foe (IFF) is part of the CNS/ATM effort and will develop and integrate modern technology into the B-52 to enable it to operate in the evolving air traffic environment. This effort is driven by the International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA) mandates to comply with performance standards to allow the B-52 to operate safely in controlled airspaces. This program will also yield significant savings through more efficient flight routes and altitudes. The Mode S/5 portion includes upgrade of the current APX-64 with the APX-119 transponder capable of Mode S/5 and will leverage architecture to include simultaneous integration of Automatic Dependent Surveillance - Broadcast (ADS-B) capability required for operations in European airspace by 2015 and CONUS airspace by 2020.

Anti-skid Replacement
The B-52 Anti-Skid system is used to maintain control of aircraft during landings and taxi operations. The B-52 anti-skid system prevents aircraft skidding by sensing the exact amount of brake pressure needed for safe braking under all runway conditions without tire damage. Previous B-52 Anti-Skid supportability analysis, completed in 2006 by General Atomics, indicated a supportability end date of 2011, based on parts obsolescence, a lack of test equipment and a lack of repair personnel. Parts obsolescence continues to be a major supportability factor. However, since the previous analysis, test equipment and new depot maintenance

procedures to refurbish previously failed Anti-Skid Detectors have been put in place in order to provide spares until 2014/2015 when the replacement will be available. The Anti-Skid Replacement program develops and installs a new system. This effort includes an upgrade of the maintenance trainers.

SR2
The B-52 Strategic Radar Replacement (SR2) program replaces the current AN/APQ-166 Strategic Radar fielded in the 1960s and then upgraded in the 1970s and 1980s. Although modified several times, it has never been totally replaced and several parts of the system remain from the original design, such as the antenna reflector, feed, and casting. The legacy APQ-166 radar is becoming unsupportable with increasing signs of performance degradation and multiple DMS and materiel shortage issues. The SR2 program is a radar replacement program that will take advantage of the advanced capabilities of modern non-developmental radars, maximizing commonality with other platforms. The B-52 SR2 Program will integrate, test, and field a modern radar system, which supports all weather targeting and navigation to support the requirements of keeping the B-52 combat capable for its extended service life. Additionally, the remaining two legacy MFCDs will be replaced.

Engineering Studies & Analysis and Test & Evaluation
B-52 modernization funds test activities at the Air Force Flight Test Center (AFFTC), engineering and planning studies for potential future weapon system enhancements (weapons, sensors, avionics and EW), upgrades to the B-52 SIL, AISF and WSTs, and weapon system operational/safety, supportability, reliability, and Total Ownership Cost (TOC) improvements.

B-52 TDL
The B-52 Tactical Data Link (TDL) will integrate Line-of-Sight (LoS) TDL, LINK-16 or new technologies alternative waveforms for inclusion in the CONECT architecture. Current CONECT Capabilities Description Document identifies mission area capability gaps that support rationale for TDL communications. Full integration of TDL on the B-52 involves significant effort to design, test, and certify the system for operational use. This program will develop DoD architecture products with an Information Support Plan (ISP) to provide mission area justification for TDL integration, perform an Analysis-of-Alternatives (AoA) to determine terminal selection and transport/ waveform requirements to meet operational needs, develop candidate requirements/architecture definition utilizing the B-52 CONECT architecture as the baseline for integration, perform aircraft installation trade studies to identify potential issues with integration (such as, size, weight, power, cooling, and antenna location/ performance), and demonstrate capabilities using chosen AoA option.

Reconstitution of B-52 Nuclear Capability Study
The pivotal role the B-52 capabilities play in the AF Nuclear Mission require a study to be completed to ensure the platform maintains an enhanced level of readiness. The study will evaluate the nuclear hardening of the Integrated Weapons Interface Unit (IWIU). The study will look at the conceptual development of a MIL-STD-1760 Nuclear Weapons interface. The hardening of the IWIU will ensure the survivability of existing conventional J-series weapons as well as provide for future nuclear 1760 capable weapons both in the bay and on the wing launch platforms.

SEER Modification
The System Effectiveness and Evolutionary Requirements (SEER) modifications provide technology concurrency through preplanned product improvement initiatives to improve reliability, maintainability, and/or improved system performance issues on the B-52 aircraft and trainers. These funds ensure that the B-52 weapons system capitalizes upon established technological improvements and remains viable through 2040. Efforts may include implementation of new system architectures.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101113F: *B-52 SQUADRONS*

B-52 Structures Modification
These modifications provide improvements to the integrity of the structures to reduce corrosion repair costs, reduce maintenance workload, and enhance safety. Examples would include minor service life extension efforts, de-modifying the aircraft of obsolete, inactivated systems, and weight reduction initiatives.

ADDITIONAL EFFORTS
B-52 modernization funds additional efforts that stem from the operation and maintenance of a 48-plus-year-old aircraft, such as parts obsolescence and DMS. Examples include, but are not limited to upgrades to outdated avionics computers, mission planning interfaces to JMPS, Air Force Mission Support System (AFMSS), and other mission planning systems (JMPS), upgrades to the EW suite, and studies and analysis. All B-52 development programs support planned requirements for unique identification in their production phases.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	102.330	146.096	140.915	-	140.915
Current President's Budget	101.898	146.096	133.261	-	133.261
Total Adjustments	-0.432	-	-7.654	-	-7.654
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.432	-	-7.654	-	-7.654

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: 675039: *B-52 Modernization*		
Congressional Add: *Tactical Data Link Congressional Add*	5.949	-
Congressional Add: *Nuclear Reconstitution Study*	2.389	-
Congressional Add Subtotals for Project: 675039	8.338	-
Congressional Add Totals for all Projects	8.338	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
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Change Summary Explanation

FY12 RDT&E changes include the following adjustments: +$15.8M due to CONECT slip, +$11.4M for EHF for additional development, -$23.3M early-to-need SR2, -$11.0M for early-to-need 1760 IWB, and -$.6M for higher AF priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101113F: *B-52 SQUADRONS*	PROJECT 675039: *B-52 Modernization*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675039: *B-52 Modernization*	101.898	146.096	133.261	-	133.261	78.369	74.047	69.595	45.645	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

B-52 modernization is a comprehensive program to ensure B-52 viability to perform current and future wartime missions to include datalinks, navigation, sensors, weapons, and electronic warfare (EW) and training capabilities. B-52 modernization (initiated in FY 2005) integrates and adds both tactical and global datalink communications for real time command and control, targeting, and intelligence. It upgrades antiquated air traffic management (ATM) systems with those supported by three key functions using satellite technology: Communications, Navigation and Surveillance (CNS). Modernization upgrades training devices to support aircrew and maintenance training with the latest B-52 capability. In addition, modernization improves conventional warfare capability with additional MIL-STD-1760 smart weapons and improved weapons carriage and fully integrates advanced targeting pods with the offensive avionics system. B-52 modernization upgrades or replaces legacy defensive EW systems to include the radar warning receiver, jammers, chaff and flare dispensers and situational awareness displays as well as integration of offensive EW such as the Miniature Air-Launched Decoy (MALD) and MALD-Jammer (MALD-J). Lastly, B-52 Modernization replaces the current aging strategic radar capability with a state-of-the-art, non-developmental radar.

CONECT

The B-52 Combat Network Communications Technology (CONECT) acquisition program will support nuclear and conventional operations by upgrading the B-52 fleet with tactical datalink and voice communications capabilities along with improved threat and situational awareness to support participation in network centric operations. The CONECT upgrade includes new multi-functional color displays (MFCDs) and a digital interphone system, which will survive and function through the nuclear environment to enhance crew interaction and situational awareness. To enable net centric operations, the CONECT upgrade integrates: on-board client/ server architecture supporting distributed processing with independent control functions; UHF Beyond Line-Of-Sight (BLOS) Joint Range Extension (JRE) capability via ARC-210 Warrior radio to exchange J-Series messaging within theater; Intelligence Broadcast Receiver (IBR); limited Internet Protocol (IP)-based UHF BLOS link supporting e-mail and file transfers; and Improved Data Modem (IDM)-based digital Variable Message Format (VMF) datalink to significantly enhance close air support (CAS) missions. This integrated suite will provide the B-52 fleet with a machine-to-machine data transfer capability supporting aircraft re-tasking and re-targeting of Conventional Air Launched Cruise Missile (CALCM), Joint Air-to-Surface Standoff Missile/JASSM-Extended Range (JASSM/JASSM-ER), and other J-series weapons across the range of B-52 military operations and missions.

B-52 EHF

The B-52 Extremely High Frequency (EHF) program will integrate and install the B-52 fleet with equipment to provide secure, survivable two-way EHF SATCOM link for Emergency Action Messages (EAMs) and report-backs to meet Joint Chiefs of Staff (JCS) nuclear protected Information Exchange Requirements (IERs). The B-52 EHF will integrate the Family of Advanced Beyond-Line-of-Sight (BLOS) Terminal (FAB-T) Airborne Wideband Terminal system developed and procured by Space and Missile Center (SMC) through PE 0303601F. The FAB-T system consists of the Operator Interface Group, Modem Processor Group, and Antenna Group. The B-52 EHF will also integrate a high data rate BLOS communication link supporting IP-based Global Information Grid (GIG) interoperability into the B-52 architecture. The B-52 EHF program is planned to be accomplished in two increments. Increment 1 preserves the existing B-52 capability to receive EAMs and report-

backs via SATCOM. It includes the up-front program planning and risk reduction trade studies on items such as radome mounting, Environmental Control System (ECS) capabilities, antenna boresighting, etc. to get all program requirements through System Requirements Review (SRR). Increment 1 will also include additional risk reduction studies, development of integration and installation kits for the FAB-T equipment for strategic connectivity, as well as implement trade study solutions. In addition, the ECS will need to be upgraded or replaced to meet equipment/crew comfort cooling requirements. Finally, Increment 2 will provide GIG and net-ready capability as well as full integration with other-B-52 systems.

Trainers and upgrades for CONECT & EHF
In order to maintain currency with the latest aircraft configuration, the CONECT and EHF programs will update existing trainers or use computer-based training to add CONECT and EHF functionality to meet user-training requirements and establish a system integration laboratory (SIL) for updates of the Weapon System Trainers (WST).

ATP Functionality
The B-52 Modernization program fully integrates Advanced Targeting Pods (ATP) by linking pod control, display and target geo-location with the B-52 Offensive Avionics System (OAS). The B-52 ATP effort continues the ATP (Sniper or LITENING) integration effort that began in FY07 with GWOT funding. The ATP effort develops aircraft software updates to add and incorporate advanced pod functionality into the B-52, as well as retain currency/certification/connectivity to new/upgraded variants of ATPs. In addition, this effort upgrades the software functions of the new Alternate Mission Equipment (AME) (Multi Function Display and the Integrated Hand Controller), developed and procured under the B-52 Advanced Weapons Integration (AWI) modification, and enables the B-52 to utilize a LITENING or Sniper pod. This effort provides hardware and software upgrades to the existing aircrew/maintenance trainers and the SIL.

Weapons Improvements
B-52 modernization also includes improvement of conventional warfare capability. This effort provides development and testing to rapidly integrate weapons with a large array of properties but not limited to: stealth, hard target penetration, standoff, adverse weather, precision strike, loiter, decoy, defense suppression, post-release/ launch re-target capability, area denial, mobile targets, and multiple simultaneous attack. These capabilities are provided through the integration of advanced weapons both internally (MIL-STD-1760 data bus in the weapons bay) and externally.

1760 IWB Upgrade
B-52 Modernization provides for expansion of B-52H conventional munitions carriage capability through modification of weapons carriage equipment and aircraft software IAW MIL-STD-1760 (hereafter, "1760"). The 1760 Internal Weapons Bay (1760 IWB) upgrade (also known as 1760 In the Bay) program modifies aircraft bomb bay 1760 connection locations, aircraft software, and the Common Strategic Rotary Launchers (CSRL) to carry 1760-based munitions in the B-52's internal weapons bay. It follows a 2005 flight demonstration in which a B-52 successfully dropped eight Joint Direct Attack Munitions (JDAMs) from a modified CSRL using a prototype Integrated Weapons Interface Unit (IWIU). Following the demonstration, the IWIU went into production to sustain external wing pylon 1760 requirements under the Advanced Weapons Integration (AWI) program. Congressional adds in FY 2006 and 2007 provided the software design work and risk reduction activities for an internal 1760 capability. The 1760 IWB program uses the same external pylon IWIU to control the smart weapons on the modified CSRL. Modified CSRLs become "Conventional Rotary Launchers (CRL) and lose their current nuclear capability; therefore, only those launchers not required for nuclear missions will modified. However, nuclear capability can be restored to the CRL upon integration of 1760 Type II nuclear munitions. The program also modifies the aircraft's weapon interface

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Stores Management Overlay (SMO) software. The SMO for each weapon family will be upgraded to expand its capability from external pylon-only carriage to include carriage on the CRL in the weapons bay. 1760 IWB program includes hardware and software upgrades to aircrew/maintenance training devices, weapons carriage and release systems test equipment, mission planning development including implementation of the Joint Mission Planning System (JMPS), and the B-52 SIL and Avionics Integration Support Facility (AISF). The program is segregated into increments and subordinated phases. The program's threshold capability, Increment 1, Phase 1 (Increment 1.1) modifies the JDAM SMO for internal carriage of eight JDAMs on each CRL. Applicable JDAM variants include GBU-31 (2000 lb.), GBU-38 (500 lb.), and GBU-54 (500 lb. Laser JDAM). Increment 1, Phase 2 (Increment 1.2) adds 8-carriage capability of Joint Air to Surface Standoff Missile (JASSM), JASSM-Extended Range (JASSM-ER), Miniature Air Launched Decoy (MALD), and MALD-Jammer (MALD-J). Future internal capabilities appear in Increment 2 and include (1) all family variants of Wind Corrected Munitions Dispenser (WCMD) and Laser Guided Bombs (LGB); (2) Countermine System; (3) expansion of CRL carriage capability (quantity and mixed loads); and (4) additional weapon variants, such as, GBU-56 (2000 lb. Laser JDAM). Program also includes development of the B-52 baseline mission planning software for the Joint Mission Planning System (JMPS).

CNS/ATM
Capabilities identified under Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) activities will include Frequency Management (FM) Immunity, digital communications (voice and data), improved navigation accuracy such as Required Navigation Performance (RNP) or Global Positioning System (GPS) enhancements, Reduced Vertical Separation Minimum (RVSM), Traffic Alert and Collision Avoidance System (TCAS), enhanced situational awareness such as Mode S/Mode 5 Identify Friend or Foe (IFF), Communications Management Unit, HF Data Link, 8.33MHz Very High Frequency (VHF), Auto Dependent Surveillance (both address and broadcast), and any follow-on activities to associated components/systems resulting from modifications to CNS/ATM systems.

Mode S/5 IFF
Mode S/5 Identification Friend or Foe (IFF) is part of the CNS/ATM effort and will develop and integrate modern technology into the B-52 to enable it to operate in the evolving air traffic environment. This effort is driven by the International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA) mandates to comply with performance standards to allow the B-52 to operate safely in controlled airspaces. This program will also yield significant savings through more efficient flight routes and altitudes. The Mode S/5 portion includes upgrade of the current APX-64 with the APX-119 transponder capable of Mode S/5 and will leverage architecture to include simultaneous integration of Automatic Dependent Surveillance - Broadcast (ADS-B) capability required for operations in European airspace by 2015 and CONUS airspace by 2020.

Anti-Skid Replacement
The B-52 Anti-Skid system is used to maintain control of aircraft during landings and taxi operations. The B-52 Anti-Skid system prevents aircraft skidding by sensing the exact amount of brake pressure needed for safe braking under all runway conditions without tire damage. Previous B-52 Anti-Skid supportability analysis, completed in 2006 by General Atomics, indicated a supportability end date of 2011, based on parts obsolescence, a lack of test equipment and a lack of repair personnel. Parts obsolescence continues to be a major supportability factor. However, since the previous analysis, test equipment and new depot maintenance procedures to refurbish previously failed Anti-Skid Detectors have been put in place in order to provide spares until 2014/2015 when the replacement will be available. The Anti-Skid Replacement program develops and installs a new system. This effort includes an upgrade of the maintenance trainers.

SR2

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The B-52 Strategic Radar Replacement (SR2) program replaces the current AN/APQ-166 Strategic Radar fielded in the 1960s and then upgraded in the 1970s and 1980s. Although modified several times, it has never been totally replaced and several parts of the system remain from the original design, such as the antenna reflector, feed, and casting. The legacy APQ-166 radar is becoming unsupportable with increasing signs of performance degradation and multiple DMS and materiel shortage issues. The SR2 program is a radar replacement program that will take advantage of the advanced capabilities of modern non-developmental radars, maximizing commonality with other platforms. The B-52 SR2 Program will integrate, test, and field a modern radar system, which supports all weather targeting and navigation to support the requirements of keeping the B-52 combat capable for its extended service life. Additionally, the remaining two legacy MFCDs will be replaced.

Engineering Studies & Analysis and Test & Evaluation
B-52 modernization funds test activities at the Air Force Flight Test Center (AFFTC), engineering and planning studies for potential future weapon system enhancements (weapons, sensors, avionics and EW), upgrades to the B-52 SIL, AISF and WSTs, and weapon system operational/safety, supportability, reliability, and Total Ownership Cost (TOC) improvements.

B-52 TDL
The B-52 Tactical Data Link (TDL) will integrate Line-of-Sight (LoS) TDL, Link-16 or new technologies alternative waveforms for inclusion in the CONECT architecture. Current CONECT Capabilities Description Document identifies mission area capability gaps that support rationale for TDL communications. Full integration of TDL on the B-52 involves significant effort to design, test, and certify the system for operational use. This program will develop DoD architecture products with an Information Support Plan (ISP) to provide mission area justification for TDL integration, perform an Analysis-of-Alternatives (AoA) to determine terminal selection and transport/ waveform requirements to meet operational needs, develop candidate requirements/architecture definition utilizing the B-52 CONECT architecture as the baseline for integration, perform aircraft installation trade studies to identify potential issues with integration (such as, size, weight, power, cooling, and antenna location/ performance), and demonstrate capabilities using chosen AoA option.

Reconstitution of B-52 Nuclear Capability Study
The pivotal role the B-52 capabilities play in the AF Nuclear Mission require a study to be completed to ensure the platform maintains an enhanced level of readiness. The study will evaluate the nuclear hardening of the Integrated Weapons Interface Unit (IWIU). The study will look at the conceptual development of a MIL-STD-1760 Nuclear Weapons interface. The hardening of the IWIU will ensure the survivability of existing conventional J-series weapons as well as provide for future nuclear 1760 capable weapons both in the bay and on the wing launch platforms.

SEER Modification
The System Effectiveness and Evolutionary Requirements (SEER) modifications provide technology concurrency through preplanned product improvement initiatives to improve reliability, maintainability, and/or improved system performance issues on the B-52 aircraft and trainers. These funds ensure that the B-52 weapons system capitalizes upon established technological improvements and remains viable through 2040. Efforts may include implementation of new system architectures.

B-52 Structures Modification
These modifications provide improvements to the integrity of the structures to reduce corrosion repair costs, reduce maintenance workload, and enhance safety. Examples would include minor service life extension efforts, de-modifying the aircraft of obsolete, inactivated systems, and weight reduction initiatives.

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ADDITIONAL EFFORTS
B-52 modernization funds additional efforts that stem from the operation and maintenance of a 48-plus-year-old aircraft, such as parts obsolescence and DMS. Examples include, but are not limited to upgrades to outdated avionics computers, mission planning interfaces to JMPS, Air Force Mission Support System (AFMSS), and other mission planning systems (JMPS), upgrades to the EW suite, and studies and analysis. All B-52 development programs support planned requirements for unique identification in their production phases.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: ATP ***Description:*** Develops software updates to integrate Sniper and LITENING ATPs and to add advanced ATP capabilities. Upgrades software functions of the AME control stick and display enabling all wired aircraft to utilize either Sniper or LITENING ATPs. ***FY 2010 Accomplishments:*** Test LITENING pod operational software in lab environment prior to developmental test. Execute developmental test to demonstrate and verify required performance for ATP software functionality, includes 8-10 unique test events. Provide repair and/or parts replacement for test pod assets; manage support for ATP pod software development, test and logistics; upgrade software functions of AME. ***FY 2011 Plans:*** Complete development, test, verify, and field ATP functions in B-52 WST equipment. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***	8.293	2.180	-	-	-
Title: CONECT ***Description:*** Integrates rapid re-tasking capability of J-series weapons and conventional cruise missiles; dedicated BLOS UHF comm/datalink; computer network infrastructure; digital interphone; MFCDs; and an IBR. ***FY 2010 Accomplishments:***	38.198	23.543	17.875	-	17.875

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101113F: *B-52 SQUADRONS*	PROJECT 675039: *B-52 Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continuation of CONECT ground and flight testing. Begin Technical Order Validation and Verification (TOV&V). Begin Depot Stand-up planning. Continue integration and lab testing of software drop C, begin integration of software drop D. Flight test aircraft was in depot mod 3Q FY10 through 1Q FY11. ***FY 2011 Plans:*** Resume ground and flight testing of Drop C, Drop D, and IBR. Begin integration and lab testing of additional J-Series messages. Analyze/fix ground/flight test issues as they are identified. Begin redesign of DMS LRU boards identified during FY10. Design, install, and test the redesign of the interphone system due to a deficiency found during flight test. ***FY 2012 Base Plans:*** Complete flight testing of the additional J-Series messages and IBR. Analyze/fix ground/flight test issues as they are identified. Begin incorporation of CONECT into the training devices. Continue DMS redesign and test effort. Request Milestone C approval to enter into Low Rate Initial Production (LRIP). ***FY 2012 OCO Plans:***					
Title: B-52 EHF ***Description:*** Integrates the FAB-T Airborne Wideband Terminal (AWT) to preserve existing B-52 capability to receive EAMs and transmit report-backs; supports USSTRATCOM requirement for secure, survivable communications. Upgrades/replaces B-52 ECS to support EHF and accommodate for B-52 aircraft system modifications. Future increment provides integration into GIG to provide wideband BLOS datalink. ***FY 2010 Accomplishments:*** Initiated EHF planning and risk reduction efforts to reach System Requirement Review (SRR) including the ECS requirements. Program re-set by Program Executive Officer (PEO) to pre-milestone B to better align with development of the AWT. ***FY 2011 Plans:*** Complete the additional risk reduction task efforts necessary to reach System Requirement Review (SRR). Initiate work efforts required to bring the EHF program through Preliminary Design Review (PDR), including	17.983	45.349	43.523	-	43.523

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
ECS, upgrade the SIL, purchase additional government furnished property (GFP) for the SIL, and perform antenna field testing and analysis. ***FY 2012 Base Plans:*** Continue PDR and SIL upgrade work efforts for AWT and ECS in preparation for MS B. Perform aircraft thermal survey and temperature model update to support PDR of the ECS upgrade. Continue integration and test planning of Increment I capability for EAMs and report backs. ***FY 2012 OCO Plans:***					
Title: Anti-skid ***Description:*** Replaces legacy B-52 Anti-skid system with modernized system improving safety and cockpit display. Anti-Skid Detector has been identified a critical obsolescence item, which begins to be unsupportable in FY15. ***FY 2010 Accomplishments:*** Define requirements for the Group A and control panel; begin development of the Group A hardware and control panel. Begin phased Systems Safety Analysis of anti-skid system level Failure Modes Effects and Criticality Analysis (FMECA); address aircraft integration issues; develop source control drawings, installation and deletion drawings; develop/revise wiring diagrams, harness designs, installations and deletions drawings. Conduct additional electromagnetic interference design and qualification requirements. ***FY 2011 Plans:*** Continue phased Systems Safety Analysis; conduct Hardware in the Loop (HITL) simulation and test reports; develop preliminary Tech Order (TO) source data and installation procedures; manufacture and procure flight test articles and hardware; continue flight test planning activities; identify and deliver overhaul special test equipment. ***FY 2012 Base Plans:*** Continue with HITL Simulations; Flight Test Activities, TO source data, Airworthiness Certification documents ***FY 2012 OCO Plans:***	9.325	5.996	6.218	-	6.218
Title: SR2	8.289	35.923	36.679	-	36.679

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Integrates modern non-developmental airborne radar replacing current, mission critical APQ-166 Strategic Radar, last upgraded in early-1980s. Legacy Strategic Radar is experiencing systemic sustainment and obsolescence issues and begins to be unsupportable in FY16. ***FY 2010 Accomplishments:*** SR2 program attained Material Development Decision (MDD) approval in 2Q FY10; Immediately following the MDD Approval, the program initiated risk reduction studies in support of the Material Solution Analysis (MSA) phase. Additionally, an eight-month Analysis of Alternatives (AoA) led by Air Force Global Strike Command was initiated in 3Q FY10. ***FY 2011 Plans:*** The SR2 program will continue the risk reduction activities AoA, and MSA phase studies and analysis. AFROC currently planned for 2Q FY11. MS A is planned for 3Q FY11. ***FY 2012 Base Plans:*** Initiate Technology Development Phase including integration of radar components, completion of preliminary design review ***FY 2012 OCO Plans:***					
Title: Mode S/5 IFF ***Description:*** Integrates modern IFF technology onto the B-52 by replacing the current system with APX-119; required by DoD, FAA and ICAO. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** Define requirements and begin development of the Group A hardware and control panel; conduct system safety analysis of APX-119 FMECA as it relates to the aircraft integration. Address aircraft integration issues related to space, weight, electrical power, hydraulics, cooling impacts. Begin development of test strategy to define criteria to verify the system meets B-52 requirements. Develop source control drawings, develop/revise wiring diagrams, harness designs and installations drawings. Procure APX-119 test article and Common Control Panel prototype to begin lab testing of design. ***FY 2012 Base Plans:***	-	8.583	6.166	-	6.166

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Upgrade SIL, EMI/EMC Test procedures, identify long-lead components, complete all fabrication drawings, develop Installation Drawing package, conduct SIL testing, support ground/flight testing and Air Traffic Control Radar System IFF Mark 12/Mark 12A Systems platform certification, and report certification results ***FY 2012 OCO Plans:***					
Title: 1760 IWB ***Description:*** 1760 Internal Weapons Bay Upgrade - provides internal J-series weapons capability through modification of CSRLs with IWIU and upgraded weapon management software. ***FY 2010 Accomplishments:*** Continue development of JDAM SMO for internal bomb bay weapons release (Increment 1.1). For software testing perform engineering design review; update documentation and transition to Dynamic Object Oriented Requirements System (DOORS); perform Informal Qualification Testing (IQT) of SMO software; develop test procedures for Formal Qualification Testing (FQT); update Weapon System Simulator (WSS) and Data transfer cartridge Management System (DMS). For CSRL hardware evaluation perform field survey to evaluate CSRLs and Launcher-Loader Adapters (LLA); perform engineering studies to establish CRL baseline configuration; develop CSRL demodification procedure; design, develop, and fabricate six CRL handling fixtures; develop drawings for CRL baseline; and repair and modify four CSRLs. Perform CRL power distribution study. Perform Power Drive Unit Controller production readiness study. Begin development of the B-52. Baseline mission planning software for the JMPS. ***FY 2011 Plans:*** Continue Increment 1.1. Perform systems engineering and development to complete JDAM SMO FQT. Design, develop, fabricate and install modification components and drawings to yield four CRL prototypes for laboratory and flight testing to support concurrent testing in multiple locations. Develop test procedures and complete SIL testing of CRL protoypes and JDAM SMO software. Begin contractor support of ground and flight test concept development, planning, and test mission development. Support test instrumentation and modification to test aircraft. Begin support of fielding documentation. Design, develop and test software and hardware modifications to armament test support equipment. Begin mission planning modifications (UNIX system) in support of JDAM. Begin 1760 Internal Weapons Bay Increment 1, Phase 2 (Increment 1.2): development of JASSM/JASSM-ER SMO and MALD/MALD-J SMO modifications for internal bay capability. Begin B-52-specific JMPS development	11.472	24.522	22.800	-	22.800

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
for JASSM and MALD and their respective variants. Begin Seek Eagle safe-separation analysis and modeling for bomb bay releases of JDAM, JASSM, MALD, and their variants. ***FY 2012 Base Plans:*** Continue Increment 1.1: Continue Seek Eagle safe separation analysis; conduct ground and flight testing of CRL prototype and JDAM SMO; finalize drawings for aircraft, CRL, and test support equipment modification kits; and complete development of technical orders. Continue Increment 1.2: Modify JASSM and MALD SMOs (including respective -ER and -J variant capabilities); perform engineering and test support for SIL, ground and flight testing. Develop technical orders. Continue B-52 JMPS development, testing, and certification with JASSM and MALD, including respective variants. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	93.560	146.096	133.261	-	133.261

	FY 2010	FY 2011
Congressional Add: Tactical Data Link Congressional Add	5.949	-
FY 2010 Accomplishments: Congressional Add: Develop TDL architecture with an Information Support Plan. Perform an AoA. Develop candidate requirements and architecture definition for the B-52 CONECT architecture baseline. Perform SIL demonstration. Perform aircraft installation trade study. ***FY 2011 Plans:***		
Congressional Add: Nuclear Reconstitution Study	2.389	-
FY 2010 Accomplishments: Perform a conceptual study of the requirements needed to harden the IWIU for existing conventional J-series weapons and future nuclear 1760 capable weapons. The study will look at the feasibility of the integration of the Nuclear hardened IWIU (NHIWIU) on both the Common Strategic Rotary launcher and the SUU-67/72 pylons. ***FY 2011 Plans:***		
Congressional Adds Subtotals	8.338	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0101113F: *B52 Squadrons, Aircraft Procurement BP11, Mods APAF*	59.115	66.890	92.241	0.000	92.241	128.497	166.005	124.776	110.256	Continuing	Continuing
• PE 0809731F: *Training Support to Units, Aircraft Proceurement BP11, Mods APAF*	2.161	2.184	1.656	0.000	1.656	1.934	2.296	2.341	2.383	Continuing	Continuing
• PE 0101113F (2): *B52 Squadrons, Aircraft Procurement BP13, ICS APAF*	0.000	3.443	0.000	0.000	0.000	7.704	11.150	0.000	0.000	Continuing	Continuing
• PE 0101113F (3): *B52 Squadrons, Aircraft Procurement BP16, Initial Spares APAF*	7.638	7.050	0.000	0.000	0.000	7.011	7.825	8.315	2.516	Continuing	Continuing
• PE 0101113F (4): *B52 Squadrons, Aircraft Procurement BP19, Depot Standup APAF*	0.000	6.732	0.000	0.000	0.000	11.099	11.303	0.000	0.000	Continuing	Continuing
• PE 0101113F (5): *B52 Squadrons, Aircraft Procurement BP12, Support Equipment*	16.871	16.960	14.457	0.000	14.457	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

The B-52 CONECT EMD prime contract is sole source to Boeing Defense, Space & Security (DSS), Wichita, KS. Boeing will design, develop, test and procure the necessary equipment from their subcontractors; develop engineering drawings, logistic and technical data, and time compliance technical order (TCTO) for installation on the B-52. The EMD effort includes installing and testing CONECT equipment on a B-52 aircraft. The B-52 trainer assets will be modified to support CONECT.

The B-52 EHF EMD prime contract is sole source to Boeing DSS, Wichita, KS. Boeing will preserve the B-52 capability to receive EAMS and report-backs, upgrade current SIL and the environmental control system. The Engineering Manufacturing Development (EMD) effort will include installing and testing the EHF equipment on a B-52 aircraft. The B-52 trainer assets will be modified to support EHF.

The B-52 ATP program software development contract is sole sourced to Boeing DSS, Wichita. The ATP trainer development contract will be awarded by OO-ALC via their trainer contract.

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The 1760 Internal Weapons Bay program will acquire software development and hardware design via a sole-source contract to Boeing DSS, Wichita, KS. Deliverables include an updated J-series weapon SMOs (software), a prototype modified CSRL, logistics support, ground and flight test support, and engineering drawings. Production of IWIU, required for each modified CSRL, and will be sole source to Boeing. The program will competitively procure the CSRL modification kits (cables, connectors, and mounting brackets).

The B-52 Anti-Skid program is a joint effort between OC-ALC and OO-ALC. The modification will be implemented via Program Depot Maintenance (PDM) and Contract Field Team (CFT).

The B-52 Strategic Radar Replacement (SR2) Program is in the initial stage of acquisition planning. The detailed acquisition strategy will be developed based on the results of market research.

The Mode S/5 IFF Program is in the initial stage of acquisition planning. A detailed acquisition plan will be developed based on the results of the engineering studies being completed by ARINC Engineering Services, Oklahoma City, OK.

The Tactical Data Link (TDL) will be sole source to Boeing DSS, Wichita, KS for the integration of TDL based on the CONECT baseline.

The Reconstitution of B-52 Nuclear Capability Study will be sole source to Boeing DSS.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CONECT EMD	SS/CPIF	Boeing:Wichita, KS	31.646	14.163	Oct 2010	9.659	Oct 2011	-		9.659	Continuing	Continuing	0.000
B-52 EHF EMD	SS/Various	Boeing:Wichita, KS	13.446	40.999	Jan 2011	38.473	Oct 2011	-		38.473	Continuing	Continuing	0.000
ATP Functions	Allot	WPAFB:Dayton, OH	1.300	-		-		-		-	0.000	1.300	0.000
Mode S/5 IFF EMD	C/CPFF	ARINC Engineering Services:Oklahoma City, OK	-	8.583	Jun 2011	6.176	Jun 2012	-		6.176	Continuing	Continuing	0.000
SR2	SS/CPFF	Boeing:Wichita, KS	4.015	5.900	Jan 2011	4.000	Jan 2012	-		4.000	97.304	111.219	0.000
Anti-Skid Replacement	Various	Boeing/ES3/OO-ALC UT:Wichita; Clearfield UT, KS	9.325	5.353	Jul 2011	3.228	May 2012	-		3.228	Continuing	Continuing	0.000
1760 IWB Software Development	SS/Various	Boeing:Wichita, KS	1.991	7.800	Mar 2011	8.714	Jan 2012	-		8.714	0.000	18.505	0.000
1760 IWB Production Development	SS/Various	Boeing:Wichita, KS	6.708	10.328	Mar 2011	5.847	Jan 2012	-		5.847	0.000	22.883	0.000
1760 IWB Mission Planning Development	PO	557 SMXS:Tinker AFB, OK	2.573	3.100	Jan 2011	2.205	Jan 2012	-		2.205	0.000	7.878	0.000
TDL	SS/FFP	Boeing:Wichita, KS	5.949	-		-		-		-	0.000	5.949	0.000
Reconstitution of B-52 Nuclear Capability Study	C/CPAF	Boeing:Wichita, KS	2.389	-		-		-		-	0.000	2.389	0.000
		Subtotal	79.342	96.226		78.302		-		78.302			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CONECT Simulator/Trainer	Various	507 ACSS:OO-ALC, UT	0.550	0.401	Jan 2011	0.413	Jan 2012	-		0.413	Continuing	Continuing	0.000
B-52 EHF Simulator/Trainer	MIPR	507 ACSS:OO-ALC, UT	-	-		-		-		-	Continuing	Continuing	0.000
B-52 EHF Satellite Simulator - Lincoln Labs (FFRDC)	MIPR	ESC:Hanscom AFB, MA	3.340	2.100	Oct 2010	0.700	Jun 2012	-		0.700	0.000	6.140	0.000
ATP Software Trainer Upgrades	MIPR	OO-ALC:, UT	-	2.180	Jan 2011	-		-		-	0.000	2.180	0.000

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ATP Test Support	Various	Boeing:Wichita, KS	3.793	-		-		-		-	0.000	3.793	0.000
ATP Logistics Support	Various	Wright-Patterson AFB:, OH	0.097	-		-		-		-	0.000	0.097	0.000
SR2	Various	Wright-Patterson AFB:, OH	3.347	24.418	Oct 2010	25.871	Oct 2011	-		25.871	5.000	58.636	0.000
1760 IWB Trainer/Simulation Development	MIPR	OO-ALC:, UT	-	0.950	Jun 2011	0.949	Jun 2012	-		0.949	0.000	1.899	0.000
		Subtotal	11.127	30.049		27.933		-		27.933			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CONECT 419 FLTS	PO	419 FLTS:Edwards AFB, CA	1.300	2.700	Oct 2010	1.300	Oct 2011	-		1.300	Continuing	Continuing	0.000
B-52 EHF 419 FLTS	PO	419 FLTS:Edwards AFB, CA	0.075	0.267	Jan 2011	0.267	Jan 2012	-		0.267	Continuing	Continuing	0.000
CONECT JTIC	MIPR	JTIC:Fort Huachuca, AZ	0.200	0.300	Oct 2010	0.200	Oct 2011	-		0.200	Continuing	Continuing	0.000
B-52 EHF	PO	JTIC/ AFOTECH:Edwards AFB, CA	0.025	0.801	May 2011	2.901	May 2012	-		2.901	Continuing	Continuing	0.000
ATP	PO	419 FLTS:Edwards AFB, CA	2.903	-		-		-		-	0.000	2.903	0.000
SR2	PO	Not specified.:Edwards AFB, CA	0.046	1.000	Jan 2011	1.600	Jan 2012	-		1.600	15.400	18.046	0.000
Anti-Skid Replacement	Various	Not specified.:Edwards, AFB, CA	-	0.643	Apr 2011	2.942	Mar 2012	-		2.942	0.000	3.585	0.000
1760 IWB Government Test	PO	Not specified.:Edwards AFB, CA	-	2.172	Jun 2011	4.939	Jan 2012	-		4.939	0.000	7.111	0.000
		Subtotal	4.549	7.883		14.149		-		14.149			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CONECT ASC/WWV	Various	ASC/WWV:Wright-Patterson AFB, OH	2.807	4.083	Oct 2010	4.350	Oct 2011	-		4.350	Continuing	Continuing	0.000
B-52 EHF	Various	ASC/WWV:Wright-Patterson AFB, OH	0.254	1.082	Oct 2010	1.082	Oct 2011	-		1.082	Continuing	Continuing	0.000
CONECT OCALC/GKDF	Various	OCALC/GKDF:Tinker AFB, OK	0.910	1.088	Oct 2010	1.121	Oct 2011	-		1.121	Continuing	Continuing	0.000
B-52 EHF OCALC/GKDF	Various	OC-ALC/GKDF:Tinker AFB, OK	-	-		-		-		-	Continuing	Continuing	0.000
ATP Management Support	Various	Not specified.:Tinker AFB, OK	0.200	-		-		-		-	0.000	0.200	0.000
SR2	Various	Not specified.:Tinker AFB, OK	0.208	4.605	Oct 2010	5.208	Oct 2011	-		5.208	10.629	20.650	0.000
1760 IWB Program Management Support	Various	Not specified.:Tinker AFB, OK	0.200	0.172	Aug 2011	0.184	Aug 2012	-		0.184	0.000	0.556	0.000
CONECT Program Support, Studies and Analysis, and Misc Expenses	Various	Various:,	0.785	0.808	Oct 2010	0.832	Oct 2011	-		0.832	0.000	2.425	0.000
B-52 EHF Program Support, Studies and Analysis	Various	Various:,	0.843	0.100	Oct 2010	0.100	Oct 2011	-		0.100	0.000	1.043	0.000
SR2 Program Support, Studies and Analysis	Various	Various:,	0.673	-		-		-		-	0.000	0.673	0.000
		Subtotal	6.880	11.938		12.877		-		12.877			0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	101.898	146.096		133.261		-		133.261			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
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B-52H Modernization Schedule

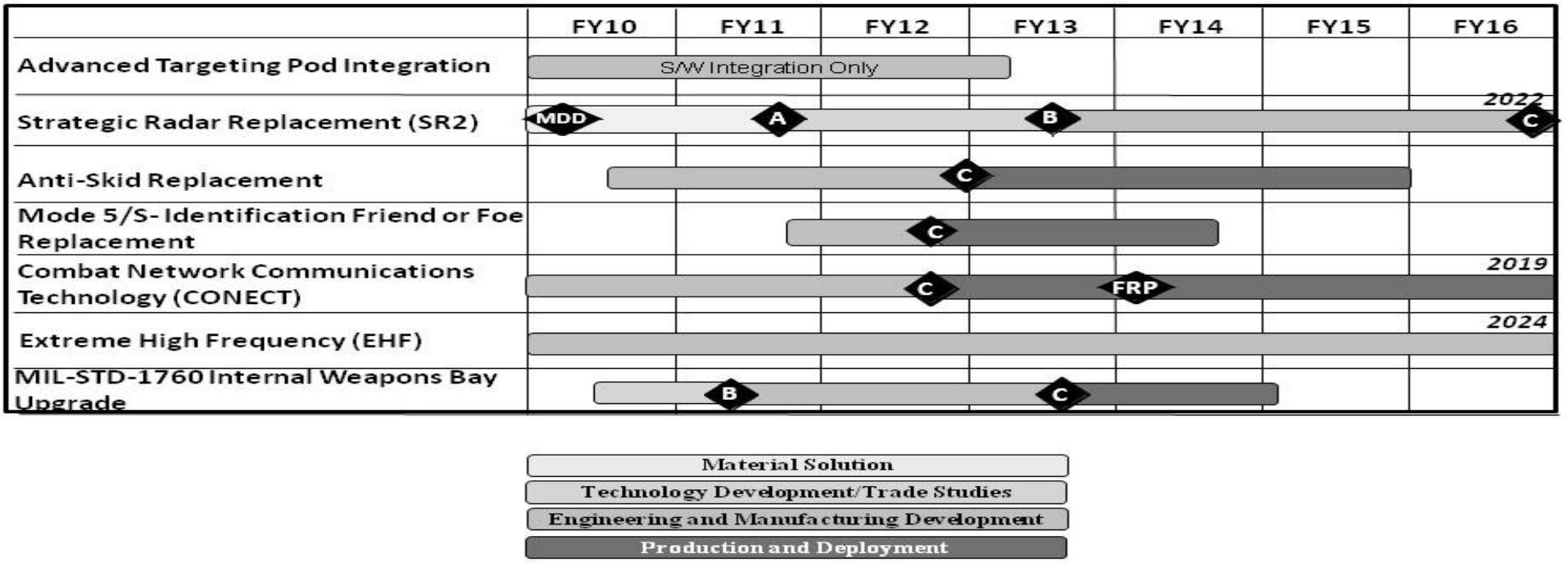

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CONECT Ground/Flight Test Drop D	3	2011	3	2012
CONECT LRIP Milestone C	3	2012	3	2012
CONECT OA	2	2012	2	2012
CONECT IOT&E	1	2013	1	2013
CONECT FRP DECISION	1	2014	1	2014
B-52 EHF EMD Increment 1	1	2010	4	2016
Anti-Skid EMD	2	2010	4	2012
Anti-Skid LRIP	3	2013	3	2013
SR2 MDD	2	2010	2	2010
SR2 MS A	3	2011	3	2011
ATP Flight Test	1	2011	1	2011
Mode S/5 IFF EMD	3	2011	3	2012
Mode S/5 IFF LRIP	3	2012	3	2012
1760 IWB EMD	2	2011	3	2013
1760 IWB Milestone C	3	2013	3	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0101122F: *AIR LAUNCHED CRUISE MISSILE*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	3.536	3.631	0.803	-	0.803	0.430	0.450	0.455	0.459	Continuing	Continuing
674797: *Flight Testing & Navigation Enhancement*	3.536	3.631	0.803	-	0.803	0.430	0.450	0.455	0.459	Continuing	Continuing

A. Mission Description and Budget Item Justification

The AGM-86B, Air Launched Cruise Missile (ALCM), is a subsonic, air-to-surface strategic nuclear missile, operational since 1982. Armed with a W80 warhead, it is designed to evade air and ground-based defenses in order to strike targets at any location within any enemy's territory. The ALCM is designed for B-52H internal and external carriage.

The purpose of this program element is to ensure ALCM sustainability to FY30 and identify concepts and materiel solutions to replace the aging ALCM fleet in support of Air Force strategic nuclear deterrence and global strike mission requirements.

An ALCM Service Life Extension Program (SLEP) was developed to meet an AF Long Range Plan requirement to extend ALCM Service Life to FY30. The results of SLEP studies identified system components and support equipment that will become non-supportable prior to 2030. Service life extension of this critical weapon is essential to meet United States Strategic Command (USSTRATCOM) deliberate planning commitments.

W80 Joint Test Assembly (JTA-8) Replacement was an effort to improve the unsupportable W80 JTA-1, a simulated warhead used for flight testing. This replacement effort revised and improved the W80 JTA-1, Interface Control Documents (ICDs), provided integration support, and supported flight test qualification. In FY09, the Research, Development, Test, and Evaluation (RDT&E) effort completed. Minimal effort remains through FY11 for finalizing and completing archival of all data.

The Aging and Surveillance program for ALCM continously assesses critical components such as those in the safe arm and fuze subsystem, navigation/guidance system, and electrical/power distribution system. The program identifies aging trends prior to failures in fielded components that would result in fleet-wide reliability and supportability problems. Development funds are required to update software, test procedures, and test equipment from the original Advanced Cruise Missile (ACM) configurations to the new ALCM configurations. Development of new support equipment is also required for the Ageing & Surveillance program.

Long Range Stand Off (LRSO) seeks to identify viable concepts and materiel solutions to replace the legacy Air Launched Cruise Missile (ALCM) fleet in support of Air Force's strategic deterrence and global strike mission requirements. Funding and program content for this effort moves into PE 010125F Nuclear Weapons Modernization in FY12.

BA7- This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101122F: *AIR LAUNCHED CRUISE MISSILE*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	3.652	3.631	0.424	-	0.424
Current President's Budget	3.536	3.631	0.803	-	0.803
Total Adjustments	-0.116	-	0.379	-	0.379
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.101	-			
• Other Adjustments	-0.015	-	0.379	-	0.379

Change Summary Explanation

The LRSO program moves to PE 0101125F beginning in FY12.

FY12 funding increase supports continuation of the ALCM Aging & Surveillance program.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101122F: *AIR LAUNCHED CRUISE MISSILE*	PROJECT 674797: *Flight Testing & Navigation Enhancement*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674797: *Flight Testing & Navigation Enhancement*	3.536	3.631	0.803	-	0.803	0.430	0.450	0.455	0.459	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The AGM-86B, Air Launched Cruise Missile (ALCM), is a subsonic, air-to-surface strategic nuclear missile, operational since 1982. Armed with a W80 warhead, it is designed to evade air and ground-based defenses in order to strike targets at any location within any enemy's territory. The ALCM is designed for B-52H internal and external carriage.

The purpose of this program element is to ensure ALCM sustainability to FY30 and identify concepts and materiel solutions to replace the aging ALCM fleet in support of Air Force strategic nuclear deterrence and global strike mission requirements.

An ALCM Service Life Extension Program (SLEP) was developed to meet an AF Long Range Plan requirement to extend ALCM Service Life to FY30. The results of SLEP studies identified system components and support equipment that will become non-supportable prior to 2030. Service life extension of this critical weapon is essential to meet United States Strategic Command (USSTRATCOM) deliberate planning commitments.

W80 Joint Test Assembly (JTA-8) Replacement was an effort to improve the unsupportable W80 JTA-1, a simulated warhead used for flight testing. This replacement effort revised and improved the W80 JTA-1, Interface Control Documents (ICDs), provided integration support, and supported flight test qualification. In FY09, the Research, Development, Test, and Evaluation (RDT&E) effort completed. Minimal effort remains through FY11 for finalizing and completing archival of all data.

The Aging and Surveillance program for ALCM continously assesses critical components such as those in the safe arm and fuze subsystem, navigation/guidance system, and electrical/power distribution system. The program identifies aging trends prior to failures in fielded components that would result in fleet-wide reliability and supportability problems. Development funds are required to update software, test procedures, and test equipment from the original Advanced Cruise Missile (ACM) configurations to the new ALCM configurations. Development of new support equipment is also required for the Ageing & Surveillance program.

Long Range Stand Off (LRSO) seeks to identify viable concepts and materiel solutions to replace the legacy Air Launched Cruise Missile (ALCM) fleet in support of Air Force's strategic deterrence and global strike mission requirements. Funding and program content for this effort moves into PE 010125F Nuclear Weapons Modernization in FY12.

BA7- This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101122F: *AIR LAUNCHED CRUISE MISSILE*	PROJECT 674797: *Flight Testing & Navigation Enhancement*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: W80 Joint Test Assembly (JTA-8) Replacement Support ***Description:*** W80 JTA-8 Replacement Support, W80 LEP; revise the W80-1 ICDs, provide integration support, and flight test qualification. ***FY 2010 Accomplishments:*** Continued integration support and flight test qualification. ***FY 2011 Plans:*** Complete integration support and flight test qualification. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***	0.005	0.070	-	-	-
Title: ALCM Aging and Surveillance Program ***Description:*** Continue aging and surveillance program for ALCM system components to identify age related failure trends and prevent reliability and supportability issues. ***FY 2010 Accomplishments:*** Continued execution of aging and surveillance program for ALCM system components to identify age related failure trends and prevent reliability and supportability issues. ***FY 2011 Plans:*** Continue execution of aging and surveillance program for ALCM system components to identify age related failure trends and prevent reliability and supportability issues. ***FY 2012 Base Plans:*** Continue execution of aging and surveillance program for ALCM system components to identify age related failure trends and prevent reliability and supportability issues. ***FY 2012 OCO Plans:***	0.312	0.261	0.803	-	0.803
Title: Long Range Stand Off (LRSO) ***Description:*** Conduct Materiel Solution Analysis (MSA) phase for LRSO effort. ***FY 2010 Accomplishments:***	3.219	3.300	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101122F: *AIR LAUNCHED CRUISE MISSILE*	PROJECT 674797: *Flight Testing & Navigation Enhancement*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Initiated Pre-LRSO MSA planning. ***FY 2011 Plans:*** Support Materiel Development Decision (MDD). Initiate LRSO MSA phase activities. ***FY 2012 Base Plans:*** Effort moved to Nuclear Weapons Modernization PE 0101125F. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	3.536	3.631	0.803	-	0.803

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0101122F - ALCM: *MPAF, Missile Modifications BA 03*	0.000	10.795	9.996	0.000	9.996	6.255	0.000	0.000	0.000	Continuing	Continuing
• PE 0101122F - ALCM (1): *MPAF, Replenishment Spares BA 04*	10.875	0.266	1.296	0.000	1.296	5.192	4.561	4.819	2.236	Continuing	Continuing
• PE 010122F - ALCM: *OPAF, Electronics & Telecomunications Equipment (BP83) BA 03*	1.535	1.584	1.582	0.000	1.582	1.635	1.659	1.687	1.716	Continuing	Continuing
• PE 0101125F: *RDT&E*	0.000	0.000	9.926	0.000	9.926	39.395	198.629	340.842	295.505	Continuing	Continuing

D. Acquisition Strategy

The ALCM JTA-8 Replacement Support will be performed utilizing a Firm Fixed Price (FFP) contract.

The ALCM Aging and Surveillance Program is being developed and matured by the prime contractor utilizing annual delivery orders on a Firm Fixed Price (FFP) contract. A new contract in FY12 will change the period of performance from June-to-June to December-to-December.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101122F: *AIR LAUNCHED CRUISE MISSILE*	PROJECT 674797: *Flight Testing & Navigation Enhancement*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
W80 JTA-1 Replacement Support	C/FFP	Boeing:Seattle, WA	2.202	0.070	Feb 2011	-		-		-	0.000	2.272	0.000
		Subtotal	2.202	0.070		-		-		-	0.000	2.272	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ALCM Aging and Surveillance Program	C/FFP	ESpectrum:San Antonio, TX	2.509	0.261	Jun 2011	0.803	Dec 2011	-		0.803	Continuing	Continuing	0.000
		Subtotal	2.509	0.261		0.803		-		0.803			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LRSO (Cruise Missile) Materiel Solution Analysis Phase activities	MIPR	Multiple:Multiple,	3.219	3.300	Jan 2011	-		-		-	Continuing	Continuing	TBD
		Subtotal	3.219	3.300		-		-		-			

Remarks

LRSO MSA effort moves to PE 0101125F in FY12.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101122F: *AIR LAUNCHED CRUISE MISSILE*	PROJECT 674797: *Flight Testing & Navigation Enhancement*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7.930	3.631		0.803		-		0.803			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101122F: *AIR LAUNCHED CRUISE MISSILE*	PROJECT 674797: *Flight Testing & Navigation Enhancement*

0101122F Schedule

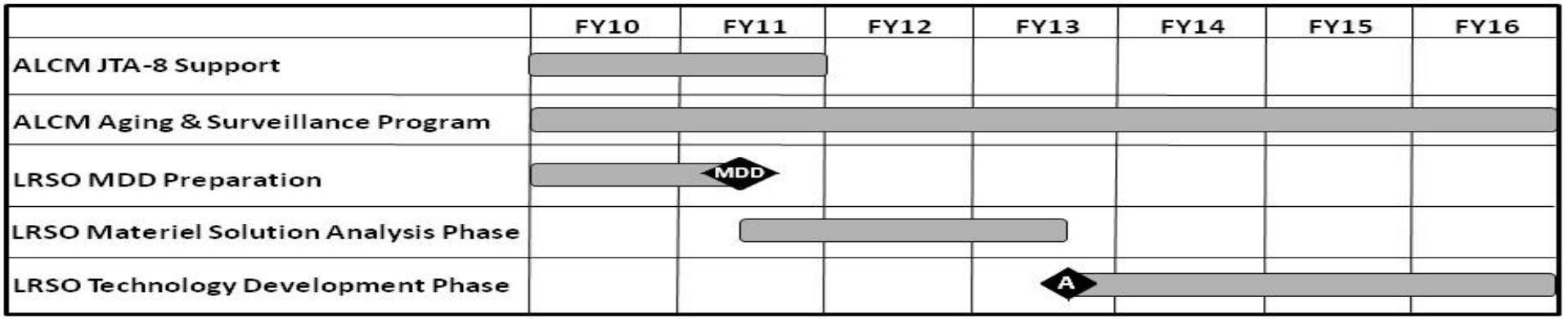

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101122F: *AIR LAUNCHED CRUISE MISSILE*	**PROJECT** 674797: *Flight Testing & Navigation Enhancement*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ALCM JTA-8 Support	1	2010	4	2011
ALCM Aging & Surveillance Program Development	1	2010	4	2015
LRSO MDD	3	2011	3	2011
LRSO MSA Phase	3	2011	4	2013
LRSO Technology Development Phase	4	2013	4	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0101126F: *B-1B SQUADRONS*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	178.278	33.234	33.011	-	33.011	3.834	0.089	0.084	0.086	Continuing	Continuing
675344: *B-1B Modernization*	178.278	33.234	33.011	-	33.011	3.834	0.089	0.084	0.086	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program provides RDT&E AF funding for the B-1B modernization program. The modernization program addresses potential aircraft grounding issues and provides new and improved capabilities to the B-1B weapon system that require significant hardware and software development and testing. In addition, the modernization program addresses reliability and Diminishing Manufacturing Sources (DMS) deficiencies to prevent future grounding of B-1B aircraft. B-1B grounding items are addressed in the following efforts: Central Integrated Test System (CITS) upgrade, Radar Reliability and Maintainability Improvement Program (RMIP), Vertical Situational Display Upgrade (VSDU), and Inertial Navigation System (INS) upgrade. B-1B improvement efforts include, but are not limited to, the development of the Fully Integrated Data Link (FIDL), ALQ-161A Preprocessor Avionics Control Unit (PACU) software re-host/development, and Active Electronically Scanned Array (AESA) Radar study. FIDL integrates Link-16 and Beyond Line of Sight (BLOS) data links along with upgraded displays for improved connectivity to command and control authorities and for enhancements to targeting and weapons management. Upgrades to the B-1B training systems are included in the modernization program to keep the training systems current with the aircraft configuration. In addition, program funds cover engineering/planning studies, related engineering efforts, and initiatives for future weapon system enhancements, including efforts to improve weapon system operational capabilities, safety, supportability, maintainability, reliability, and total ownership cost. All B-1B development programs support planned requirements for unique identification in their production phases. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	178.278	33.234	6.273	-	6.273
Current President's Budget	178.278	33.234	33.011	-	33.011
Total Adjustments	-	-	26.738	-	26.738
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	26.738	-	26.738

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: 675344: *B-1B Modernization*		

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101126F: *B-1B SQUADRONS*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Congressional Add: *B1-B Modernization*	1.992	-
Congressional Add Subtotals for Project: 675344	1.992	-
Congressional Add Totals for all Projects	1.992	-

Change Summary Explanation

FY 2012: Program increased by $26.738M to support continued development of Vertical Situational Display Unit (VSDU) and other B-1B Modernization development efforts.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101126F: *B-1B SQUADRONS*	PROJECT 675344: *B-1B Modernization*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675344: *B-1B Modernization*	178.278	33.234	33.011	-	33.011	3.834	0.089	0.084	0.086	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This program provides RDT&E AF funding for the B-1B modernization program. The modernization program addresses potential aircraft grounding issues and provides new and improved capabilities to the B-1B weapon system that require significant hardware and software development and testing. In addition, the modernization program addresses reliability and Diminishing Manufacturing Sources (DMS) deficiencies to prevent future grounding of B-1B aircraft. B-1B grounding items are addressed in the following efforts: Central Integrated Test System (CITS) upgrade, Radar Reliability and Maintainability Improvement Program (RMIP), Vertical Situational Display Upgrade (VSDU), and Inertial Navigation System (INS) upgrade. B-1B improvement efforts include, but are not limited to, the development of the Fully Integrated Data Link (FIDL), ALQ-161A Preprocessor Avionics Control Unit (PACU) software re-host/development, and Active Electronically Scanned Array (AESA) Radar study. FIDL integrates Link-16 and Beyond Line of Sight (BLOS) data links along with upgraded displays for improved connectivity to command and control authorities and for enhancements to targeting and weapons management. Upgrades to the B-1B training systems are included in the modernization program to keep the training systems current with the aircraft configuration. In addition, program funds cover engineering/planning studies, related engineering efforts, and initiatives for future weapon system enhancements, including efforts to improve weapon system operational capabilities, safety, supportability, maintainability, reliability, and total ownership cost. All B-1B development programs support planned requirements for unique identification in their production phases. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: B-1B Modernization	176.286	33.234	33.011	-	33.011
Description: Continued B-1B Modernization ***FY 2010 Accomplishments:*** CITS received Milestone (MS) C approval in June 2010 following completion of the Aircraft Functional Test. Radar RMIP received MS C approval in January 2010 based on hardware qualification (A Low Rate Initial Production contract was awarded in September 2010). RMIP Flight Testing, which started in April, has continued through the year. PACU ALQ-161 software migration progressed during FY10 and will continue into FY11. INS completed ground test in Aug 2010. The flight test aircraft has been modified with the INS and Gyro Stabilization System Replacement (GSSR) hardware. FIDL qualified hardware, completed Phase I flight testing, and entered Phase II flight testing. FIDL received MS C approval in September 2010. Installation of VSDU hardware was accomplished on the flight test aircraft. Simulator/Trainers continued integration and support					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101126F: *B-1B SQUADRONS*	PROJECT 675344: *B-1B Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
efforts. General development related support for the flight test effort continued. Pre-contract award activities have been completed for the Congressional Add directing an AESA Radar study. ***FY 2011 Plans:*** PACU software migration will conclude in FY11. Radar RMIP will conclude flight test, Functional Configuration Audit/Physical Configuration Audit (FCA/PCA) and development effort in FY11. INS received Milestone C approval in Oct 2010. INS will conclude its flight test program, FCA/PCA and development effort. FIDL will complete Phase II of flight test and FCA/PCA and conclude development effort in FY11. VSDU will enter flight test. Simulator/Trainer development/support will continue. General development related support for the flight test effort will continue. ***FY 2012 Base Plans:*** VSDU will complete flight test and address any software or hardware issues that resulted from flight testing. VSDU will also complete FCA and modify test aircraft 0068. Simulator and training upgrades will require both software and hardware development and testing to support fielding of VSDU, CITS, and FIDL efforts. General development related to support of follow-on flight testing of major efforts. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	176.286	33.234	33.011	-	33.011

	FY 2010	FY 2011
Congressional Add: B1-B Modernization	1.992	-
FY 2010 Accomplishments: Execute a trade study to establish physical & functional interface requirements for potential B-1B Active Electronically Scanned Array (AESA) integration. ***FY 2011 Plans:*** Not Applicable.		
Congressional Adds Subtotals	1.992	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0101126F: *Aircraft Procurement BP11, Mods*	98.424	199.694	197.706	0.000	197.706	172.709	118.892	79.319	107.161	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101126F: *B-1B SQUADRONS*	PROJECT 675344: *B-1B Modernization*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0809731F: *Aircraft Procurement BP11, Mods*	0.392	0.396	0.301	0.000	0.301	0.351	0.417	0.425	0.433	Continuing	Continuing
• PE 0207446F: *Aircraft Procurement BP11, Mods*	0.000	0.000	0.000	0.000	0.000	0.000	1.317	1.317	1.107	Continuing	Continuing
• PE 0101126F (3): *B-1B, Aircraft Procurement BP16, Initial Spares*	5.753	12.533	12.270	0.000	12.270	18.145	23.103	16.943	13.168	Continuing	Continuing
• PE 0101126F (4): *B-1B, Aircraft Procurement BP12, Common Support Equipment*	2.663	10.272	0.787	0.000	0.787	7.729	3.226	2.017	2.026	Continuing	Continuing
• PE 0101126F (5): *B-1B, Aircraft Procurement BP13, Post Production Charges*	3.917	6.791	4.743	0.000	4.743	0.965	0.422	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

(U) Key elements of the overall B-1B Modernization acquisition strategy include: use of sole source contract with a prime/integrating contractor (Boeing); installed performance responsibility; use of cost plus incentive fee (CPIF) development contracts; and combining developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime and differences in fielded configurations.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101126F: *B-1B SQUADRONS*	PROJECT 675344: *B-1B Modernization*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Central Integrated Test System (CITS)	SS/CPIF	Boeing:Long Beach, CA	5.201	0.231	Nov 2010	-		-		-	0.000	5.432	0.000
Vertical Situation Display Upgrade (VSDU)	SS/CPFF	Boeing:Long Beach, CA	39.120	7.456	Nov 2010	22.911	Oct 2011	-		22.911	0.000	69.487	0.000
Radar Reliability and Maintainability Improvement Program (RMIP)	SS/CPIF	Boeing:Long Beach, CA	32.225	6.532	Nov 2010	-		-		-	0.000	38.757	0.000
Inertial Navigation System (INS)	SS/CPIF	Boeing:Long Beach, CA	37.218	3.910	Dec 2010	-		-		-	0.000	41.128	0.000
Fully Integrated Data Link (FIDL)	SS/CPIF	Boeing:Long Beach, CA	50.210	11.034	Oct 2010	-		-		-	0.000	61.244	0.000
ALQ-161A Preprocessor Avionics Control Unit (PACU)	SS/CPFF	Robins AFB:, GA	5.204	1.015	Oct 2010	-		-		-	0.000	6.219	0.000
Active Electronically Scanned Array (AESA) Radar	SS/TBD	Boeing:Long Beach, CA	1.992	-		-		-		-	0.000	1.992	0.000
		Subtotal	171.170	30.178		22.911		-		22.911	0.000	224.259	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies & Analyses	Various	Various:Various,	-	-		0.600	Apr 2012	-		0.600	0.170	0.770	0.000
Simulator/Trainer	Various	Various:Various,	0.479	0.300	Oct 2010	6.500	Oct 2011	-		6.500	0.000	7.279	0.000
		Subtotal	0.479	0.300		7.100		-		7.100	0.170	8.049	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AFFTC	PO	Not specified.:,	1.459	1.000	Jan 2011	1.500	Oct 2011	-		1.500	0.089	4.048	0.000
		Subtotal	1.459	1.000		1.500		-		1.500	0.089	4.048	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101126F: *B-1B SQUADRONS*	PROJECT 675344: *B-1B Modernization*

Management Services ($ in Millions)

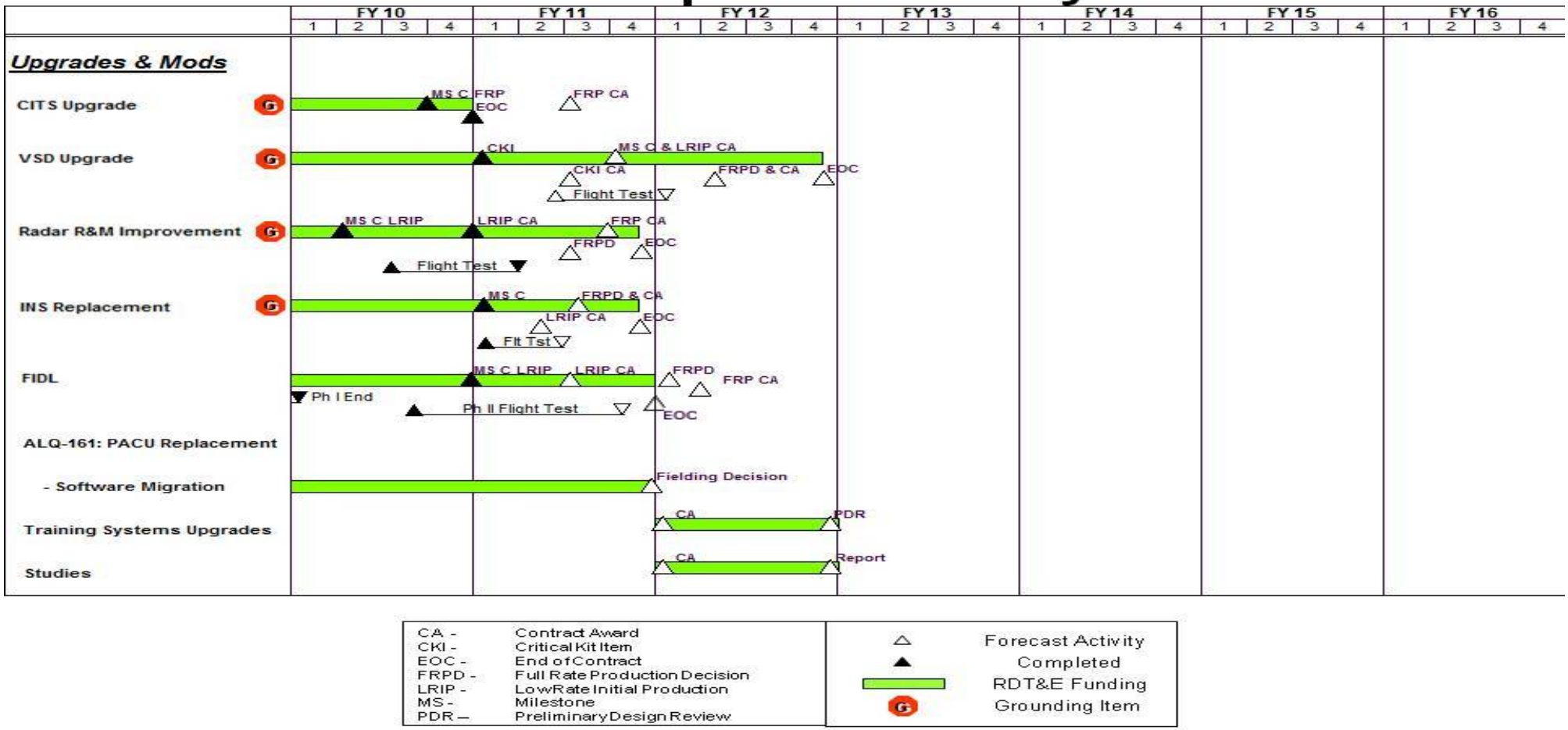
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
A&AS	Various	Various:Various,	5.170	1.756	Nov 2010	1.500	Oct 2011	-		1.500	0.000	8.426	0.000
		Subtotal	5.170	1.756		1.500		-		1.500	0.000	8.426	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	178.278	33.234		33.011		-		33.011	0.259	244.782	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101126F: *B-1B SQUADRONS*	PROJECT 675344: *B-1B Modernization*

Development Activity



CA -	Contract Award
CKI -	Critical Kit Item
EOC -	End of Contract
FRPD -	Full Rate Production Decision
LRIP -	Low Rate Initial Production
MS -	Milestone
PDR –	Preliminary Design Review

△	Forecast Activity
▲	Completed
▬	RDT&E Funding
G	Grounding Item

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101126F: *B-1B SQUADRONS*	**PROJECT** 675344: *B-1B Modernization*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Central Integrated Test System (CITS) Upgrade Milestone (MS) C	3	2010	3	2010
CITS Contract Award (CA)	2	2011	2	2011
Vertical Situation Display Upgrade (VSDU) MS C	4	2011	4	2011
VSDU Development Testing (DT)	2	2011	1	2012
VSDU Full Rate Production (FRP) Decision Review (DR)	2	2012	2	2012
VSDU Critical Kit Item CA	2	2011	2	2011
Radar Reliability & Maintainability Improvement Program (RMIP) MS C	2	2010	2	2010
RMIP DT	3	2010	2	2011
RMIP FRP DR	3	2011	3	2011
Inertial Navigation System (INS) MS C	1	2011	1	2011
INS FRP DR	2	2011	2	2011
INS DT	1	2011	2	2011
INS CA	2	2011	2	2011
Fully Integrated Data Link (FIDL) MS C	4	2010	4	2010
FIDL FRP DR	1	2012	1	2012
FIDL DT	2	2011	4	2011
FIDL Low Rate Initial Production (LRIP) CA	2	2011	2	2011
ALQ-161 Preprocessor Avionics Control Unit (PACU) Sotware Migration Fielding Decision	4	2011	4	2011
Training Systems Upgrades Preliminary Design Review CA	1	2012	1	2012
Training Systems Upgrades Preliminary Design Review PDR	4	2012	4	2012
Studies CA	1	2012	1	2012
Studies Report	4	2012	4	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	351.549	260.466	340.819	-	340.819	432.155	422.958	361.634	271.430	Continuing	Continuing
675345: *B-2 Modernization*	351.549	260.466	5.135	-	5.135	2.007	1.945	1.962	1.988	Continuing	Continuing
676021: *BASELINE SUPPORT*	-	-	9.523	-	9.523	7.860	14.336	15.916	13.810	Continuing	Continuing
676022: *EHF SATCOM and Computer*	-	-	285.034	-	285.034	244.410	225.389	244.846	205.843	Continuing	Continuing
676023: *Defensive Management System*	-	-	41.127	-	41.127	177.878	181.288	98.910	49.789	Continuing	Continuing

Note

In FY10, Project Number 653843, B-2 Advanced Technology Bomber efforts transferred from PE 0604240F, B-2 Advanced Technology Bomber, to PE 0101127F, B-2 Squadrons, transferring funds/efforts from major force program (MFP) 6 to MFP 1.

Funding prior to FY10-FY12, and the estimate to complete after FY12 for the two B-2 ACAT 1 programs as follows:

(1) The ACAT 1C B-2 Extremely High Frequency Satellite Communication (EHF SATCOM) and Computers Increment 1: Prior years funding: $288.5M; estimate to complete: $6.4M

(2) The ACAT 1C B-2 Radar Modernization Program (RMP): Prior years funding: $646.6M; estimate to complete: Not applicable. EMD is complete, effort is in full-rate production, no remaining RDT&E efforts after FY10.

In FY12, three new project numbers were established:
676021 Baseline Support
676022 EHF SATCOM and Computer
676023 Defensive Management System

Funding for the three new project numbers was transferred from the existing 675345 project number. Project number 675345 will continue to be used for B-2 Modernization efforts that are not allocated to the three new project numbers.

The program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $3.515M in FY12.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101127F: *B-2 SQUADRONS*

The program funding includes reductions for acquisition excellence efficiencies for project 676023 in FY15 and FY16 that are not intended to impact program content. Reductions for efficiencies may be spread to other Air Force programs at a later date. Amounts of the reductions are: $3.7M/FY15 and $54.2M/FY16.

A. Mission Description and Budget Item Justification

The B-2A Spirit is the world's most advanced long-range strike asset. The unique combination of range, precision, payload, and ability to operate in anti-access environments allow the B-2 to identify, locate, target, and destroy the highest value enemy targets. The B-2 can, with necessary upgrades, accomplish its mission regardless of location, return to base safely, and permit freedom of movement for follow-on forces, including other long range strike platforms.

The array of planned RDT&E projects are necessary to both preserve this strategic advantage as well as increase the flexibility, lethality, and survivability of this national asset tasked across a broad spectrum, from tactical to national objectives. Upgrades include, but are not limited to, armament systems, structures, engine improvements, low obervable modifications, trainers, support equipment, Radar Modernization Program (RMP), Link-16 Center Instrument Display (CID)/In-Flight Replanner (IFR), Ultra High Frequency (UHF) Satellite Communication (SATCOM), Mode 5/S Identification Friend or Foe (IFF)-Automatic Dependence Surveillance-Broadcast, Adaptable Communications Suite (ACS), Extremely High Frequency (EHF) SATCOM and Computers, Defensive Management System (DMS), Electro-magnetic pulse (EMP) Hardening Testing, and advanced, low detection data links upgrades.

Specific efforts will be managed under one of four projects:
676021 Baseline Support
676022 EHF SATCOM and Computer
676023 Defensive Management System
675345 B-2 Modernization

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	407.189	260.466	295.333	-	295.333
Current President's Budget	351.549	260.466	340.819	-	340.819
Total Adjustments	-55.640	-	45.486	-	45.486
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-2.039	-			
• SBIR/STTR Transfer	-51.902	-			
• Other Adjustments	-1.699	-	45.486	-	45.486

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101127F: *B-2 SQUADRONS*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: 675345: *B-2 Modernization*		
Congressional Add: *B-2 Advanced Tactical Data Link (ATDL)*	9.560	-
Congressional Add: *B-2 Strike Control System*	12.124	-
Congressional Add Subtotals for Project: 675345	21.684	-
Congressional Add Totals for all Projects	21.684	-

Change Summary Explanation

FY12 changes increased funding for EHF SATCOM and Computer Increments 1 and 2, and decreased funding for Defensive Management System and Mode 5/S.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 675345: *B-2 Modernization*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675345: *B-2 Modernization*	351.549	260.466	5.135	-	5.135	2.007	1.945	1.962	1.988	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY10, Project Number 653843, B-2 Advanced Technology Bomber efforts transferred from PE 0604240F, B-2 Advanced Technology Bomber, to PE 0101127F, B-2 Squadrons, transferring funds/efforts from MFP 6 to MFP 1.

In FY12:
funding for Baseline Support transferred from project 675345 to project 676021.
funding for Extremely High Frequency (EHF) SATCOM and Computers transferred from project 675345 to project 676022.
funding for DMS upgrade transferred from project 675345 to project 676023.

A. Mission Description and Budget Item Justification

Totals include funding for PRCP Program Number (PNO) 224, B-2 EHF Increment 1; and PRCP Program Number (PNO) 376, B-2 Radar Modernization Program (RMP);

The B-2A Spirit is the world's most advanced long-range strike asset. The unique combination of range, precision, payload, and ability to operate in anti-access environments allow the B-2 to identify, locate, target, and destroy the highest value enemy targets. The B-2 can, with necessary upgrades, accomplish its mission regardless of location, return to base safely, and permit freedom of movement for follow-on forces, including other long range strike platforms.

The array of planned RDT&E projects are necessary to both preserve this strategic advantage as well as increase the flexibility, lethality, and survivability of this national asset tasked across a broad spectrum, from tactical to national objectives. Avionics upgrades include, but are not limited to, Radar Modernization Program (RMP), Link-16 Center Instrument Display (CID)/In-Flight Replanner (IFR), Mode 5/S Identification Friend or Foe (IFF)-Automatic Dependence Surveillance-Broadcast, Adaptable Communications Suite (ACS), Extremely High Frequency (EHF) SATCOM and Computers, Defensive Management System Modernization (DMS-M), Electro-magnetic pulse (EMP) Hardening Testing, and advanced, low detection data links upgrades.

RMP changes the operating frequency of the radar to enable the B-2 to operate as a primary user worldwide.

Link-16 CID/IFR upgrade allows the B-2 access to theater tactical data links, improving on-board situational awareness while greatly enhancing the ability of the theater commanders to coordinate the B-2 with other assets.

ACS provides UHF SATCOM data for beyond line of sight situational awareness and airborne mission data transfer.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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Mode 5 IFF provides enhanced combat identification of friend or foe functions for military Air Traffic Management; Mode S IFF provides enhanced surveillance functions with commercial Air Traffic Management to allow operations in controlled air space; Automatic Dependence Surveillance-Broadcast provides aircraft position and navigation information to Air Traffic Control and nearby aircraft.

EMP hardening requirements will test individual components and the entire B-2 fleet at higher EMP levels for Nuclear Command and Control Survivability.

Integrated Strike Warfare (ISW) Airborne Network project will model and simulate combat effects and performance constraints in an environment that can demonstrate, integrate, generate and validate four generic wave form models which will be used on the B-2 platform. Additionally, this project will establish a viable end-to-end distributed modeling and simulation network.

Advanced Tactical Data Link (ATDL) will identify B-2 CONOPS requirements and integration issues which will permit B-2 to communicate with other stealth platforms in an anti-access environment to enhance situational awareness and permit time-critical targeting and engagement.

Armament upgrades include, but are not limited to, integration of new and/or advanced weapons on the B-2 to destroy a wider array of target sets, to include moving target sets and Hardened, Deeply Buried Targets (HDBT), as well as destroy more targets per sortie. Integration of the 30K lb class Massive Ordnance Penetrator (MOP) will provide the nation with the ability to hold additional HDBT targets at risk that are currently unachievable with 5K lb class penetrator munitions. The B-2 is the only anti-access penetrating platform capable of carrying the MOP and meets Urgent Operational Need (UON) requirements. The MOP project will design, develop, integrate, and test hardware, software, and support equipment required for carriage, jettison, and release of two MOP weapons from the B-2. The initial MOP Quick Reaction Capability effort will be expanded to include a fully developed Launch Acceptability Region, single Smart Bomb Rack Controller (SBRC) per bay, dual fuze control, and mixed carriage capability with Smart Bomb Rack Assemblies (SBRA). Further expansion will include the addition of the Global Positioning System (GPS) signal into the B-2 weapons bays to allow Monitor and Control Equipment (MACE) weapons, SBRA weapons, and RLA weapons to acquire and track GPS satellites prior to weapons release, maintaining unjammed delivery accuracy in a jamming environment.

The Moving Target Kill (MTK) effort will leverage a high precision munition such as the Small Diameter Bomb II (SDB II) as the mobile target kill munition forming the foundation to exploit the modularity and improved precision algorithms of Universal Armament Interface (UAI) as well as a display infrastructure that can support the integration of this future weapon. Planned upgrades also include integration of upgrades to currently fielded or inventory weapons and weapons development, such as, but not limited to, B61 Life Extention Program, GBU-28 E/B Selective Availability Anti-Spoofing Module(SAASM) with impact angle control, GBU-28 D/B SAASM with impact angle control, Hard Target Void Sensing Fuse, extended range Joint Air-to-Surface Standoff Missile, and JDAM-5000.

Basic armament improvements include, but are not limited to, stores management hardware and software modernization and improvements to enable simultaneous carriage of the Rotary Launcher Assembly (RLA) and the SBRA, integration of Universal Armament Interface, integration of System 2 Nuclear Interface, and integration of new and improved weapon capabilities thus affording maximum strike flexibility. The B-2 Weapons System Tester and its associated Test Program Sets (TPS) include, but are not limited to, the Common Organizational Level Tester (COLT), MUSTANG, and B-2 Armament Tester, will be continually upgraded for increased reliability and performance to support current and new B-2 weapon suspension and release systems.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 675345: *B-2 Modernization*

Structures improvements include, but are not limited to, Aft Deck upgrade which addresses an interim and long term solution to persistent cracking of aft deck surfaces while preserving the key stealth characteristics that are vital to the survivability of the B-2; windshield redesign provides improved components and windshield manufacturing processes to remedy windshield cracking and electrical conductivity limitations; Proximity Sensor Logic Unit replacement counters obsolescence issues with electronic components, improving safety of maintainers working around various aircraft bay doors as well as improving reliability of on-board indicators.

Engine improvements include, but are not limited to, the F118 engine service life extension program and the extended mission oil tank upgrade; Stage 1 and 3 engine fan blade improvements will reduce engine changes, increasing aircraft availability. Engine upgrades are necessary to maintain commonality with the F110 engine core.

Low Observable Signature and Supportability Modification (LOSSM) projects decrease low observable (LO) maintenance, increase aircraft availability, and maintain and improve the combat-ready LO signature for the B-2 fleet. LOSSM funds projects that improve LO materials, LO structures, and diagnostic tools necessary to evaluate LO materials and systems in the B-2 fleet. LOSSM projects include, but are not limited to, improvements to door edge treatments, tile protection system, Magnetic Radar Absorbing Material picture framing and other LO materials development, hot structures, tailpipe material improvements, nozzle bay doors, windshield low observable treatments, advanced topcoat system, radar frequency diagnostics and other LO diagnostic tools development such as, but not limited to, improvements of the Signature Diagnostic System database, Tier One Material Inspection System, and other low observable special test equipment and information systems.

B-2 Training Systems keep pace with aircraft system updates and counters obsolescence issues. Projects include, but not limited to, upgrades of threat environment, radar display emulation, aero fidelity of key pilot procedures, improvements to courseware, upgrades of display systems and subsystems, and simulation and computational processors. Other upgrades include, but not limited to, conventional and nuclear guided weapons delivery training, expanded crypto keyfill capability in simulators, upgraded capability to train weapons as powered up upon completion of initial conditions, as well as upgrades to the electronic combat environment threat database tools to include threat laydown, threat parametrics, and Integrated Air Defense System. Upgrades will also be provided to the Defensive Management System simulation (DMS), DMS alternative/emergency procedures courseware, and Mission Generation System. Enhancements will be provided to the B-2 family of trainers to include the Weapon System Trainers, Mission Trainer, Cockpit Procedures Trainers, Computerized Maintenance Training System, Weapon System Training Aids, Weapons Load Trainer, Crew Escape System Maintenance Trainer, Flight Control System Trainer, instructor-operator station, and Training System Support Center.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: B-2 Baseline Support	26.608	15.134	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 675345: *B-2 Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: B-2 Baseline Support to include developmental flight test aircraft modification and base of operations; Mission Planning, Trainer core support, long range planning, studies, program integration activities, acquisition planning, and other government costs. ***FY 2010 Accomplishments:*** Continue B-2 Baseline Support to include developmental flight test aircraft modification and base of operations; Mission Planning, Trainer core support, long range planning, studies, program integration activities, acquisition planning, and other government costs. ***FY 2011 Plans:*** Continue B-2 Baseline Support to include developmental flight test aircraft modification and base of operations; Mission Planning, Trainer core support, long range planning, studies, program integration activities, acquisition planning, and other government costs. ***FY 2012 Base Plans:*** In FY12, funding for Baseline transferred from project 675345 to project 676021. ***FY 2012 OCO Plans:***					
Title: B-2 EHF SATCOM and Computers Increment 1 System Development ***Description:*** Development of EHF SATCOM and Computers Increment 1 System Development and Demonstration (SDD) and design and fabrication of new and modified components for two test aircraft and two Force Development Evaluation (FDE) aircraft. ***FY 2010 Accomplishments:*** Continue EHF SATCOM and Computers Increment 1 SDD, ground test, and start of flight test. ***FY 2011 Plans:*** Continue EHF SATCOM and Computers Increment 1 SDD, continue flight test, leading to a successful milestone C decision in FY12. ***FY 2012 Base Plans:*** In FY12, funding for Extremely High Frequency (EHF) SATCOM and Computers transferred from project 675345 to project 676022. ***FY 2012 OCO Plans:***	59.777	76.926	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 675345: *B-2 Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: B-2 EHF SATCOM and Computers Increment 2 System Development ***Description:*** Development of EHF SATCOM and Computer Increment 2 component advanced design, risk reduction activities to meet Milestone B in FY13. ***FY 2010 Accomplishments:*** Continue EHF SATCOM and Computer Increment 2 component advanced design, risk reduction activities, and antenna system requirements review (SRR) to meet Milestone B in FY13. ***FY 2011 Plans:*** Continue EHF SATCOM and Computer Increment 2 component advanced design, risk reduction activities, and antenna system functional review (SFR) to meet Milestone B in FY13. ***FY 2012 Base Plans:*** In FY12, funding for Extremely High Frequency (EHF) SATCOM and Computers transferred from project 675345 to project 676022. ***FY 2012 OCO Plans:***	117.727	96.637	-	-	-
Title: B-2 Defensive Management System (DMS) Moderization ***Description:*** Development of DMS Moderization Program to improve aircrew situational awareness through replacement of passive antennas, receiver/processors, and display processors, address critical system shortfalls, and improve DMS component repair issues. ***FY 2010 Accomplishments:*** Continue development of DMS core capability, complete analysis of alternatives (AoA), and complete system requirement review (SRR). ***FY 2011 Plans:*** Continue development of DMS core capability, complete system functional review (SFR), achieve a successful Milestone A decison, and begin technology development phase. ***FY 2012 Base Plans:*** In FY12, funding for DMS upgrade transferred from project 675345 to project 676023. ***FY 2012 OCO Plans:***	93.662	52.575	-	-	-
Title: B-2 Modernization	32.091	19.194	5.135	-	5.135

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 675345: *B-2 Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Development of Low Observable improvements, Proximity Sensor Logic Unit (PSLU), Massive Ordnance Penetrator (MOP),Integrated Windshield Solution, Trainer Upgrades, Electro Magnetic Pulse (EMP) Testing, Common Organizational Level Tester (COLT), Adaptable Communication Suite (ACS), Guided Bomb Unit (GBU) -28, Aft Deck, Mode S/5, and other airframe and avionics improvements. ***FY 2010 Accomplishments:*** Continue development of Low Observable improvements, Proximity Sensor Logic Unit (PSLU), Massive Ordnance Penetrator (MOP), Integrated Strike Warfare (ISW), Advanced Tactical Data Link (ATDL), Trainer Upgrades, EMP Testing, COLT, ACS, GBU-28, Mode S/5, and other airframe, avionics, and weapons improvements. Complete Integrated Windshield Solution. ***FY 2011 Plans:*** Continue development of on-going Low Observable improvements, ISW, ATDL, Trainer Upgrades, COLT, PSLU, GBU-28, and other airframe, avionics, and weapons improvements. Complete development efforts for ACS, and complete integration of the MOP QRC weapon on the B-2 platform and the EMP test. ***FY 2012 Base Plans:*** Continue development of on-going Low Observable improvements, ISW, ATDL, Trainer Upgrades, EMP Testing, GBU-28, and other airframe, avionics, and weapons improvements. Complete PSLU and COLT. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	329.865	260.466	5.135	-	5.135

	FY 2010	FY 2011
Congressional Add: B-2 Advanced Tactical Data Link (ATDL)	9.560	-
FY 2010 Accomplishments: B-2 Strike Control System upgrade establishes the foundation for all future data fusion and pilot vehicle interface (PVI) upgrades on B-2. Funds applied to the development B-2 DMS. ***FY 2011 Plans:***		
Congressional Add: B-2 Strike Control System	12.124	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 675345: *B-2 Modernization*

	FY 2010	FY 2011
FY 2010 Accomplishments: Completed development of Radar Modernization Program.		
FY 2011 Plans:		
Congressional Adds Subtotals	21.684	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0101127F: *B-2 Squadrons, APAF, Modifications/BA05/B-2A*	241.216	57.415	6.651	0.000	6.651	6.221	9.947	12.401	12.930	Continuing	Continuing
• PE 0809731F: *Training Support to Units, APAF, Modifications/ BA05/B-2A*	5.875	5.956	5.163	0.000	5.163	5.271	6.261	6.385	6.500	Continuing	Continuing
• PE 0207446F: *Bomber Tactical Data Link, APAF Modifications/ BA05/B-2A*	0.000	0.000	0.000	0.000	0.000	0.000	0.479	0.439	0.399	Continuing	Continuing
• PE 0101127F (3): *B-2 Squadrons, APAF, Post Prod Support/BA07/B-2A/ICS*	24.405	20.755	39.239	0.000	39.239	39.416	39.513	39.240	31.969	Continuing	Continuing
• PE 0101127F (4): *B-2 Squadrons, APAF, Post Prod Support/BA07/B-2A*	19.739	5.462	10.080	0.000	10.080	7.683	7.584	5.988	12.275	Continuing	Continuing
• PE 0101127F (5): *B-2 Squadrons, APAF, A/C Initial Spares/BA06/B-2A*	0.000	15.099	11.477	0.000	11.477	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0101127F (6): *B-2 Squadrons, APAF, Depot Activation/BA07/B-2A*	18.100	166.067	11.891	0.000	11.891	10.262	9.803	10.324	10.565	Continuing	Continuing
• PE 0207439F: *B-2 Squadrons, APAF, Depot Activation/BA07/B-2A*	0.000	10.230	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
	0.000	0.000	0.490	0.000	0.490	0.599	0.649	0.499	0.499	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 675345: *B-2 Modernization*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0101127F (8): *B-2 Squadrons, OPAF/BA 03/B-2A*											

D. Acquisition Strategy

Key elements of the overall acquisition strategy include: use of sole source contract with a prime/integrating contractor (Northrop Grumman); use of cost plus award fee/ incentive fee (CPAF/IF) development contracts; and the combination of developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime, and differences in fielded configurations.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 675345: *B-2 Modernization*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Vehicle	Various	Various:Various,	318.768	239.462	Oct 2010	4.731	Oct 2011	-		4.731	Continuing	Continuing	0.000
Aircrew Training	Various	Various:Various,	3.108	2.820	Jan 2011	0.239	Jan 2012	-		0.239	Continuing	Continuing	0.000
Mission Planning	Various	Various:Various,	1.904	2.122	Jan 2011	-		-		-	Continuing	Continuing	0.000
		Subtotal	323.780	244.404		4.970		-		4.970			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Costs	Various	Various:Various,	22.967	9.973	Oct 2010	0.165	Oct 2011	-		0.165	Continuing	Continuing	0.000
		Subtotal	22.967	9.973		0.165		-		0.165			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test	PO	AFFTC:,	4.802	6.089	Oct 2010	-		-		-	Continuing	Continuing	0.000
		Subtotal	4.802	6.089		-		-		-			0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Cost Totals	351.549	260.466		5.135		-		5.135			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 675345: *B-2 Modernization*	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Award dates listed are the first incremental funding opportunity associated with each cost category.

In FY12, funding for Baseline transferred from project 675345 PE 0101127F, B-2 Squadrons to project 676021 PE 0101127F, B-2 Squadrons.

In FY12, funding for Extremely High Frequency (EHF) SATCOM and Computers transferred from project 675345 PE 0101127F, B-2 Squadrons to project 676022 PE 0101127F, B-2 Squadrons.

In FY12, funding for DMS-M upgrade transferred from project 675345 PE 0101127F, B-2 Squadrons to project 676023 PE 0101127F, B-2 Squadrons.

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 675345: *B-2 Modernization*

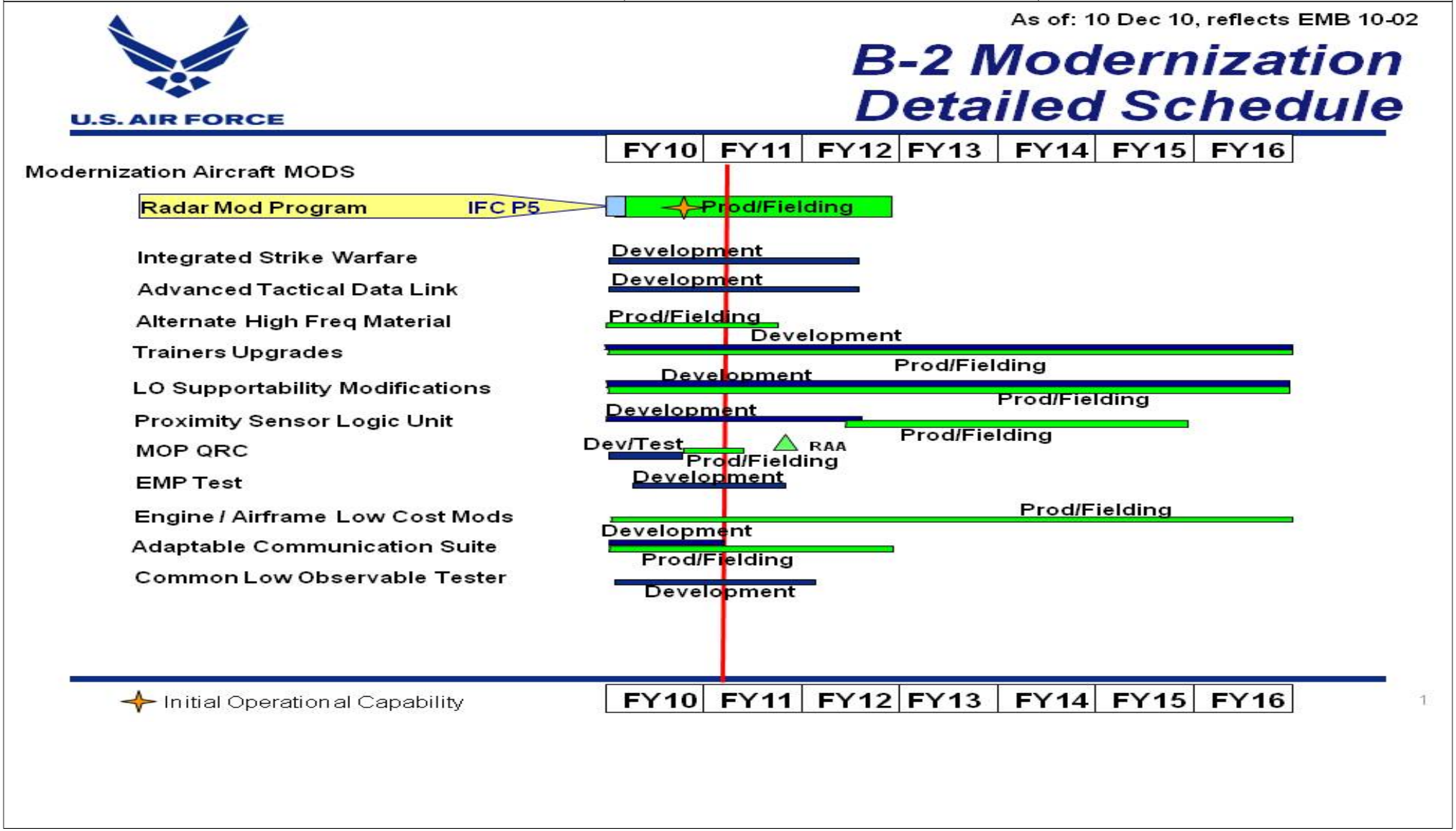


Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101127F: *B-2 SQUADRONS*	**PROJECT** 675345: *B-2 Modernization*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Radar Modernization Program SDD complete	2	2010	2	2010
Radar Modernization Program LRIP Installs complete	4	2010	2	2011
Radar Modernization Program FRP Installs complete	4	2011	2	2012
MOP QRC Flight Test	3	2010	2	2011
MOP QRC RAA	3	2011	3	2011
EMP Testing Contract Award	1	2011	1	2011
EMP Field Test	2	2011	3	2011
AHFM Last Install	1	2013	1	2013

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 676021: *BASELINE SUPPORT*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
676021: *BASELINE SUPPORT*	-	-	9.523	-	9.523	7.860	14.336	15.916	13.810	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY10, Project Number 653843, B-2 Advanced Technology Bomber efforts transferred from PE 0604240F, B-2 Advanced Technology Bomber, to PE 0101127F, B-2 Squadrons, transferring funds/efforts from MFP 6 to MFP 1.

In FY12, funding for Baseline Support transferred from project 675345 to the new project 676021.

A. Mission Description and Budget Item Justification

Baseline Support maintains the B-2 unique flight test aircraft and as well as obtains, modifies, and operates a flying test bed and developmental hardware/software and test equipment to support developmental systems integration and flight test, reducing the need for additional operational aircraft and accelerates deployment of advanced operational capabilities to the warfighter.

Baseline Support also ensures the Mission Planning system keeps pace with aircraft modifications and mission planning core system updates. Baseline Support also provides for other B-2 unique government costs, and includes acquisition planning activities for future capabilities such as, but not limited to, Stores Management Processor/Infrastructure upgrades, Global Positioning Satellite signal to B-2 Weapons Bays, Massive Ordnance Penetrator Enhancements, F118 Service Live Extension and F118 Extended Mission Oil Tank Upgrades, Advanced Tactical Data Link capabilities, mixed weapon load-outs, B61 Life Extension Program, Universal Armament Interface, System 2 Nuclear Interface, Global Positioning System/Selective Availability and Anti-Spoofing Module (SAASM)/M-Code receivers upgrades, Joint Precision Approach and Landing System upgrades, Radar Processor Modernization, and Automatic Dependent Surveillance – Broadcast, and integration of currently fielded or new weapons including, but not limited to, GBU E/B SAASM with impact angle control, GBU D/B SAASM with impact angle control, Hard Target Void Sending Fuze, extended range Joint Air-to-Surface Standoff Missile, and Joint Direct Attack Munition-5000.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Baseline Support Acquisition Planning ***Description:*** Baseline support provides for other B-2 unique government costs, and includes acquisition planning activities for future capabilities, Trainer cores support, long range planning, studies, and program integration activities.	-	-	0.901	-	0.901

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 676021: *BASELINE SUPPORT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: FY10 effort covered under Project Number 675345. ***FY 2011 Plans:*** FY11 effort covered under project 675345. ***FY 2012 Base Plans:*** Continue Baseline support activities including acquisition planning for future capabilities, Trainer cores support, long range planning, studies, and program integration activities. ***FY 2012 OCO Plans:***					
Title: Baseline Support Flight Test ***Description:*** Baseline support Flight Test maintains the B-2 unique flight test aircraft and as well as obtains, modifies, and operates a flying test bed and developmental hardware/software and test equipment to support developmental systems integration and flight test, reducing the need for additional operational aircraft and accelerates deployment of advanced operational capabilities to the warfighter. ***FY 2010 Accomplishments:*** FY10 effort covered under project 675345. ***FY 2011 Plans:*** FY11 effort covered under project 675345. ***FY 2012 Base Plans:*** Continue B-2 Flight Test activities, maintaining the B-2 unique flight test aircraft and as well as obtaining, modifying, and operatating a flying test bed and developmental hardware/software and test equipment to support developmental systems integration and flight test. ***FY 2012 OCO Plans:***	-	-	6.714	-	6.714
Title: Baseline Support Mission Planning ***Description:*** Baseline support mission planning ensures the mission planning system keeps pace with aircraft modifications and mission planning core system updates	-	-	1.908	-	1.908

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 676021: *BASELINE SUPPORT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: FY10 effort covered under project 675345. ***FY 2011 Plans:*** FY11 effort covered under project 675345. ***FY 2012 Base Plans:*** Continue B-2 Mission Planning activities keeping pace with aircraft modifications and mission planning core system updates ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	-	-	9.523	-	9.523

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Key elements of the overall acquisition strategy include: use of sole source contract with a prime/integrating contractor (Northrop Grumman); use of cost plus award fee/ incentive fee (CPAF/IF) development contracts; and the combination of developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime, and differences in fielded configurations.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 676021: *BASELINE SUPPORT*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Planning	Various	Various:Various,	-	-		1.596	Jan 2012	-		1.596	Continuing	Continuing	TBD
		Subtotal	-	-		1.596		-		1.596			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Costs	Various	Various:Various,	-	-		6.253	Oct 2011	-		6.253	Continuing	Continuing	TBD
		Subtotal	-	-		6.253		-		6.253			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test	PO	AFFTC:,	-	-		1.674	Oct 2011	-		1.674	Continuing	Continuing	TBD
		Subtotal	-	-		1.674		-		1.674			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		9.523		-		9.523			

Remarks

Award dates listed are the first incremental funding opportunity associated with each cost category.

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 676021: *BASELINE SUPPORT*

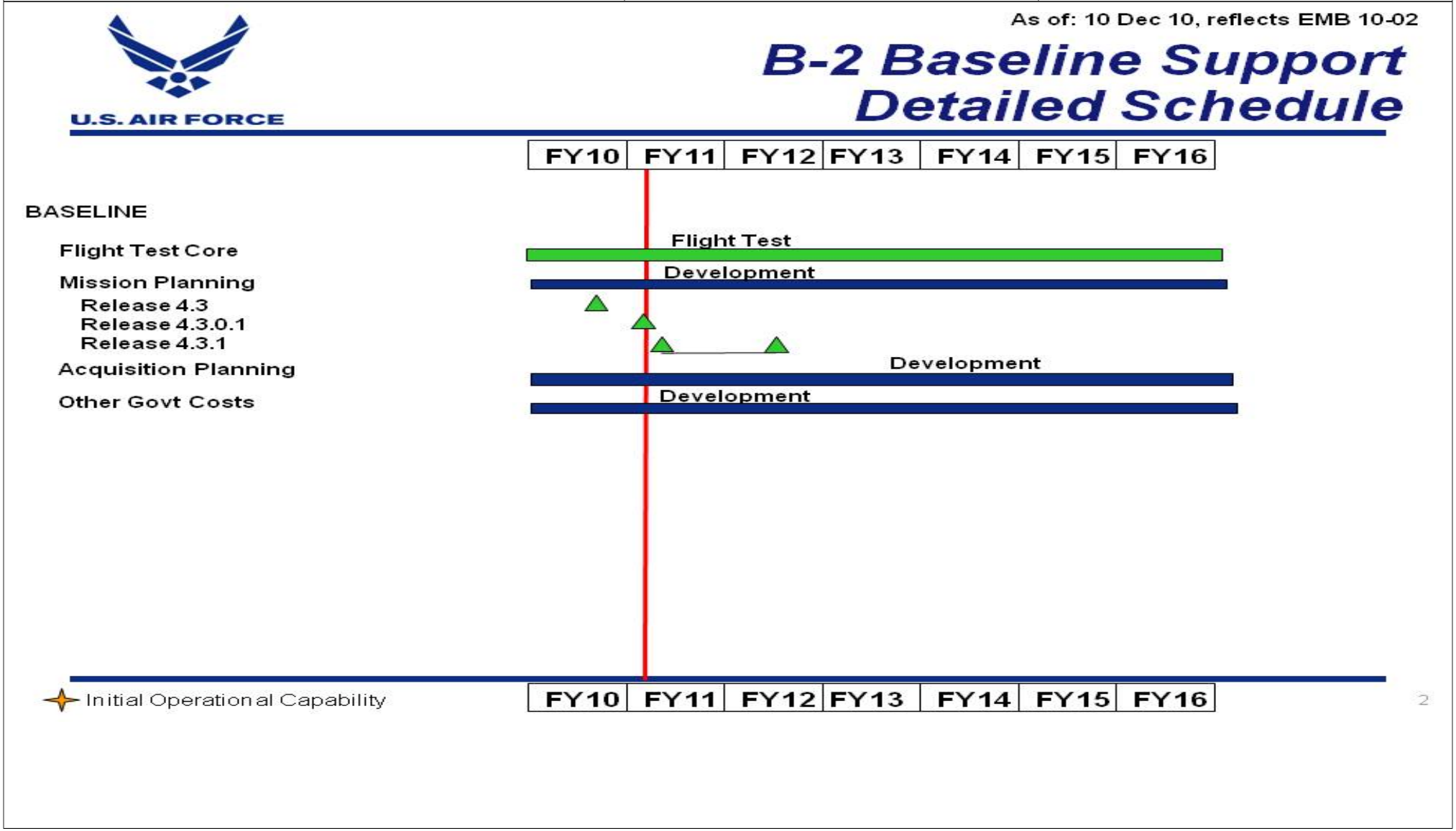


Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101127F: *B-2 SQUADRONS*	**PROJECT** 676021: *BASELINE SUPPORT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Mission Planning Release 4.3	3	2010	3	2010
Mission Planning Release 4.3.0.1	1	2011	1	2011
Mission Planning Release 4.3.1	2	2011	2	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 676022: *EHF SATCOM and Computer*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
676022: *EHF SATCOM and Computer*	-	-	285.034	-	285.034	244.410	225.389	244.846	205.843	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY10, Project Number 653843, B-2 Advanced Technology Bomber efforts transferred from PE 0604240F, B-2 Advanced Technology Bomber, to PE 0101127F, B-2 Squadrons, transferring funds/efforts from MFP 6 to MFP 1.

In FY12, funding for Extremely High Frequency (EHF) SATCOM and Computers transferred from project 675345 to project 676022.

A. Mission Description and Budget Item Justification

The aging Ultra High Frequency (UHF) Military Satellite Communications system is being phased out and replaced by the Advanced Extremely High Frequency (AEHF) Satellite Communications (SATCOM) system. The B-2 Extremely High Frequency (EHF) SATCOM program supports the replacement of the present B-2 UHF Terminal Set with an EHF SATCOM system that will be compatible with the legacy MILSTAR I/II satellite constellation and the future AEHF satellite constellation. The B-2 EHF SATCOM system is one element of a system of systems that includes the AEHF satellites, multiple platforms, and the Family of Advanced Beyond-Line-of-Site Terminals (FAB-T) or other equivalent terminals, as required. The B-2 EHF SATCOM upgrade is a three increment program.

Increment 1 will provide upgraded flight management computer processors, increased data storage, re-hosted flight management operational flight program, and a high bandwidth data bus in order to prevent degradation of existing capabilities resulting from EHF SATCOM installation. Additionally, the Increment 1 Integrated Processing Unit and Disk Drive Unit architectures establish a high speed fiber optic structure network as well as maintain connectivity to legacy interfaces. Increment 1 provides a processing growth path to future B-2 upgrades.

Increment 2 will integrate the FAB-T Government Furnished Equipment, or other equivalent terminals (if required), into the B-2 as well as develop and install a low-observable antenna system consisting of arrays, antenna line replaceable units, and structural modifications for both power and cooling. This upgrade is critical to ensure the B-2 is compatible with the next generation communications satellite architecture and is absolutely essential in providing uninterrupted, highly survivable communications required for the command and control of the nation’s strategic nuclear forces. Connectivity is mandatory to enable network centric enabled attack in an anti-access environment.

Increment 3 will enable the B-2 to interface with the Global Information Grid and provide net ready capability.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 676022: *EHF SATCOM and Computer*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: B-2 EHF SATCOM and Computers Increment 1 System Development ***Description:*** Development of EHF SATCOM and Computers Increment 1 System Development and Demonstration (SDD) and design and fabrication of new and modified components for two test aircraft and two Force Development Evaluation (FDE) aircraft. ***FY 2010 Accomplishments:*** FY10 effort covered under Project Number 675345. ***FY 2011 Plans:*** FY11 effort covered under Project Number 675345. ***FY 2012 Base Plans:*** Complete EHF SATCOM and Computers Increment 1 SDD, complete IOT&E, and begin LRIP. ***FY 2012 OCO Plans:***	-	-	57.069	-	57.069
Title: B-2 EHF SATCOM and Computers Increment 2 System Development ***Description:*** Development of EHF SATCOM and Computer Increment 2 component advanced design, risk reduction activities to meet Milestone B in FY13. ***FY 2010 Accomplishments:*** FY10 effort covered under Project Number 675345. ***FY 2011 Plans:*** FY11 effort covered under Project Number 675345. ***FY 2012 Base Plans:*** Continue EHF SATCOM and Computer Increment 2 component advanced design, risk reduction activities to achieve a successful System preliminary design review (PDR). ***FY 2012 OCO Plans:***	-	-	227.965	-	227.965
Accomplishments/Planned Programs Subtotals	-	-	285.034	-	285.034

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 676022: *EHF SATCOM and Computer*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0101127F: *B-2 Squadrons, APAF, Modifications/BA05/B-2A*	0.000	0.000	29.501	0.000	29.501	36.635	28.687	10.039	6.252	Continuing	Continuing
• PE 0101127F (1): *B-2 Squadrons, APAF, Post Prod Support/BA07/B-2A/ICS*	0.000	0.000	0.101	0.000	0.101	0.481	0.489	0.830	0.738	Continuing	Continuing
• PE 0101127F (2): *B-2 Squadrons, APAF, A/C Initial Spares/BA06/B-2A*	0.000	0.000	0.803	0.000	0.803	6.673	5.098	0.512	0.522	Continuing	Continuing
• PE 0101127F (3): *B-2 Squadrons, APAF, Depot Activation/BA07/B-2A*	0.000	0.000	3.925	0.000	3.925	2.703	0.192	0.196	0.000	Continuing	Continuing

D. Acquisition Strategy

Key elements of the overall acquisition strategy include: use of sole source contract with a prime/integrating contractor (Northrop Grumman); use of cost plus award fee/ incentive fee (CPAF/IF) development contracts; and the combination of developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime, and differences in fielded configurations

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 676022: *EHF SATCOM and Computer*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Vehicle	Various	Various:Various,	-	-		280.430	Oct 2011	-		280.430	Continuing	Continuing	TBD
		Subtotal	-	-		280.430		-		280.430			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Costs	Various	Various:Various,	-	-		1.642	Oct 2011	-		1.642	Continuing	Continuing	TBD
		Subtotal	-	-		1.642		-		1.642			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test	PO	AFFTC:,	-	-		2.962	Oct 2011	-		2.962	Continuing	Continuing	TBD
		Subtotal	-	-		2.962		-		2.962			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		285.034		-		285.034			

Remarks

Award dates listed are the first incremental funding opportunity associated with each cost category.

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 676022: *EHF SATCOM and Computer*

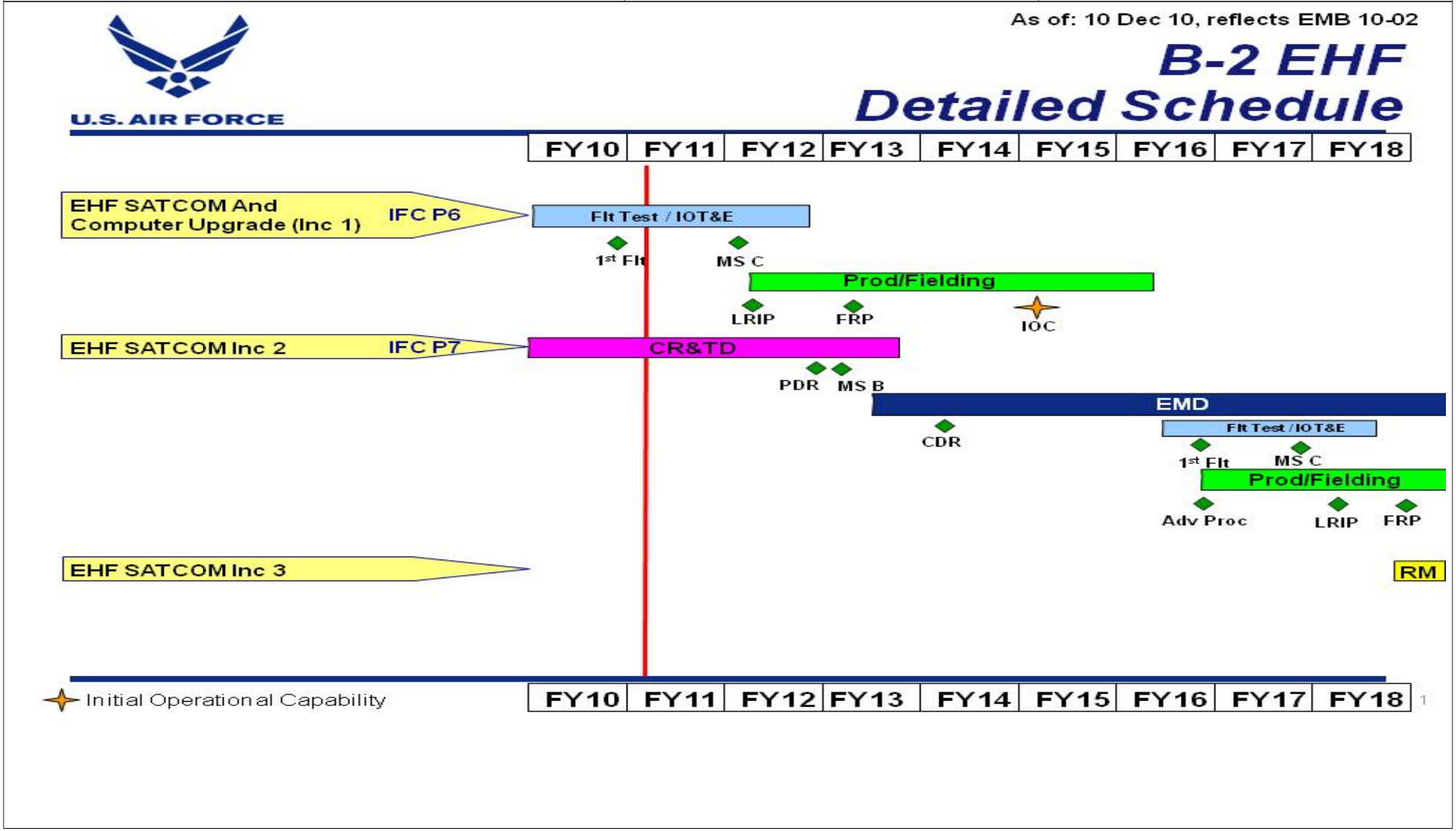


Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 676022: *EHF SATCOM and Computer*

Schedule Details

	Start		End	
Events	Quarter	Year	Quarter	Year
EHF SATCOM and Computers Inc 1 First Flight Test	4	2010	4	2010
EHF SATCOM and Computers Inc 1 Milestone C production decision	1	2012	1	2012
EHF SATCOM and Computers Inc 2 System Preliminary Design Review	4	2012	4	2012
EHF SATCOM and Computers Inc 2 Milestone B	1	2013	1	2013
EHF SATCOM and Computers Inc 2 start engineering and manufacturing development	2	2013	2	2013
EHF SATCOM and Computers Inc 2 Critical Design Review	1	2014	1	2014

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 676023: *Defensive Management System*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
676023: *Defensive Management System*	-	-	41.127	-	41.127	177.878	181.288	98.910	49.789	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY10, Project Number 653843, B-2 Advanced Technology Bomber efforts transferred from PE 0604240F, B-2 Advanced Technology Bomber, to PE 0101127F, B-2 Squadrons, transferring funds/efforts from MFP 6 to MFP 1.

In FY12, funding for DMS upgrade transferred from project 675345 to project 676023.

The program funding includes reductions for acquisition excellence efficiencies in FY15 and FY16 that are not intended to impact program content. Reductions for efficiencies may be spread to other Air Force programs at a later date. Amounts of the reductions are: $3.7MM/FY15 and $54.2/FY16

A. Mission Description and Budget Item Justification

The B-2 Defensive Management System modernization (DMS) program maintains the existing direct attack stealth capability against 21st century threats. DMS will upgrade the Electronic Support Measures, antennas, and display processing units. Modernization of this system will resolve the #1 obsolescence issue in the B-2 fleet.

The B-2 DMS will provide the Joint Force Commander and the B-2 fleet: advanced situational awareness, improved supportability, enhanced lethality, increased platform survivability, and networked battlespace awareness. The B-2 DMS upgrade will provide the following core capabilities for the B-2 and joint warfighting force: 1) The ability to provide indication, type, and position of airborne- and ground-based radio frequency (RF) threats with the situational awareness needed to avoid, engage, or negate threats, 2) Improved RF threat information that can be reported to control agencies or inter-flight for improved situation/battlespace awareness, 3) The ability to adequately control, process, and display incoming threat information to the pilot and provide updated battle-space awareness, and 4) Improved supportability and reduced operations and maintenance costs.

As DMS requires increased functionality and capability of the display processor, it includes FY10 and future year budgets transitioned from the B-2 Integrated Display System modification (MN-110041).
FY10 Congressional Plus-up for B-2 Strike Control System establishes the foundation for all future data fusion and pilot-vehicle interface upgrades. Funds were applied to the DMS development program.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 676023: *Defensive Management System*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: B-2 Defensive Management System (DMS) Modernization	-	-	41.127	-	41.127
Description: Development of DMS Moderization Program to improve aircrew situational awareness through replacement of passive antennas, receiver/processors, and display processors, address critical system shortfalls, and improve DMS component repair issues. ***FY 2010 Accomplishments:*** FY10 effort covered under Project Number 675345. ***FY 2011 Plans:*** FY11 effort covered under Project Number 675345. ***FY 2012 Base Plans:*** Continue DMS Modernization technology development leading to Preliminary Design Review and a successful Milestone B decision in FY13. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	-	-	41.127	-	41.127

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Key elements of the overall acquisition strategy include: use of sole source contract with a prime/integrating contractor (Northrop Grumman); use of cost plus award fee/ incentive fee (CPAF/IF) development contracts; and the combination of developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime, and differences in fielded configurations.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 676023: *Defensive Management System*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Vehicle	Various	Various:Various,	-	-		41.127	Oct 2011	-		41.127	Continuing	Continuing	TBD
		Subtotal	-	-		41.127		-		41.127			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		41.127		-		41.127			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101127F: *B-2 SQUADRONS*	PROJECT 676023: *Defensive Management System*

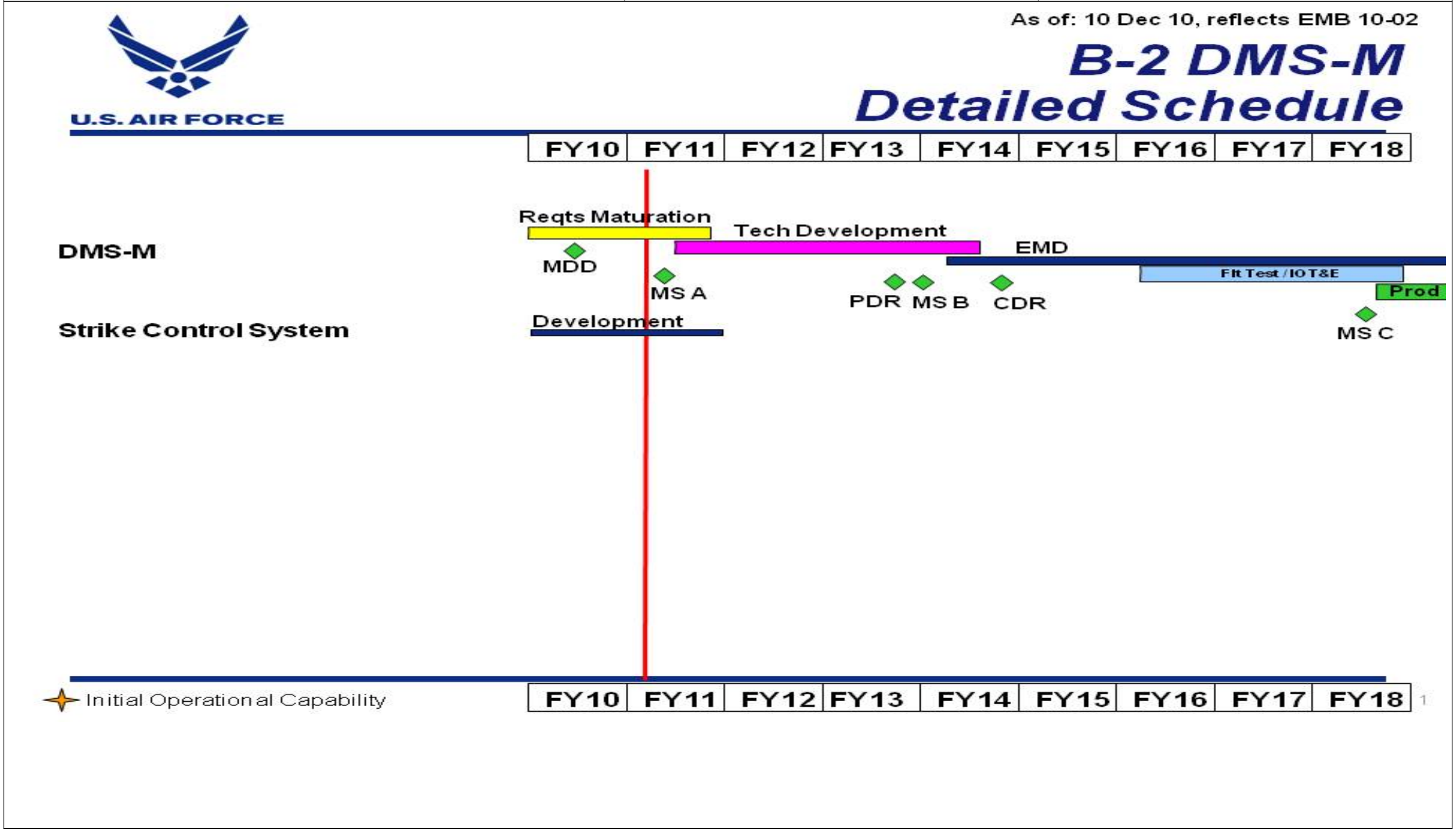


Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101127F: *B-2 SQUADRONS*	**PROJECT** 676023: *Defensive Management System*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
DMS Milestone A	2	2011	2	2011
DMS Technology Development Contract Award	3	2011	3	2011
DMS Technology Development	3	2011	2	2014
DMS Preliminary Design Review	3	2013	3	2013
DMS Milestone B	4	2013	4	2013
DMS Critical Design Review	4	2014	4	2014

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	32.567	28.441	23.072	-	23.072	22.650	12.298	12.451	12.715	Continuing	Continuing
675059: *Strategic War Planning System (SWPS)*	10.373	18.904	10.399	-	10.399	10.435	-	-	-	Continuing	Continuing
675282: *Joint Navigation Warfare Center (JNWC)*	7.979	9.529	9.551	-	9.551	9.686	9.878	10.042	10.220	Continuing	Continuing
675368: *GSIN (Global Integrated Sensor Network)*	14.215	0.008	3.122	-	3.122	2.529	2.420	2.409	2.495	Continuing	Continuing

A. Mission Description and Budget Item Justification

The mission of USSTRATCOM is to establish and provide full-spectrum global strike, coordinated space and information operations capabilities to meet both deterrent and decisive national security objectives, and to provide operational space support, integrated missile defense, Global Command Control Communications and Computers Intelligence Surveillance and Reconnaissance (C4ISR), and specialized planning expertise to the joint warfighter. This mission has been defined by the 2002 Unified Command Plan (UCP) changes 1 and 2. To enable completion of these missions, USSTRATCOM is modernizing the Integrated Strategic Planning and Analysis Network (ISPAN) (formerly known as SWPS), developing information systems and techniques to counter and conduct Navigation Warfare (NAVWAR) and establishing a unified national architecture integrating disparate Missile Warning/Missile Defense (MW/MD) systems into a single Internet Protocol (IP)-based system known as the Global Sensor Integrated Network (GSIN) to provide redundant and unambiguous MW/MD data to national leadership. When the ISPAN modernization is complete the system will support the warfighter in both deliberate and adaptive planning environments while allowing the National Command Authorities to employ the full spectrum of kinetic and non-kinetic weapons. The ISPAN system will continue to evolve as weapon systems are matured, new systems are developed, and the threat changes, particularly in the area of worldwide proliferation of Weapons of Mass Destruction (WMD). Navigation Warfare (NAVWAR) is a warfighting application of electronic warfare (EW), Information Operations (IO) and space control (SC) employing various techniques and technologies to negate or prevent hostile use of positioning, navigation, and timing (PNT) information and protect unimpeded use of PNT information by U.S., Allied, and Coalition Forces while not unduly disrupting peaceful use outside an area of operation. The Joint Navigation Warfare Center (JNWC) was established to integrate and coordinate NAVWAR PNT capabilities across the mission areas of intelligence, surveillance, reconnaissance, information operations, electronic warfare, and space control. The JNWC is also commissioned to integrate NAVWAR into space operations and assists the warfighter with subject matter expertise to “operationalize” NAVWAR, encouraging the NAVWAR view that the Global Positioning System is a taskable weapons system in addition to being a worldwide PNT service. The JNWC establishes and maintains the Department’s premier basis of NAVWAR expertise, and provides subject matter expertise and knowledge support to warfighters, Department decision makers, the Federal Interagency (the Department of Homeland Security and other civil agencies concerned with the Critical National Infrastructure), and the coalition through testing and evaluation; modeling, simulation and analysis; and exercise and training support. The Nation's strategic C2, sensors and mission planning programs can not rapidly exchange information across multiple missions, creating ambiguity that delays time critical national C2 decision making processes. GSIN establishes a unified national architecture integrating disparate MW/MD systems into a single IP-based system providing redundant and unambiguous MW/MD data to national leadership. GSIN nets together all sensors, from tactical to strategic, including the Nation's most modern and capable assets - taking advantage of their larger numbers, improved algorithms, mobility and forward deployment to provide earlier cross-cueing and expanded decision space when every second counts. GSIN will permit an IP-based

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*

User Defined Operational Picture (UDOP)to augment voice conferencing and rapidly build a single, unambiguous missile event picture allowing real-time senior collaboration for nuclear C2 and improved senior leader situational awareness (SA) and decision-making.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	33.746	28.441	20.026	-	20.026
Current President's Budget	32.567	28.441	23.072	-	23.072
Total Adjustments	-1.179	-	3.046	-	3.046
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-0.141	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.038	-			
• Other Adjustments	-	-	3.046	-	3.046

Change Summary Explanation

FY12 increase of $3.046 is for the Global Sensor Integrated Network (GSIN) effort.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675059: *Strategic War Planning System (SWPS)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675059: *Strategic War Planning System (SWPS)*	10.373	18.904	10.399	-	10.399	10.435	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The mission of USSTRATCOM is to establish and provide full-spectrum global strike, coordinated space and information operations capabilities to meet both deterrent and decisive national security objectives, and to provide operational space support, integrated missile defense, Global Command Control Communications and Computers Intelligence Surveillance and Reconnaissance (C4ISR), and specialized planning expertise to the joint warfighter. This mission has been defined by the 2002 Unified Command Plan (UCP) changes 1 and 2. To enable these missions, the Integrated Strategic Planning and Analysis Network (ISPAN) (formerly known as SWPS) must be capable of both deliberate and adaptive planning employing the full spectrum of kinetic and non-kinetic weapons. The planning system will continue to evolve as weapon systems are matured, new systems are developed, and the threat changes, particularly in the area of worldwide proliferation of Weapons of Mass Destruction (WMD).

The ISPAN modernization program includes initiation of Course of Action (COA) Development as a service to the DoD enterprise, workflow and decision support development, Combatant Commander (COCOM) Collaboration (Global Operations Center Collaborative Environment (GOC CE), User Defined Operational Picture (UDOP)), conventional mission planning integration, and Mission Planning Analysis System (MPAS) maintenance and modernization. This includes software coding, integration of multiple internal and external planning applications, as well as developmental and early operational test activities. ISPAN also includes automated data processing equipment (ADPE), software, facilities support, manpower, and training to support the mission objectives of ISPAN, associated deployable and distributed data processing nodes, and subsidiary systems. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: ISPAN Block 1 Post- IOC Enhancement	3.230	-	-	-	-
Description: Funds Post IOC enhancements of web services and develop solutions for Information Assurance deficiencies.					
FY 2010 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675059: *Strategic War Planning System (SWPS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Funds used to develop Post IOC enhancements for web services and develop solutions for Information Assurance deficiencies. ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***					
Title: ISPAN Increment 2 Modernization ***Description:*** Funds the next increment of planning tools for the ISPAN Collaborative Information Environment (CIE). Increment 2 continues by building on capabilities delivered in Block 1. Increment 2 will develop advanced decision support capabilities for senior leader situational awareness through enhanced data analysis and visualization, and expand development of services and operational nodes to support Global Information Grid (GIG) Enterprise services and distributed operation. ***FY 2010 Accomplishments:*** Funded the next increment of planning tools for the ISPAN Collaborative Information Environment (CIE) by building on capabilities delivered in Block 1. Developed advanced decision support capabilities for senior leader situational awareness through enhanced data analysis and visualization, and expand development of services and operational nodes to support GIG Enterprise services and distributed operation. ***FY 2011 Plans:*** Increment 2 continues by building on capabilities delivered in Block 1. Increment 2 will develop advanced decision support capabilities for senior leader situational awareness through enhanced data analysis and visualization, and expand development of services and operational nodes to support GIG Enterprise services and distributed operation. ***FY 2012 Base Plans:*** Funds will complete development activities for CIE and the development activities for Net-centricity and enhanced planning capabilities. ***FY 2012 OCO Plans:***	7.143	18.698	9.695	-	9.695
Title: Increment 3 Modernization	-	0.206	0.704	-	0.704

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	**PROJECT** 675059: *Strategic War Planning System (SWPS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Funds pre-Milestone B risk reduction activities for the next increment of planning tools for the ISPAN Collaborative Information Environment (CIE). Builds on the capabilities and technology developed in Block 1 and Increment 2, to achieve a more complete implementation of the joint operation planning process that includes collaborative campaign/contingency planning and integrated COA development to meet the desired crisis action and time sensitive planning timelines. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** Funds pre-Milestone B risk reduction activities for the next increment of planning tools for the ISPAN Collaborative Information Environment (CIE). Builds on the capabilities and technology developed in Block 1 and Increment 2, to achieve a more complete implementation of the joint operation planning process that includes collaborative campaign/contingency planning and integrated COA development to meet the desired crisis action and time sensitive planning timelines. ***FY 2012 Base Plans:*** Funds pre-Milestone B risk reduction activities for the next increment of planning tools for the ISPAN Collaborative Information Environment (CIE). Builds on the capabilities and technology developed in Block 1 and Increment 2, to achieve a more complete implementation of the joint operation planning process that includes collaborative campaign/contingency planning and integrated COA development to meet the desired crisis action and time sensitive planning timelines. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	10.373	18.904	10.399	-	10.399

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0101313F: *OPAF*	12.589	13.344	13.240	0.000	13.240	9.917	7.863	6.975	7.101	Continuing	Continuing
• PE 0101313F (1): *O&M*	28.509	0.183	13.282	0.000	13.282	13.186	7.191	6.998	7.103	Continuing	Continuing

D. Acquisition Strategy

ISPAN will develop and modernize strategic planning tools for the combatant commanders using an evolutionary acquisition strategy with development contracts that are negotiated and awarded in a competitive environment.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675059: *Strategic War Planning System (SWPS)*

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675059: *Strategic War Planning System (SWPS)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Vehicle Planning System (APS)	TBD	BAE:San Diego, CA	-	-		-		-		-	0.000	0.000	47.100
Missile Graphics Planning System (MGPS)	C/CPAF	Northrop Grumman:Bellevue, NE	1.484	-		-		-		-	0.000	1.484	41.000
Targeting	C/CPAF	SAIC:San Diego, CA	-	-		-		-		-	0.000	0.000	36.200
ISPAN Modernization	C/CPAF	Lockheed Martin Integrated Systems:Papillion, NE	13.198	15.288	Dec 2010	6.818	Dec 2011	-		6.818	25.181	60.485	164.783
Miscellaneous Contracts	C/CPAF	TBD:TBD,	6.305	3.616	Dec 2010	3.581	Dec 2011	-		3.581	5.546	19.048	TBD
Classified Project (FY08 Supplemental)	TBD	TBD:TBD	-	-		-		-		-	0.000	0.000	0.000
		Subtotal	20.987	18.904		10.399		-		10.399	30.727	81.017	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

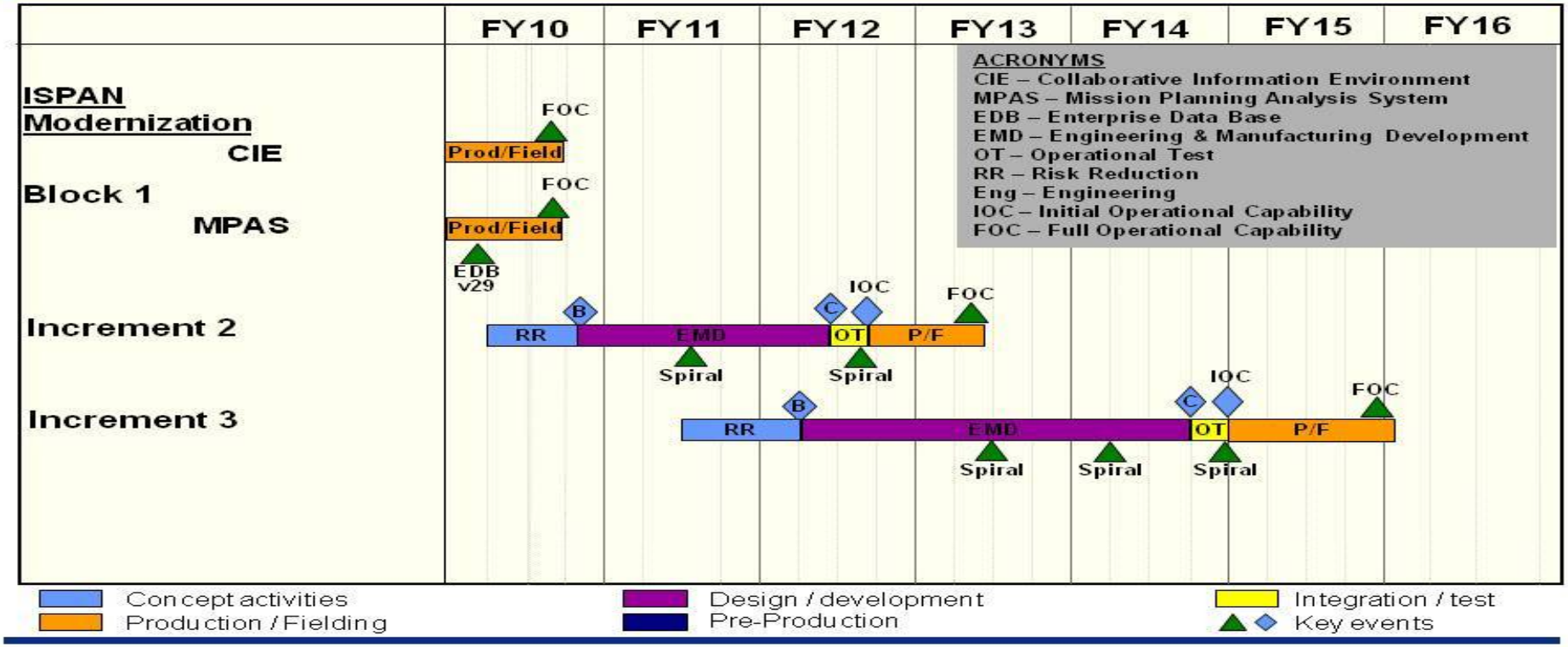
Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675059: *Strategic War Planning System (SWPS)*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	20.987	18.904		10.399		-		10.399	30.727	81.017	

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675059: *Strategic War Planning System (SWPS)*

ISPAN Block 1 / Increment Schedule



Depicted by installation/production flow

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	**PROJECT** 675059: *Strategic War Planning System (SWPS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ISPAN Block 1 FOC	3	2010	3	2010
ISPAN Increment 2 MS B	4	2010	4	2010
ISPAN Increment 2 Development	4	2010	2	2012
ISPAN Increment 2 IOC	3	2012	3	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675282: *Joint Navigation Warfare Center (JNWC)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675282: *Joint Navigation Warfare Center (JNWC)*	7.979	9.529	9.551	-	9.551	9.686	9.878	10.042	10.220	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Navigation Warfare (NAVWAR) is a warfighting application of electronic warfare (EW), Information Operations (IO), and space control (SC) employing various techniques and technologies to negate or prevent hostile use of positioning, navigation, and timing (PNT) information and protect unimpeded use of PNT information by U.S., Allied, and Coalition Forces while not unduly disrupting peaceful use outside an area of operation. The Joint Navigation Warfare Center (JNWC) integrates and coordinates NAVWAR PNT capabilities across the mission areas of intelligence, surveillance, reconnaissance, information operations, electronic warfare, cyber and space control. The JNWC establishes and maintains the Department's premier basis of NAVWAR expertise, and provides subject matter expertise and knowledge support to warfighters, Department decision makers, the Federal Interagency (the Department of Homeland Security and other civil agencies concerned with the Critical National Infrastructure), and the coalition through testing and evaluation; modeling, simulation and analysis; and exercise and training support. In recent years, the Global Positioning System (GPS) has become one of the most critical enablers of modern, advanced technology warfare. In an era where everything from advanced weapons systems to basic goods and services are tracked or guided by navigation systems such as GPS, Navigation Warfare is an interest and concern, especially if those systems are interrupted or lost. Likewise, as Global Navigation Satellite Systems (GNSS) proliferate, it becomes necessary to consider not only denying adversary use of GPS but also negating adversary use of alternate GNSS systems for PNT. The primary mission of the JNWC is to provide joint warfighter NAVWAR support through three broad mission areas:

a. Warfighter Operational Support – The JNWC applies knowledge of PNT vulnerabilities, prevention capabilities, and system operations to integrate NAVWAR as an element of warfighting operations. The JNWC provides reach-back capabilities to assist in resolving NAVWAR issues, address situations involving degradation or denial of PNT capabilities, and recommend actions to mitigate effects of both hostile and non-hostile events. The JNWC develops and maintains current information for the warfighter and theater commanders to include assessments of adversary capabilities, assessments of coalition capabilities and limitations, and other topics of special interest. The JNWC also provides subject matter expertise and knowledge support to Department acquisition and policy decision makers, the Federal Interagency (the Department of Homeland Security and other civil agencies concerned with the Critical National Infrastructure), and the coalition.

b. Test, Training, Exercises, and Experiments – This JNWC mission area is the centerpiece for maintaining NAVWAR currency of information for the warfighter. The JNWC conducts annual NAVWAR field test events, and provides NAVWAR technical assistance for training, exercises and experiments. The JNWC, as part of this effort, maintains Integrated Joint NAVWAR Test Roadmaps and current intelligence products on adversary NAVWAR capabilities and Coalition NAVWAR capabilities and vulnerabilities. JNWC GYPSY field test events focus on fielded operational systems and capabilities to integrate NAVWAR and PNT operations, to baseline current NAVWAR electronic protection, support, and attack capabilities, and to assist warfighters optimize and deconflict theater/tactical assets. JNWC FORTUNE field test events are more engineering focused and are used to evaluate specific NAVWAR capabilities or vulnerabilities, and to reduce engineering risk for GYPSY events. Test, training, exercise and experiment activities: 1) prepare the joint warfighter for operations in current and rapidly evolving NAVWAR threat environments; 2) establish

priorities, standardized operational procedures for tactics, techniques, and procedures; 3) test electronic attack CONOPs to endure deconfliction and optimization with other operations to mitigate blue force fratricide; and 4) evolve standardized test methods.

c. Navigation Warfare Information Analysis Center (IAC) – The JNWC develops and maintains methods, standards, models and simulations used in NAVWAR analysis and operates the NAVWAR Information Analysis Center (IAC). JNWC evaluates new models for accuracy and applicability to specific situations and rapidly evolving threat environments. It also develops and maintains standard test methodologies created solely by the U.S. as well as test methods developed in collaboration with coalition partners. These standard methodologies ensure data sharing is efficient and effective, and ensures accurate feedback to the operational communities. The JNWC, as part of this effort, manages the GPS EA Frequency Clearance process and conducts independent analysis and verification of EA frequency clearance requests. It also maintains and upgrades the Global Positioning System Reliability Prediction Model (GPS-RPM) frequency clearance model as required and conducts modeling and simulation exercises on GPS interference to include test and exercise threat laydowns for DoD organizations unable to perform their own modeling. The NAVWAR IAC serves as a source of NAVWAR information and technical expertise for DoD researchers, engineers, program managers, warfighters, testers, and others. It collects, analyzes, synthesizes, and disseminates scientific and technical information in clearly defined specialized subject areas. It promotes standardization by: 1) providing in-depth analyses; 2) creating products that respond to technical inquiries; 3) preparing state-of-the-art reports, handbooks, and databases; 4) conducting technology assessments; and 5) supporting the exchange of information within the NAVWAR community. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: NAVWAR Operational Warfighter Support	1.780	2.223	2.205	-	2.205
Description: NAVWAR Operational Warfighter Support ***FY 2010 Accomplishments:*** Funds provided COCOM reachback analysis and developed adversary, threat and intel assessments. ***FY 2011 Plans:*** Funds provide COCOM reachback analysis and develop adversary, threat and intel assessments. ***FY 2012 Base Plans:*** Funds will provide COCOM reachback analysis and develop adversary, threat and intel assessments. ***FY 2012 OCO Plans:***					
Title: NAVWAR Test, Training, Exercises and Experiments	3.041	3.465	3.545	-	3.545
Description: Funds will support Field Tests, NATO trials, U.S. PNT Tests, Exercises and Experiments.					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675282: *Joint Navigation Warfare Center (JNWC)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Funds supported FORTUNE and GYPSY Field Tests, NATO trials, U.S. PNT Tests, Exercises and Experiments. ***FY 2011 Plans:*** Funds support FORTUNE and GYPSY Field Tests, NATO trials, U.S. PNT Tests, Exercises and Experiments. ***FY 2012 Base Plans:*** Funds will support FORTUNE and GYPSY Field Tests, NATO trials, U.S. PNT Tests, Exercises and Experiments. ***FY 2012 OCO Plans:***					
Title: NAVWAR Modeling, Simulation, Tools and Methods ***Description:*** Funds support the Information Analysis Center (IAC) to develop Global Positioning System Reliability Prediction Model (GPS-RPM) Upgrades, GPS frequency clearance evaluations, modeling and simulation methodologies, standards and analyses. ***FY 2010 Accomplishments:*** Funds supported the Information Analysis Center (IAC)in development of Global Positioning System Reliability Prediction Model (GPS-RPM) Upgrades, GPS frequency clearance evaluations, modeling and simulation methodologies, standards and analyses. ***FY 2011 Plans:*** Funds support the Information Analysis Center (IAC), develop Global Positioning System Reliability Prediction Model (GPS-RPM) Upgrades, GPS frequency clearance evaluations, modeling and simulation methodologies, standards and analyses. ***FY 2012 Base Plans:*** Funds will support the Information Analysis Center (IAC), develop Global Positioning System Reliability Prediction Model (GPS-RPM) Upgrades, GPS frequency clearance evaluations, modeling and simulation methodologies, standards and analyses. ***FY 2012 OCO Plans:***	3.158	3.841	3.801	-	3.801
Accomplishments/Planned Programs Subtotals	7.979	9.529	9.551	-	9.551

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	**PROJECT** 675282: *Joint Navigation Warfare Center (JNWC)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

NAVWAR will investigate, test, and simulate potential threats and mitigation strategies for preventing the hostile use of Positioning, Navigation and Timing (PNT) information through the use of competitive contracts and selective employment of government agencies.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675282: *Joint Navigation Warfare Center (JNWC)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NAVWAR Warfighter Operational Support	C/TBD	Overlook Systems Technologies Inc:Vienna VA; Kirtland AFB, NM	1.780	2.223	Dec 2010	2.205	Dec 2011	-		2.205	Continuing	Continuing	TBD
NAVWAR Modeling, Simulation, Tools & Methods and Integrated Analysis Center	C/CPAF	Overlook Systems Technologies Inc:Vienna VA; Kirtland AFB, NM	3.158	3.841	Dec 2010	3.545	Dec 2011	-		3.545	Continuing	Continuing	TBD
		Subtotal	4.938	6.064		5.750		-		5.750			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FORTUNE and GYPSY field tests, NATO trials, US Tests, Exercises and Experiments	PO	Multiple Gov Agencies:Vienna VA; Kirtland AFB, NM	3.041	3.465	Dec 2010	3.801	Dec 2011	-		3.801	Continuing	Continuing	TBD
		Subtotal	3.041	3.465		3.801		-		3.801			

Remarks

Multiple Government Agencies and Test Ranges

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675282: *Joint Navigation Warfare Center (JNWC)*

Management Services ($ in Millions)

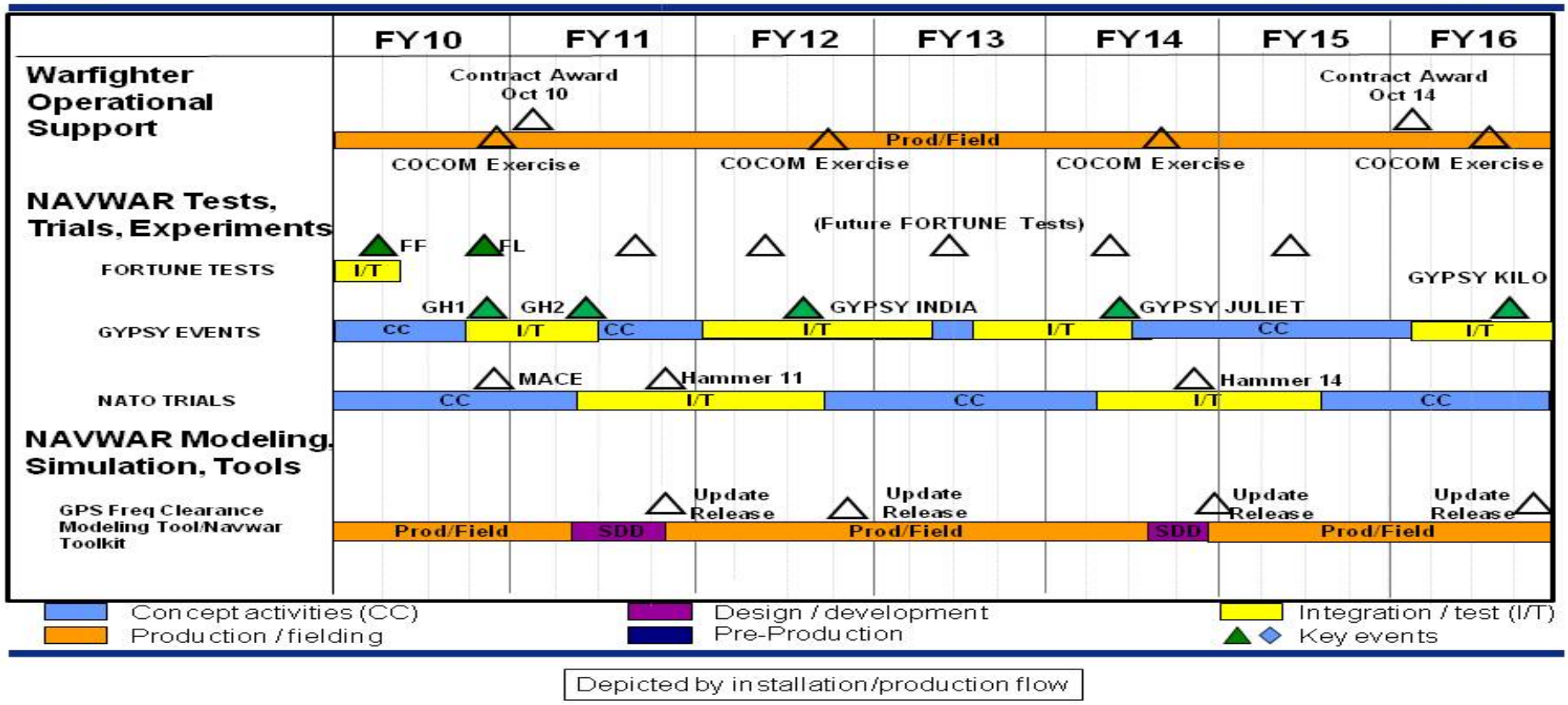
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7.979	9.529		9.551		-		9.551			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675282: *Joint Navigation Warfare Center (JNWC)*

NAVWAR Program Schedule



Depicted by installation/production flow

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	**PROJECT** 675282: *Joint Navigation Warfare Center (JNWC)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
NAVWAR Operational Support Contract Award	1	2011	1	2011
NAVWAR Test, Training, Exercises & Experiments - FORTUNE Field Tests	1	2011	2	2011
NAVWAR Test, Training, Exercises & Experiments - NATO Trials & Exercises	3	2011	3	2011
NAVWAR Test, Training, Exercises & Experiments - FORTUNE Field Tests (1)	2	2012	2	2012
NAVWAR Test, Training, Exercises & Experiments - GYPSY HOTEL Tests	3	2012	3	2012
GPS Frequency Clearance	1	2012	4	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675368: *GSIN (Global Integrated Sensor Network)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675368: *GSIN (Global Integrated Sensor Network)*	14.215	0.008	3.122	-	3.122	2.529	2.420	2.409	2.495	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The mission of USSTRATCOM is to establish and provide full-spectrum global strike, coordinated space and information operations capabilities to meet both deterrent and decisive national security objectives, and to provide operational space support, integrated missile defense, Global Command control Communications and Computers Intelligence Surveillance and Reconnaissance (C4ISR), and specialized planning expertise to the joint warfighter. This mission has been defined by the 2002 Unified Command Plan (UCP) changes 1 and 2. GSIN nets together all sensors, from tactical to strategic, including the Nation's most modern and capable assets, taking advantage of their larger numbers, improved algorithms, mobility and forward deployment to provide earlier cross-cueing and expanded decision space when every second counts. GSIN will permit an IP-based User Defined Operating Picture (UDOP) to augment voice conferencing and rapidly build a single, unambiguous missile event picture allowing real-time senior collaboration for nuclear C2 and improved senior leader situational awareness (SA) and decision-making.

The Nation's strategic C2, sensors and mission planning programs can not rapidly exchange information across multiple missions, creating ambiguity that delays time critical national C2 decision making processes. The problem is most evident in the Department's missile warning (MW) and missile defense (MD) programs. GSIN establishes a unified national architecture integrating disparate MW/MD systems into a single IP-based system providing redundant and unambiguous MW/MD data to national leadership. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: GSIN Increment 1 Missile Defense (MD)	7.000	-	-	-	-
Description: Funds will design and develop Missile Defense (MD) harmonized data and exposure services. Implementation plans will be developed for the incremental software to mature data exposure capabilities and migrate data to a common, XML net enabled command capability solution. Provide individual sensor and event track data, status and health data, additional information assurance capabilities and public key infrastructure certificate software management on secret networks (SIPRnet)					
FY 2010 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675368: *GSIN (Global Integrated Sensor Network)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Funds designed and developed Missile Defense (MD) harmonized data and exposure services. Options and implementation plans developed for the incremental software to mature data exposure capabilities and migrate data to a common, XML net-enabled command capability solution. The MD visualization service and data correlation risk reduction evaluation capability was also developed ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***					
Title: GSIN Visualization Services, Demonstrations and Studies ***Description:*** Funds development of integrated Missile Warning and Missile Defense visualization service to display data in a common operational picture. Conducts studies and demonstrations of data correlation, data filtering services for risk reduction evaluations. ***FY 2010 Accomplishments:*** Funded development of integrated Missile Warning and Missile Defense visualization service to display data in a common operational picture. Conducted studies and demonstrations of data correlation, data filtering services for risk reduction evaluations. ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** Funds will develop modifications and enhancements to visualization and data services; Continue studies to include demonstration and evaluation of a Resource Broker capability ***FY 2012 OCO Plans:***	4.605	-	1.250	-	1.250
Title: GSIN Increment 1 Common XML Data Schema ***Description:*** Funds will develop a common, XML net enabled data schema to integrate Missile Warning, Missile Defense sensor data for DISA Secret and below interoperability; create and coordinate Information Assurance documentation; support security test and evaluation; conduct developmental, no-degradation and operational testing and register data schema and services. ***FY 2010 Accomplishments:***	2.610	0.008	1.872	-	1.872

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675368: *GSIN (Global Integrated Sensor Network)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Funds developed a common, XML net enabled data schema integrating Missile Warning, Missile Defense sensor data for DISA Secret and below interoperability; created and coordinated Information Assurance documentation; supported security test and evaluation; conducted developmental, no-degradation and operational testing and registered data schema and services. ***FY 2011 Plans:*** Funds incremental development of common schema to integrate Space Situational Awareness and Theater Missile Warning data; support security test and evaluation; conduct development, non-degradation and ops testing. ***FY 2012 Base Plans:*** Funds will continue incremental development of common schema to integrate Space Situational Awareness and Theater Missile Warning data; support security test and evaluation; conduct development, non-degradation and ops testing. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	14.215	0.008	3.122	-	3.122

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

GSIN will use various existing contract vehicles to manage, develop and modernize the combined Missile Warning/Missile Defense data exposure architecture and solution.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675368: *GSIN (Global Integrated Sensor Network)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Missile Defense software development	C/CPAF	Lockheed Martin:Gaithersburg, MD	7.000	0.008	Feb 2011	-		-		-	Continuing	Continuing	TBD
Data Correlation, Visualization Architecture, Data Filtering Studies	C/CPAF	MIT/LL:Boston, MA	4.605	-		1.800	Feb 2012	-		1.800	0.000	6.405	0.000
Common Schema	C/CPAF	BAH:Omaha, NE	1.932	-		1.322	Feb 2012	-		1.322	0.000	3.254	0.000
		Subtotal	13.537	0.008		3.122		-		3.122			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Functional management support	C/CPAF	Various:Various,	0.328	-		-		-		-	Continuing	Continuing	0.000
Development Review and Management	C/TBD	Various:Various,	0.350	-		-		-		-	0.000	0.350	0.000
		Subtotal	0.678	-		-		-		-			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675368: *GSIN (Global Integrated Sensor Network)*

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.215	0.008		3.122		-		3.122			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	PROJECT 675368: *GSIN (Global Integrated Sensor Network)*

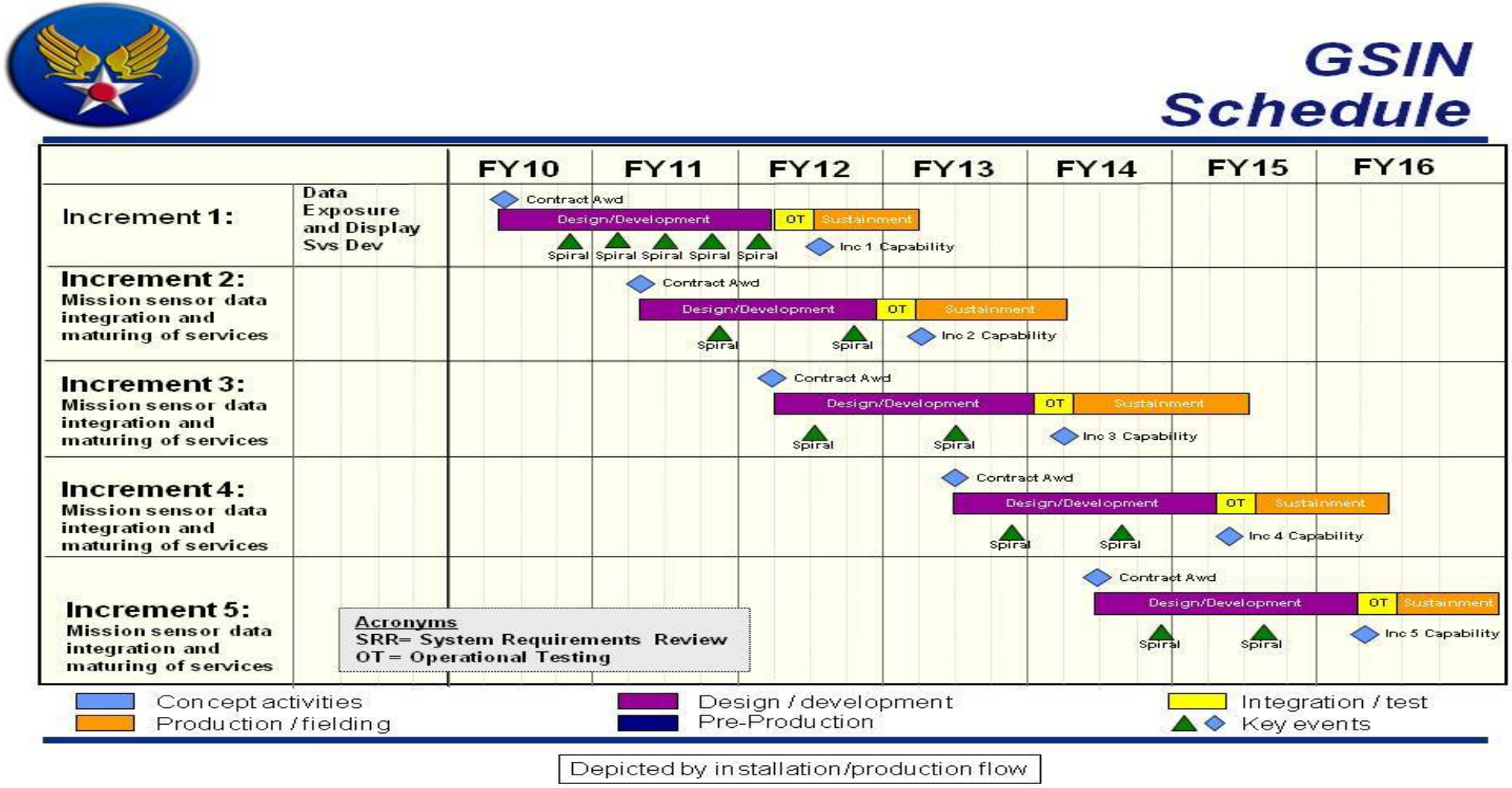


Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101313F: *STRAT WAR PLANNING SYS - USSTRATCOM*	**PROJECT** 675368: *GSIN (Global Integrated Sensor Network)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Increment 2 contract award	2	2011	2	2011
Increment 2 Spiral Capability	1	2013	1	2014
Increment 3 contract award	2	2012	2	2012
Increment 3 Spiral Capability	1	2014	1	2015
Increment 4 contract award	3	2013	3	2013
Increment 4 Spiral Capability	2	2015	2	2016
Increment 5 contract award	3	2014	3	2014
Increment 5 Spiral capability	2	2016	2	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0102325F: *JOINT SURVEILLANCE SYSTEM*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	9.521	-	4.485	-	4.485	-	-	-	-	Continuing	Continuing
675371: *CRITICAL PARTS REPLACEMENT PROGRAM*	9.521	-	4.485	-	4.485	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

The FPS-117 radar supports the NORAD, USNORTHCOM, and PACOM missions. The radars are part of the Atmospheric Early Warning System (AEWS), providing radar data to both USAF and Federal Aviation Administration control systems in Alaska. The radars also provide air surveillance capability as part of a bi-national defense program with Canada. The USAF FPS-117s (versions 1 & 4) are no longer in production, however the latest FPS-117 (version 7, aka Block 3) is in production. The Original Equipment Manufacturer (OEM) has continued to advance this radar system's technology and perform service life upgrades for other developing nations, however, Sixty-five percent of LRUs installed in the North American system are no longer manufactured by the OEM and many subcomponents are obsolete rendering the AEWS unsupportable. Air surveillance is NORAD's number #1 issue as stated by the NORAD Commander to Congress in March 2008. Without the immediate replacement of this equipment NORAD will lose air surveillance capability by 2013 due to failing radars. The AN/FPS-117 Essential Parts Replacement Program restores the radar system capability to its original availability rates by eliminating parts obsolescence and replacing high failure rate components.

B. Program Change Summary ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**
Previous President's Budget	9.521	-	-	-	-
Current President's Budget	9.521	-	4.485	-	4.485
Total Adjustments	-	-	4.485	-	4.485
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	4.485	-	4.485

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102325F: *JOINT SURVEILLANCE SYSTEM*	PROJECT 675371: *CRITICAL PARTS REPLACEMENT PROGRAM*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675371: *CRITICAL PARTS REPLACEMENT PROGRAM*	9.521	-	4.485	-	4.485	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The FPS-117 radar supports the NORAD, USNORTHCOM, and PACOM missions. The radars are part of the Atmospheric Early Warning System (AEWS), providing radar data to both USAF and Federal Aviation Administration control systems in Alaska. The radars also provide air surveillance capability as part of a bi-national defense program with Canada. The USAF FPS-117s (versions 1 & 4) are no longer in production, however the latest FPS-117 (version 7, aka Block 3) is in production. The Original Equipment Manufacturer (OEM) has continued to advance this radar system's technology and perform service life upgrades for other developing nations, however, Sixty-five percent of LRUs installed in the North American system are no longer manufactured by the OEM and many subcomponents are obsolete rendering the AEWS unsupportable. Air surveillance is NORAD's number #1 issue as stated by the NORAD Commander to Congress in March 2008. Without the immediate replacement of this equipment NORAD will lose air surveillance capability by 2013 due to failing radars. The AN/FPS-117 Essential Parts Replacement Program restores the radar system capability to its original availability rates by eliminating parts obsolescence and replacing high failure rate components.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: SYSTEMS INTEGRATION ***Description:*** System Integration, Purchase of Government Furnished Equipment, Documentation, Test and Certification Support ***FY 2010 Accomplishments:*** Systems Integration ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** Systems Integration ***FY 2012 OCO Plans:***	8.150	-	3.485	-	3.485
Title: SYSTEMS ENGINEERING ***Description:*** System Engineering ***FY 2010 Accomplishments:***	0.939	-	0.500	-	0.500

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0102325F: *JOINT SURVEILLANCE SYSTEM*	**PROJECT** 675371: *CRITICAL PARTS REPLACEMENT PROGRAM*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
System Engineering ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** Systems Engineering ***FY 2012 OCO Plans:***					
Title: PROGRAM SUPPORT ***Description:*** Program Support ***FY 2010 Accomplishments:*** Program Support ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** Program Support ***FY 2012 OCO Plans:***	0.432	-	0.500	-	0.500
Accomplishments/Planned Programs Subtotals	9.521	-	4.485	-	4.485

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPAF: *BPAC 8330810 Comm Elec Mods BP83*	20.000	38.000	32.000	0.000	32.000	26.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

The RDT&E will be used to conduct acquisition activities, integration with equipment not being replaced, documentation and testing. Ogden ALC will be the SPD for this program. They are the best option as they have been the program office/acquisition authority for the radars while it has been in sustainment and have the expertise to conduct the procurement. There will be a full and open competition followed by a Firm Fixed Price contract award.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102325F: *JOINT SURVEILLANCE SYSTEM*	PROJECT 675371: *CRITICAL PARTS REPLACEMENT PROGRAM*

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102325F: *JOINT SURVEILLANCE SYSTEM*	PROJECT 675371: *CRITICAL PARTS REPLACEMENT PROGRAM*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prototype Integration	C/FFP	TBD:TBD	7.150	-		-		-		-	0.000	7.150	0.000
		Subtotal	7.150	-		-		-		-	0.000	7.150	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office Support	Various	OO:ALC,	0.432	-		4.174		-		4.174	0.000	4.606	0.000
		Subtotal	0.432	-		4.174		-		4.174	0.000	4.606	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prototype and Testing	Various	OO:ALC	1.000	-		-		-		-	0.000	1.000	0.000
		Subtotal	1.000	-		-		-		-	0.000	1.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management	C/FFP	A&AS Contractor:TBD,	0.939	-		0.311		-		0.311	0.000	1.250	0.000
		Subtotal	0.939	-		0.311		-		0.311	0.000	1.250	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	9.521	-		4.485		-		4.485	0.000	14.006	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102325F: *JOINT SURVEILLANCE SYSTEM*	PROJECT 675371: *CRITICAL PARTS REPLACEMENT PROGRAM*

Joint Surveillance System

Schedule Profile Milestones	FY10 Q1	FY10 Q2	FY10 Q3	FY10 Q4
A&AS Contract Award	△			
Prototype Integration Contract Award		△		
Engineering Design Evaluation			△	
Prototype Testing				△

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0102325F: *JOINT SURVEILLANCE SYSTEM*	**PROJECT** 675371: *CRITICAL PARTS REPLACEMENT PROGRAM*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
A&AS Contract	2	2010	3	2010
Prototype Inegration Contract	2	2010	3	2010
Engineeirng Design Evaluation	2	2010	3	2010
Prototype Testing	2	2010	3	2010

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0102326F: *REGION/ SECTOR OPERATIONS CONTROL CENTER*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	25.482	23.732	12.672	-	12.672	0.398	-	-	-	Continuing	Continuing
674592: *Region/Sector Operations Modernization Center (R/SAOC)*	25.482	23.732	12.672	-	12.672	0.398	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

Battle Control System-Fixed (BCS-F) is the replacement for the fixed sites for the Region/Sector Air Operations Center (R/SAOC), also known as Region Air Operations Center-Air Defense Sector (RAOC-ADS). The BCS-F program, which supports Operation NOBLE EAGLE, is a next-generation battle management command and control system with enhanced capability to integrate data from existing and future civil and military defense surveillance systems into a comprehensive recognized air picture and National Capital Region/Integrated Air Defense System (NCR/IADS). This multi-input single integrated air control picture enhances the North American Aerospace Defense/Combatant Commander's (NORAD/CC's) capability to conduct peacetime air sovereignty, transition, and conventional warfare in the event of aggression toward the North American continent (including Hawaii). The BCS-F system serves as the Air Force's Homeland Defense battle management, command, and control hub and integrates data from radar sensors, data links, and the supporting communications architecture. It provides the tactical communications and data link capabilities that enable planning, directing, coordinating, and controlling forces for air surveillance, air defense, and control of sovereign US air space (including the National Capital Region). BCS-F is a bi-national cooperative program with Canada, ensuring air defense and surveillance capability for the entire North American continent (including Hawaii). BCS-F achieved Initial Operational Capability in October 2006. The current effort focuses on the modernization and improvement of the hardware and software suite to address operational gaps as well as preventing and overcoming diminishing manufacturing sources and obsolescence issues. NCR-IADS is the post-September 11 2001, quickly established, ground based air defense system using sensors to enhance the air surveillance picture that is incorporated in BCS-F.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102326F: *REGION/ SECTOR OPERATIONS CONTROL CENTER*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	25.589	23.732	24.701	-	24.701
Current President's Budget	25.482	23.732	12.672	-	12.672
Total Adjustments	-0.107	-	-12.029	-	-12.029
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.107	-	-12.029	-	-12.029

Change Summary Explanation

Congressional General Reduction in FY10.

Increment 4 funding removed FY12-16 due to higher Air Force priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102326F: *REGION/ SECTOR OPERATIONS CONTROL CENTER*	PROJECT 674592: *Region/Sector Operations Modernization Center (R/SAOC)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674592: *Region/Sector Operations Modernization Center (R/SAOC)*	25.482	23.732	12.672	-	12.672	0.398	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Battle Control System-Fixed (BCS-F) is the replacement for the fixed sites for the Region/Sector Air Operations Center (R/SAOC), also known as Region Air Operations Center-Air Defense Sector (RAOC-ADS). The BCS-F program, which supports Operation NOBLE EAGLE, is a next-generation battle management command and control system with enhanced capability to integrate data from existing and future civil and military defense surveillance systems into a comprehensive recognized air picture and National Capital Region/Integrated Air Defense System (NCR/IADS). This multi-input single integrated air control picture enhances the North American Aerospace Defense/Combatant Commander's (NORAD/CC's) capability to conduct peacetime air sovereignty, transition, and conventional warfare in the event of aggression toward the North American continent (including Hawaii). The BCS-F system serves as the Air Force's Homeland Defense battle management, command, and control hub and integrates data from radar sensors, data links, and the supporting communications architecture. It provides the tactical communications and data link capabilities that enable planning, directing, coordinating, and controlling forces for air surveillance, air defense, and control of sovereign US air space (including the National Capital Region). BCS-F is a bi-national cooperative program with Canada, ensuring air defense and surveillance capability for the entire North American continent (including Hawaii). BCS-F achieved Initial Operational Capability in October 2006. The current effort focuses on the modernization and improvement of the hardware and software suite to address operational gaps as well as preventing and overcoming diminishing manufacturing sources and obsolescence issues. NCR-IADS is the post-September 11 2001, quickly established, ground based air defense system using sensors to enhance the air surveillance picture that is incorporated in BCS-F.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Product Development	19.099	16.067	7.571	-	7.571
Description: System Development of BCS-F.					
FY 2010 Accomplishments: Fielded operational Increment 3.1 systems in preparation for Initial Operational Capability (IOC) determination for Increment 3.1. Performed development work for Increment 3.2 and prepared system for testing in FY 11/ FY12.					
FY 2011 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102326F: *REGION/ SECTOR OPERATIONS CONTROL CENTER*	PROJECT 674592: *Region/Sector Operations Modernization Center (R/SAOC)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Performing development work for increment 3.2 and performing analysis and resolution of technical reports stemming from Increment 3.2 testing. ***FY 2012 Base Plans:*** Will complete 3.2 development and analysis and resolution of technical reports stemming from Increment 3.2 testing. ***FY 2012 OCO Plans:***					
Title: Systems Engineering ***Description:*** Program Management/Systems Engineering. ***FY 2010 Accomplishments:*** Performed systems engineering in support of fielding of Increment 3.1. Continued efforts in support of Increment 3.2 development and pre-test efforts. ***FY 2011 Plans:*** Performing systems engineering in support of Increment 3.2 development and testing. ***FY 2012 Base Plans:*** Will perform systems engineering in support of Increment 3.2 development and testing. ***FY 2012 OCO Plans:***	3.505	3.352	3.547	-	3.547
Title: Test & Evaluation ***Description:*** Test and Evaluation. ***FY 2010 Accomplishments:*** Performed follow-on testing and certification of Increment 3.1 as the system fields. ***FY 2011 Plans:*** Performing DT/OT of Increment 3.2. Performing NCR-IADS integration testing. ***FY 2012 Base Plans:***	2.878	4.313	1.554	-	1.554

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102326F: *REGION/ SECTOR OPERATIONS CONTROL CENTER*	PROJECT 674592: *Region/Sector Operations Modernization Center (R/SAOC)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Will perform follow-on testing and certification of Increment 3.2 as the system fields. Will perform NCR-IADS integration testing.					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	25.482	23.732	12.672	-	12.672

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPAF: *PE#010236F , Region/ Sector Air Operations Center*	11.132	13.989	34.431	0.000	34.431	11.177	11.587	3.835	3.921	Continuing	Continuing
• O&M: *PE#010236F , Region/ Sector Air Operations Center*	0.000	0.000	0.000	0.000	0.000	2.500	11.000	11.500	11.500	Continuing	Continuing

D. Acquisition Strategy

The BCS-Fixed program is utilizing a sole source contract to execute an incremental development acquisition strategy to further advance tactical Battle Management C2 capabilities.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102326F: *REGION/ SECTOR OPERATIONS CONTROL CENTER*	PROJECT 674592: *Region/Sector Operations Modernization Center (R/SAOC)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Continue acquisition activities associated with System Development	SS/CPIF	Thales Raytheon Systems:Fullerton, CA	19.099	16.067	Mar 2011	7.571	Dec 2011	-		7.571	0.000	42.737	TBD
		Subtotal	19.099	16.067		7.571		-		7.571	0.000	42.737	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Tech Spt	C/FFP	Various:Various,	2.098	1.773	Dec 2010	1.968	Dec 2011	-		1.968	0.000	5.839	TBD
System Engineering	SS/FFP	MITRE:Bedford, MA	1.407	1.579	Oct 2010	1.579	Oct 2011	-		1.579	0.000	4.565	TBD
		Subtotal	3.505	3.352		3.547		-		3.547	0.000	10.404	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
46th Test Wing/Other Test Act	Various	Various:Various,	2.878	3.913	Dec 2010	1.155	Oct 2011	-		1.155	0.000	7.946	TBD
NCR-IADS Integration Testing	Various	Various:Various,	-	0.400	Dec 2010	0.399	Dec 2011	-		0.399	Continuing	Continuing	TBD
		Subtotal	2.878	4.313		1.554		-		1.554			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

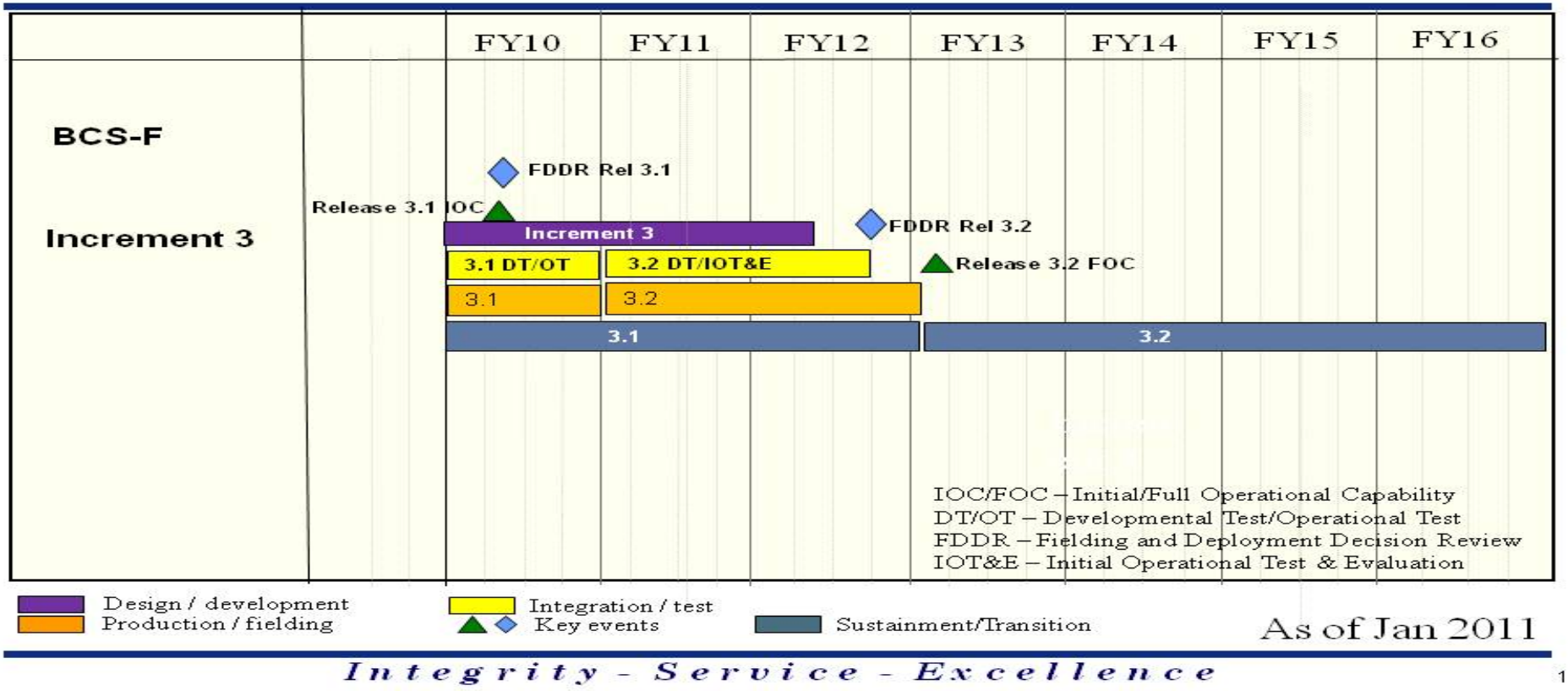
Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102326F: *REGION/ SECTOR OPERATIONS CONTROL CENTER*	PROJECT 674592: *Region/Sector Operations Modernization Center (R/SAOC)*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	25.482	23.732		12.672		-		12.672			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0102326F: *REGION/ SECTOR OPERATIONS CONTROL CENTER*	**PROJECT** 674592: *Region/Sector Operations Modernization Center (R/SAOC)*

Battle Control Systems–Fixed (BCS-F) Program Schedule



Integrity - Service - Excellence

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0102326F: *REGION/ SECTOR OPERATIONS CONTROL CENTER*	**PROJECT** 674592: *Region/Sector Operations Modernization Center (R/SAOC)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Continuation of BCS-F Increment 3 Software Development	1	2010	2	2012
BCS-F Increment 3 Release 3.1 DT/OT	1	2010	4	2010
BCS-F Increment 3 Release 3.1 Fielding Decision	2	2010	2	2010
BCS-F Increment 3 Release 3.1 IOC	2	2010	2	2010
BCS-F Increment 3 Release 3.2 DT/IOT&E	1	2011	3	2012
BCS-F Increment 3 Release 3.2 Fielding Decision	4	2012	4	2012
BCS-F Increment 3 Release 3.2 FOC	1	2013	1	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102823F: *STRAT AEROSPACE INTEL SYS ACTIVITIES*

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	0.018	0.015	0.014	-	0.014	0.016	0.015	0.016	0.016	Continuing	Continuing
675011: *Space Situational Awareness Initiatives*	0.018	0.015	0.014	-	0.014	0.016	0.015	0.016	0.016	Continuing	Continuing

A. Mission Description and Budget Item Justification

In the 2006 Strategic Master Plan, the AFSPC/CC identified a need to provide timely, accurate, relevant intelligence data to support Space Superiority operations - Offensive Counterspace (OCS), Defense Counterspace (DCS), and Space Situational Awareness (SSA). USSTRATCOM further stated the need for such a requirement in its February 2006 Space Control JCD. The SIPB HMMI is AFPSC/A2's response to those requirements. The SIPB HMMI is an information technology that links intelligence analysts to space operators, enabling them to share in the production, dissemination and visualization of predictive and highly graphic decision-making products - SIPBs. The SIPB HMMI gives the JSpOC, JFCCs, and COCOM J2/J3/J5s an Adaptive Planning tool to obtain adversary space and counterspace tactics, centers of gravity, and courses of action. Linking existing space operational and intelligence data, databases, and products, the SIPB HMMI becomes the integral effort for a space intelligence TCPED capability that influences the kill chain.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	0.018	0.015	0.015	-	0.015
Current President's Budget	0.018	0.015	0.014	-	0.014
Total Adjustments	-	-	-0.001	-	-0.001
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.001	-	-0.001

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102823F: *STRAT AEROSPACE INTEL SYS ACTIVITIES*	PROJECT 675011: *Space Situational Awareness Initiatives*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675011: *Space Situational Awareness Initiatives*	0.018	0.015	0.014	-	0.014	0.016	0.015	0.016	0.016	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

In the 2006 Strategic Master Plan, the AFSPC/CC identified a need to provide timely, accurate, relevant intelligence data to support Space Superiority operations - Offensive Counterspace (OCS), Defense Counterspace (DCS), and Space Situational Awareness (SSA). USSTRATCOM further stated the need for such a requirement in its February 2006 Space Control JCD. The SIPB HMMI is AFPSC/A2's response to those requirements. The SIPB HMMI is an information technology that links intelligence analysts to space operators, enabling them to share in the production, dissemination and visualization of predictive and highly graphic decision-making products - SIPBs. The SIPB HMMI gives the JSpOC, JFCCs, and COCOM J2/J3/J5s an Adaptive Planning tool to obtain adversary space and counterspace tactics, centers of gravity, and courses of action. Linking existing space operational and intelligence data, databases, and products, the SIPB HMMI becomes the integral effort for a space intelligence TCPED capability that influences the kill chain.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Net Centric Capability	0.007	0.010	0.014	-	0.014
Description: Develop net-centric capability for Space IPB data owners and subscribers across the space and non-space intelligence communities to rapidly update Space IPB doctrinal templates and underlying data. ***FY 2010 Accomplishments:*** Develop net-centric capability for Space IPB data owners and subscribers across the space and non-space intelligence communities to rapidly update Space IPB doctrinal templates and underlying data. ***FY 2011 Plans:*** Develop net-centric capability for Space IPB data owners and subscribers across the space and non-space intelligence communities to rapidly update Space IPB doctrinal templates and underlying data. ***FY 2012 Base Plans:*** Continue to develop net-centric capability for Space IPB data owners and subscribers across the space and non-space intelligence communities to rapidly update Space IPB doctrinal templates and underlying data. ***FY 2012 OCO Plans:***					
Title: MAJOR THRUST	0.006	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102823F: *STRAT AEROSPACE INTEL SYS ACTIVITIES*	PROJECT 675011: *Space Situational Awareness Initiatives*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Supports integration into Single Integrated Space Picture (SISP) ***FY 2010 Accomplishments:*** Supports integration into Single Integrated Space Picture (SISP) ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***					
Title: Intelligence Support ***Description:*** Enable near-real time intelligence support to space battle management, space combat assessment, and adversary space trending and pattern analysis. ***FY 2010 Accomplishments:*** Enable near-real time intelligence support to space battle management, space combat assessment, and adversary space trending and pattern analysis. ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***	0.005	0.005	-	-	-
Accomplishments/Planned Programs Subtotals	0.018	0.015	0.014	-	0.014

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Spiral 2 (June 2007 - May 2009): Transform Space IPB registered and tagged service oriented architecture data into a display of adversary space and counterspace situation. Provide capability to drill down to underlying specific threat data. Develop capability to rapidly updates Space IPB doctrinal templates and underlying data through immediate discovery, manipulation and posting of revised data by Space IPB data owners and subscribers across the space and non-space intelligence communities.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102823F: *STRAT AEROSPACE INTEL SYS ACTIVITIES*	PROJECT 675011: *Space Situational Awareness Initiatives*

Spiral 3 (June 2007 - June 2009): Further refine the Space IPB HMMI concept by adding RAIDRS, Counter-ISR, and other data feeds to existing Space IPB data sources.

Spiral 4 (October 2009 - October 2016): Transition from Space IPB data and content management to architectures, hardware, and software that enable NRT intelligence support to space battle management, space combat assessment, and adversary space trending and pattern analysis. Establish an intelligence-influenced visualization tasking of global space surveillance and theater ISR assets as well as decision aids to interpret the delivery of recent combat effects.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102823F: *STRAT AEROSPACE INTEL SYS ACTIVITIES*	PROJECT 675011: *Space Situational Awareness Initiatives*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Space Situational Awareness Initiatives	TBD	TBD:TBD,	0.018	0.015	Jan 2011	0.014		-		0.014	Continuing	Continuing	TBD
		Subtotal	0.018	0.015		0.014		-		0.014			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.018	0.015		0.014		-		0.014			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0102823F: *STRAT AEROSPACE INTEL SYS ACTIVITIES*	PROJECT 675011: *Space Situational Awareness Initiatives*

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Space Situational Awareness Initiatives	[redacted]																											

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0102823F: *STRAT AEROSPACE INTEL SYS ACTIVITIES*	**PROJECT** 675011: *Space Situational Awareness Initiatives*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Space Situational Awareness Initiatives	1	2010	4	2010

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0203761F: *Warfighter Rapid Acquisition Program*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	13.530	10.580	19.934	-	19.934	19.912	19.908	14.926	14.959	Continuing	Continuing
674936: *Warfighter Rapid Acquisition Program*	13.530	10.580	19.934	-	19.934	19.912	19.908	14.926	14.959	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Warfighter Rapid Acquisition Process (WRAP) provides rapid transition funding for the development and fielding of highly successful competitive experiments, demonstrations, and innovative approaches to support the Expeditionary Air Force (EAF) and other warfighters. WRAP supports the specific DoD goal of significantly shortening the acquisition response time and acquisition cycle times. This process is expected to shorten the project decision/initiation time by 2-5 years for selected projects due to the integrated headquarters review and immediate availability of transition funding. The WRAP process is specifically designed to deal with initiatives throughout the fiscal year as they arise resulting in a sequential distribution of WRAP funding over the course of that entire execution year. The WRAP process allows the Air Force the flexibility to acquire innovative concepts and initiatives and transition them to the warfighter annually in a manner that coincides with Air Forces' development of the President's Budget. Candidate projects will compete for WRAP approval and funds based on business case analyses, actual or potential operational impacts, cost savings, project development, production, lifecycle costs, project risk and cost of delay. The Air Force, through appropriate program offices, will manage the acquisition and development process for the integration and fielding of WRAP-approved projects. Each project will have a complete acquisition plan defined and approved as a criterion for project selection and subsequent funding. Each sponsoring Major Command/Agency must to commit full project funding in the subsequent programming cycle. Congress will be notified when all projects have been approved by the end of the current fiscal year via Congressional Notification Letters.

This effort is Budget Activity 7, Operational System Development, because the program provides a vehicle for developing operational concepts and new technologies for enhancing capabilities of the 21st century aerospace force.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	11.968	10.580	15.345	-	15.345
Current President's Budget	13.530	10.580	19.934	-	19.934
Total Adjustments	1.562	-	4.589	-	4.589
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	1.562	-	4.589	-	4.589

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203761F: *Warfighter Rapid Acquisition Program*

Change Summary Explanation

FY12 decrease...

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203761F: *Warfighter Rapid Acquisition Program*	PROJECT 674936: *Warfighter Rapid Acquisition Program*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674936: *Warfighter Rapid Acquisition Program*	13.530	10.580	19.934	-	19.934	19.912	19.908	14.926	14.959	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Warfighter Rapid Acquisition Process (WRAP) provides rapid transition funding for the development and fielding of highly successful competitive experiments, demonstrations, and innovative approaches to support the Expeditionary Air Force (EAF) and other warfighters. WRAP supports the specific DoD goal of significantly shortening the acquisition response time and acquisition cycle times. This process is expected to shorten the project decision/initiation time by 2-5 years for selected projects due to the integrated headquarters review and immediate availability of transition funding. The WRAP process is specifically designed to deal with initiatives throughout the fiscal year as they arise resulting in a sequential distribution of WRAP funding over the course of that entire execution year. The WRAP process allows the Air Force the flexibility to acquire innovative concepts and initiatives and transition them to the warfighter annually in a manner that coincides with Air Forces' development of the President's Budget. Candidate projects will compete for WRAP approval and funds based on business case analyses, actual or potential operational impacts, cost savings, project development, production, lifecycle costs, project risk and cost of delay. The Air Force, through appropriate program offices, will manage the acquisition and development process for the integration and fielding of WRAP-approved projects. Each project will have a complete acquisition plan defined and approved as a criterion for project selection and subsequent funding. Each sponsoring Major Command/Agency must to commit full project funding in the subsequent programming cycle. Congress will be notified when all projects have been approved by the end of the current fiscal year via Congressional Notification Letters.

This effort is Budget Activity 7, Operational System Development, because the program provides a vehicle for developing operational concepts and new technologies for enhancing capabilities of the 21st century aerospace force.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Program selection/initiation	13.530	10.580	19.934	-	19.934
Description: Planned WRAP project selection and project initiation					
FY 2010 Accomplishments: Plan to select qualified initiatives to receive WRAP funding and sponsorship.					
FY 2011 Plans: Plan to select qualified initiatives to receive WRAP funding and sponsorship.					
FY 2012 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203761F: *Warfighter Rapid Acquisition Program*	PROJECT 674936: *Warfighter Rapid Acquisition Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Plan to select qualified initiatives to receive WRAP funding and sponsorship.					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	13.530	10.580	19.934	-	19.934

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A: *Not Applicable*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

WRAP enables Air Force innovation including experimentation and spiral development processes to decrease fielding timelines and allows development, fielding, or upgrading of systems until the sponsoring MAJCOM/Agency can incorporate them into their subsequent submission. The Air Force, through appropriate program offices, will manage the acquisition and development process for the integration and fielding of WRAP approved projects. Each project will have a complete acquisition plan defined and approved as a criterion for project selection and subsequent funding. The Air Staff and the Air Force corporate structure will complete an Operations and Acquisition Review to ensure project affordability and appropriateness within the Air Force Overall program.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203761F: *Warfighter Rapid Acquisition Program*	PROJECT 674936: *Warfighter Rapid Acquisition Program*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Eval	Various	Multiple:Multiple,	13.530	10.580	Mar 2011	19.934	Jan 2012	-		19.934	Continuing	Continuing	TBD
Various	Various	Not specified.:Location not provided.	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	13.530	10.580		19.934		-		19.934			

Remarks

WRAP funds are distributed to initiatives capable of utilizing 3600 monies.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	13.530	10.580		19.934		-		19.934			

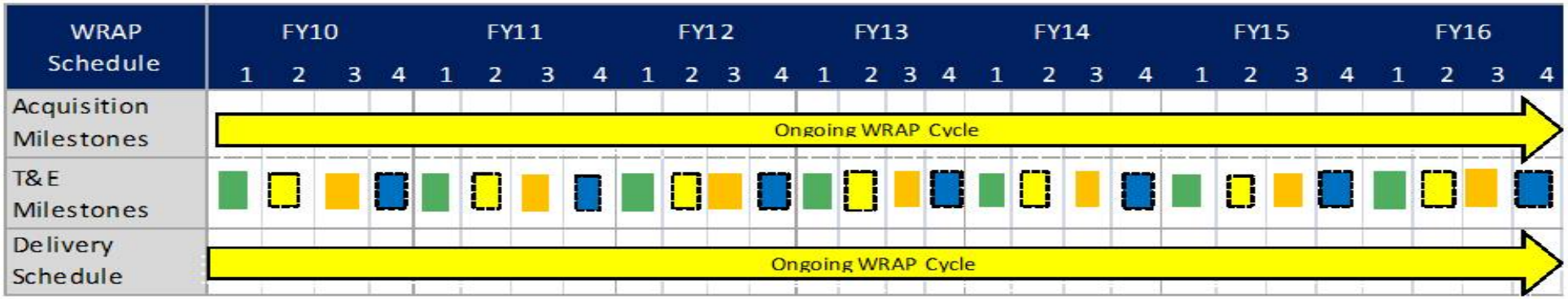
Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203761F: *Warfighter Rapid Acquisition Program*	PROJECT 674936: *Warfighter Rapid Acquisition Program*	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0203761F: *Warfighter Rapid Acquisition Program*	PROJECT 674936: *Warfighter Rapid Acquisition Program*

Warfighting Rapid Acquisition Program – PE 23761F



Annual Data Call for subsequent year WRAP Projects

Award of project funding for selected programs

Second cycle WRAP funding based on funds availability

Award of project funding second cycle based on funds availability

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0203761F: *Warfighter Rapid Acquisition Program*	**PROJECT** 674936: *Warfighter Rapid Acquisition Program*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
FY 10 WRAP Project Initiation (Executed)	1	2010	1	2010
FY 10 WRAP Project Approval/Project funding (Executed)	1	2010	2	2010
FY 11 WRAP Project Approval/Project Funding (Executed)	1	2011	2	2011
FY12 WRAP Project Approval/Project Funding (Planned)	1	2012	3	2012

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0205219F: *MQ-9 Development and Fielding*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	104.162	125.427	146.824	-	146.824	110.982	64.295	34.752	27.109	Continuing	Continuing
675246: *MQ-9 Development and Fielding*	104.162	125.427	146.824	-	146.824	110.982	64.295	34.752	27.109	Continuing	Continuing

Note

FY10 funding totals include $11.4M appropriated for Overseas Contingency Operations.

Prior Years funding estimate is $229.472. The "to complete" funding estimate is "Continuing".

Totals include funding for the PRCP Program Number 424, MQ-9 Reaper.

A. Mission Description and Budget Item Justification

The basic MQ-9 Reaper system consists of the aircraft, sensors, a ground control station (GCS), communications equipment, weapon kits, support equipment, simulator and training devices, Readiness Spares Packages (RSP), technical data/training, and personnel required to operate, maintain, and sustain the system. The system is designed to be modular and open-ended. Mission-specific equipment is employed in a 'plug-and-play' mission kit concept allowing specific aircraft and control station configurations to be tailored to fit mission needs.

The MQ-9 Reaper aircraft is a single-engine, turbo-prop remotely piloted aircraft (RPA) designed to operate over-the-horizon at medium-to-high altitude for long endurance sorties. The aircraft is designed primarily to prosecute critical, emerging Time-Sensitive-Targets (TSTs) as a radar, Electro-optical/Infrared (EO/IR), and laser designator-based attack asset with on-board hard-kill capability (hunter-killer). It also performs Intelligence, Surveillance, Reconnaissance and Target Acquisition (ISR TA). In the hunter-killer role, the aircraft employs fused multi-spectral sensors to find, fix, and track ground targets (Automatic Target Cueing (ATC), Target Location Accuracy (TLA), Metric Sensor and other capabilities), and assesses post-strike results. The MQ-9 system is continuing to develop and field capability through incremental upgrades. Two test aircraft were purchased in FY10 to support development and test activity. Future developmental capabilities include increasing the maximum gross takeoff weight capability of the aircraft; automatic takeoff and landing capability (ATLC); enhancing aircraft systems to include integrated redundant avionics; modifying the system to include provisions for a Foreign Military Sale exportable version of the weapon system; Predator Primary Data Link (PPDL) communication system upgrades and communications upgrades to include data link encryption and Ka frequency migration; navigation system upgrades; electrical system upgrades; airframe and airframe system improvements; propulsion system improvements; secure voice and data communications, including SATCOM, upgrades; sensor/stores management computer improvement; MIL-STD-1760 advanced weapons data bus; Universal Armament Interface and Miniature Munitions/Store Interface; advanced sensor and weapon payloads; improved human-machine interface (HMI); integrating precision weapons (e.g. AGM-114 Hellfire missile, GBU-12/38/49 guided bombs, and Small Diameter Bomb variants); Mode 5 / Automatic Dependent Surveillance - Broadcast (ADS-B) integration; hardware and software upgrades to the ground control station for MQ-9 operations; completing airworthiness certification; weapons system certification and accreditation; and producing applicable training devices that emulate weapon system capabilities. The MQ-9 program will continue to support other payload and capability development activities funded in other Program Elements (e.g. SIGINT, communications, electronic attack (EA), Broad Area Surveillance leveraging Gorgon

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0205219F: *MQ-9 Development and Fielding*

Stare Quick Reaction Capability, advanced Counter-Improvised Explosive Device (C-IED), missile defense, and other sensors and weapons) and address reliability, maintainability, sustainability, and safety issues. Activities also include trade studies, analyses, preliminary systems engineering, system and subsystem level testing in accordance with DoD and military standards, and specification development in support of both current program planning and execution, and studies supporting analysis and investment in future program planning.

The GCS, common with the MQ-1 Predator, functions as the aircraft cockpit and can control the aircraft either within line-of-sight (LOS) or beyond LOS (BLOS) via a combination of satellite relay and terrestrial communications. The GCS is either mobile to support forward operating locations or fixed at a facility to support Remote Split Operations (RSO). The GCS has the capability to perform mission planning; provides a means for manual control; allows personnel to launch, recover, and monitor aircraft, payloads, and system communications status; incorporates secure data links to send aircraft and payload commands and receive system telemetry and payload data; monitors threats to the aircraft; displays the common operational picture; and provides support functions. Launch and Recovery GCS (LRGCS) allow for servicing, systems checks, maintenance, launch and recovery of aircraft under LOS control for hand-off to a mobile or fixed facility GCS, and conducting operations within line-of-sight range of the LRGCS. Beginning in FY12 there is funding to acclerate development of a Multiple Aircraft Control (MAC) GCS capability. GCS upgrades will be developed and fielded in coordination with improvements to MQ-9 aircraft capabilities and in response to evolving operational and information assurance/certification and accreditation requirements. Key future efforts will also include Block 30 GCS upgrades that add new LINUX processors, high definition monitors, ergonomic improvements and Block 50 GCS upgrades that integrate improved human-machine interfaces, open systems architecture, and improved crew habitability. This program will participate in studies, analyses, development, testing, and implementation of future Remotely Piloted Aircraft (RPA) systems and various standards to pursue joint, Allied, and coalition interoperability.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	93.145	125.427	128.065	-	128.065
Current President's Budget	104.162	125.427	146.824	-	146.824
Total Adjustments	11.017	-	18.759	-	18.759
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-0.383	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	11.400	-	18.759	-	18.759

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0205219F: *MQ-9 Development and Fielding*

Change Summary Explanation

The increase in funding in FY12 is primarily due to project initiation for: Counter IED development, Multiple Aircraft Control (MAC) GCS development, and Exportable MQ-9 development.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205219F: *MQ-9 Development and Fielding*	PROJECT 675246: *MQ-9 Development and Fielding*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675246: *MQ-9 Development and Fielding*	104.162	125.427	146.824	-	146.824	110.982	64.295	34.752	27.109	Continuing	Continuing
Quantity of RDT&E Articles	2	0	0	0	0	0	0	0	0		

Note

FY10 funding totals include $11.4M appropriated for Overseas Contingency Operations.

The "to complete" funding estimate is "Continuing".

Totals include funding for the PRCP Program Number 424, MQ-9 Reaper.

The program funding includes reductions for Overhead Reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.742M in FY12.

A. Mission Description and Budget Item Justification

The basic MQ-9 Reaper system consists of the aircraft, sensors, a ground control station (GCS), communications equipment, weapon kits, support equipment, simulator and training devices, Readiness Spares Packages (RSP), technical data/training, and personnel required to operate, maintain, and sustain the system. The system is designed to be modular and open-ended. Mission-specific equipment is employed in a 'plug-and-play' mission kit concept allowing specific aircraft and control station configurations to be tailored to fit mission needs.

The MQ-9 Reaper aircraft is a single-engine, turbo-prop remotely piloted aircraft (RPA) designed to operate over-the-horizon at medium-to-high altitude for long endurance sorties. The aircraft is designed primarily to prosecute critical, emerging Time-Sensitive-Targets (TSTs) as a radar, Electro-optical/Infrared (EO/IR), and laser designator-based attack asset with on-board hard-kill capability (hunter-killer). It also performs Intelligence, Surveillance, Reconnaissance and Target Acquisition (ISR TA). In the hunter-killer role, the aircraft employs fused multi-spectral sensors to find, fix, and track ground targets (Automatic Target Cueing (ATC), Target Location Accuracy (TLA), Metric Sensor and other capabilities), and assesses post-strike results. The MQ-9 system is continuing to develop and field capability through incremental upgrades. Two test aircraft were purchased in FY10 to support development and test activity. Future developmental capabilities include increasing the maximum gross takeoff weight capability of the aircraft; automatic takeoff and landing capability (ATLC); enhancing aircraft systems to include integrated redundant avionics; modifying the system to include provisions for a Foreign Military Sale exportable version of the weapon system; Predator Primary Data Link (PPDL) communication system upgrades and communications upgrades to include data link encryption and Ka frequency migration; navigation system upgrades; electrical system upgrades; airframe and airframe system improvements; propulsion system improvements; secure voice and data communications, including SATCOM, upgrades; sensor/stores management computer improvement; MIL-STD-1760 advanced weapons data bus; Universal Armament Interface and Miniature Munitions/Store Interface; advanced sensor and weapon payloads; improved human-machine interface (HMI); integrating precision weapons (e.g. AGM-114 Hellfire missile, GBU-12/38/49 guided bombs, and Small Diameter Bomb variants); Mode 5 / Automatic Dependent Surveillance - Broadcast (ADS-B)

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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integration; hardware and software upgrades to the ground control station for MQ-9 operations; completing airworthiness certification; weapons system certification and accreditation; and producing applicable training devices that emulate weapon system capabilities. The MQ-9 program will continue to support other payload and capability development activities funded in other Program Elements (e.g. SIGINT, communications, electronic attack (EA), Broad Area Surveillance leveraging Gorgon Stare Quick Reaction Capability, advanced Counter-Improvised Explosive Device (C-IED), missile defense, and other sensors and weapons) and address reliability, maintainability, sustainability, and safety issues. Activities also include trade studies, analyses, preliminary systems engineering, system and subsystem level testing in accordance with DoD and military standards, and specification development in support of both current program planning and execution, and studies supporting analysis and investment in future program planning.

The GCS, common with the MQ-1 Predator, functions as the aircraft cockpit and can control the aircraft either within line-of-sight (LOS) or beyond LOS (BLOS) via a combination of satellite relay and terrestrial communications. The GCS is either mobile to support forward operating locations or fixed at a facility to support Remote Split Operations (RSO). The GCS has the capability to perform mission planning; provides a means for manual control; allows personnel to launch, recover, and monitor aircraft, payloads, and system communications status; incorporates secure data links to send aircraft and payload commands and receive system telemetry and payload data; monitors threats to the aircraft; displays the common operational picture; and provides support functions. Launch and Recovery GCS (LRGCS) allow for servicing, systems checks, maintenance, launch and recovery of aircraft under LOS control for hand-off to a mobile or fixed facility GCS, and conducting operations within line-of-sight range of the LRGCS. Beginning in FY12 there is funding to acclerate development of a Multiple Aircraft Control (MAC) GCS capability. GCS upgrades will be developed and fielded in coordination with improvements to MQ-9 aircraft capabilities and in response to evolving operational and information assurance/certification and accreditation requirements. Key future efforts will also include Block 30 GCS upgrades that add new LINUX processors, high definition monitors, ergonomic improvements and Block 50 GCS upgrades that integrate improved human-machine interfaces, open systems architecture, and improved crew habitability. This program will participate in studies, analyses, development, testing, and implementation of future Remotely Piloted Aircraft (RPA) systems and various standards to pursue joint, Allied, and coalition interoperability.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: MQ-9 System Development and Demonstration (SDD) - Interim Combat Capability (ICC)	1.746	-	-	-	-
Description: Initial Weaponization of MQ-9					
FY 2010 Accomplishments: Completed testing and final delivery of training data					
FY 2011 Plans:					
FY 2012 Base Plans:					
FY 2012 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205219F: *MQ-9 Development and Fielding*	PROJECT 675246: *MQ-9 Development and Fielding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: MQ-9 System Development and Demonstration (SDD) - Increment 1 ***Description:*** Development to meet MQ-9 Capabilities Production Document (CPD) requirement ***FY 2010 Accomplishments:*** Continued Air Worthiness, Software Updates, Weapons Development, Productization Tasks and Functional Configuration Audits ***FY 2011 Plans:*** Completes Air Worthiness, Software Updates, Weapons Development efforts ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***	13.796	0.800	-	-	-
Title: MQ-9 System Development and Demonstration (SDD) - Bridge ***Description:*** Complete development to meet MQ-9 Capabilities Production Document (CPD) requirements ***FY 2010 Accomplishments:*** Continued High capacity starter / generator, encrypted data links, digital architecture, heavyweight landing gear, environmental testing, modular sensor integration, upgrades Stores Management System and MIL-STD to all stations. Completed development, integration, test and productization of field and depot prototypes. ***FY 2011 Plans:*** Continuation of FY10 efforts plus high definition sensor capability including Target Location Accuracy Integration. ***FY 2012 Base Plans:*** Continuation of FY10 and FY11 efforts including high definition sensor capability and Target Location Accuracy Integration. ***FY 2012 OCO Plans:***	20.628	35.237	34.189	-	34.189
Title: Ground Control Station (GCS) Development ***Description:*** Develop Ground Control Station (GCS) capabilities. Major capabilities include open system architecture, multi-level security and ergonomic cockpit design. ***FY 2010 Accomplishments:***	24.527	33.076	14.644	-	14.644

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205219F: *MQ-9 Development and Fielding*	PROJECT 675246: *MQ-9 Development and Fielding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Completed GCS Block 30 and initiated Block 50 GCS development including Block 50 System Integration Lab (SIL)and preliminary testing. ***FY 2011 Plans:*** Continuation of GCS Block 50 development and System Integration Lab (SIL)effort. ***FY 2012 Base Plans:*** Continuation of GCS Block 50 development ***FY 2012 OCO Plans:***					
Title: MQ-9 Electro-Optic / Infrared (EO/IR) Sensor ***Description:*** Developed improved MTS-B modes and capability including all digital high-definition (HD) camera formats and Target Location Accuracy (TLA) improvements to improve imagery performance (definition and color) and to support future use of coordinate seeking weapons. ***FY 2010 Accomplishments:*** Continued High Definition and Target Location Accuracy improvements for EO/IR sensor ***FY 2011 Plans:*** Continuation of High Definition and Target Location Accuracy improvements for EO/IR sensor ***FY 2012 Base Plans:*** Continues High Definition and Target Location Accuracy improvements for EO/IR sensor ***FY 2012 OCO Plans:***	9.593	19.557	30.806	-	30.806
Title: Other Government Costs (OGC) ***Description:*** Other Government Costs including urgent services, engineering change orders, program office support, studies and general research ***FY 2010 Accomplishments:*** Continued OGC costs ***FY 2011 Plans:***	5.404	7.355	8.130	-	8.130

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205219F: *MQ-9 Development and Fielding*	PROJECT 675246: *MQ-9 Development and Fielding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continued OGC costs ***FY 2012 Base Plans:*** Continuation of OGC costs ***FY 2012 OCO Plans:***					
Title: Operator Simulator ***Description:*** Develop operator simulators for training ***FY 2010 Accomplishments:*** Updates to keep Operator Simulator current with upgrades to aircraft and Ground Control Station ***FY 2011 Plans:*** Develops updates to keep Operator Simulator current with upgrades to aircraft and Ground Control Station ***FY 2012 Base Plans:*** Develops updates to keep Operator Simulator current with upgrades to aircraft and Ground Station ***FY 2012 OCO Plans:***	4.396	7.318	2.136	-	2.136
Title: Synthetic Aperture Radar (SAR) Enhancements ***Description:*** Improvements in MQ-9 capability to disseminate SAR data, improve Ground Moving Target Indicator (GMTI) tracking, automation of data exploitation via Continuous Look Attack Management for Predator (CLAMP) and classification of 3-D targeting ***FY 2010 Accomplishments:*** Improvements in MQ-9 capability to disseminate SAR data, improve Ground Moving Target Indicator (GMTI) tracking, automation of data exploitation via Continuous Look Attack Management for Predator (CLAMP) and classification of 3-D targeting ***FY 2011 Plans:*** Continuation of FY10 activities and Lynx SAR Dual Beam Development. ***FY 2012 Base Plans:***	3.997	12.000	4.000	-	4.000

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continuation of FY11 efforts ***FY 2012 OCO Plans:***					
Title: Test Support ***Description:*** Various MQ-9 testing activities such as flight testing including range time, controlled airspace, frequency management, project management and on-site facilities. Other testing activities include Joint Integrated Test Command (JITC) support and Edwards acceptance testing support. ***FY 2010 Accomplishments:*** Continuation of test support ***FY 2011 Plans:*** Continuation of test support ***FY 2012 Base Plans:*** Continuation of test support ***FY 2012 OCO Plans:***	1.107	2.618	3.931	-	3.931
Title: Communications ***Description:*** Develop MQ-9 communication capabilities including encrypted Line of Sight (LOS) data links to ROVER terminals (VORTEX) and beyond LOS military SATCOM usage. ***FY 2010 Accomplishments:*** Developed VORTEX capabilities ***FY 2011 Plans:*** Completed VORTEX Line-of-Sight (LOS) development, continued PPDL LOS and Beyond-Line-of-Sight communication capabilities development and started Ka capability development. ***FY 2012 Base Plans:*** Continued development of communication capabilities ***FY 2012 OCO Plans:***	2.800	7.466	15.488	-	15.488
Title: Test Aircraft	16.168	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Procures two test aircraft ***FY 2010 Accomplishments:*** Deliverd two RDT&E test aircraft including full MTS-B sensor equipment and Hellfire launchers / rails ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***					
Title: Counter-IED Development and Demonstration ***Description:*** Adding "Step Stare" mode capability to the MTS-B EO/IR sensors; also includes associated GCS development and testing. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** Will develop/modify sensor to add "Step Stare" mode capability to the MTS-B EO/IR sensors; also includes associated GCS development and testing. ***FY 2012 OCO Plans:***	-	-	14.500	-	14.500
Title: MAC ***Description:*** Develop Multi Aircraft Control capability - GCS ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** Will develop Multi Aircraft Control capability - GCS ***FY 2012 OCO Plans:***	-	-	4.000	-	4.000
Title: Export MQ-9	-	-	15.000	-	15.000

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0205219F: *MQ-9 Development and Fielding*	**PROJECT** 675246: *MQ-9 Development and Fielding*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Develop Exportable Version of MQ-9 ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** Will develop Exportable Version of MQ-9 Weapon System. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	104.162	125.427	146.824	-	146.824

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• APAF: *PE 0205219F, MQ-9 UAV*	573.845	1,016.217	1,185.605	0.000	1,185.605	1,378.759	1,211.367	1,212.229	1,025.126	Continuing	Continuing
• OPAF: *PE 0205219F, MQ-9 UAV*	0.000	0.000	4.417	0.000	4.417	0.000	0.000	0.000	0.000	Continuing	Continuing
• RDT&E AF: *PE 0305219F, Predator Development/Fielding*	9.877	3.500	1.977	0.000	1.977	0.000	0.000	0.000	0.000	Continuing	Continuing
• RDT&E AF (3): *PE 0305206F, Airborne Reconnaisance Systems*	45.984	31.833	16.047	0.000	16.047	16.328	13.040	16.419	17.408	Continuing	Continuing
• APAF (4): *PE 0305206F, Airborne Reconnaisance Systems*	19.600	160.400	74.900	0.000	74.900	106.200	112.400	76.800	81.700	Continuing	Continuing
• RDT&E AF (5): *PE 034260F, Airborne SIGINT Enterprise*	32.630	29.757	37.874	0.000	37.874	35.274	32.270	31.245	40.171	Continuing	Continuing
• RDT&E AF (6): *PE 0604429F, Airborne Electronic Attack*	0.000	0.000	0.000	0.000	0.000	7.500	0.000	0.000	0.000	Continuing	Continuing
• APAF (7): *PE 0604429F, Airborne Electronic Attack*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.000	8.300	Continuing	Continuing

D. Acquisition Strategy

The MQ-9 Reaper system will be acquired via sole-source contracts with General Atomics-ASI, L3Comm, and Raytheon as the prime contractors. GA-ASI is the prime contractor for aircraft and ground control stations. L3Comm is the prime contractor for Predator Satellite Link. Raytheon is the prime contractor for the MTS-B EO/IR sensor system.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205219F: *MQ-9 Development and Fielding*	PROJECT 675246: *MQ-9 Development and Fielding*

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205219F: *MQ-9 Development and Fielding*	PROJECT 675246: *MQ-9 Development and Fielding*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MQ-9 System Development and Demonstration (SDD) - Interim Combat Capability (ICC)	SS/CPFF	GA-ASI:Poway, CA	85.683	-		-		-		-	0.000	85.683	85.683
MQ-9 System Development and Demonstration (SDD) - Increment 1	SS/CPIF	GA-ASI:Poway, CA	90.338	0.800	Dec 2010	-		-		-	0.000	91.138	91.138
MQ-9 System Development and Demonstration (SDD) - Bridge	SS/CPIF	GA-ASI:Poway, CA	29.821	35.237	Oct 2010	34.189	Oct 2011	-		34.189	16.200	115.447	111.076
Ground Control Station (GCS) Development	SS/Various	GA-ASI:Poway, CA	24.790	33.076	Feb 2011	14.645	Oct 2011	-		14.645	11.915	84.426	TBD
MQ-9 Electro-Optical / Infrared (EO/IR) Sensor	SS/Various	Raytheon:McKinney, TX	22.255	19.557	May 2011	30.806	Oct 2011	-		30.806	25.562	98.180	TBD
Operator Simulator	SS/CPIF	L3 Comm:Salt Lake City, UT	15.030	7.318	Feb 2011	2.136	Oct 2011	-		2.136	Continuing	Continuing	TBD
Synthetic Aperture Radar (SAR) Enhancements	SS/CPFF	GA-RSG:Poway, CA	10.861	12.000	Mar 2011	4.000	Oct 2011	-		4.000	Continuing	Continuing	TBD
Communication	SS/CPFF	GA-ASI:Poway, CA	3.800	7.466	Oct 2010	15.487	Oct 2011	-		15.487	8.300	35.053	TBD
Counter-IED Development and Demonstration	Various	TBD:TBD,	-	-		14.500	Mar 2012	-		14.500	0.000	14.500	0.000
MAC	SS/CPFF	GA-ASI:Poway, CA	-	-		4.000	Aug 2012	-		4.000	Continuing	Continuing	TBD
Exportable MQ-9	SS/CPFF	GA-ASI:Poway, CA	-	-		15.000	Dec 2012	-		15.000	Continuing	Continuing	TBD
		Subtotal	282.578	115.454		134.763		-		134.763			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Services	Various	Various:,	16.320	1.301	Oct 2010	0.923	Oct 2011	-		0.923	Continuing	Continuing	TBD
		Subtotal	16.320	1.301		0.923		-		0.923			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205219F: *MQ-9 Development and Fielding*	PROJECT 675246: *MQ-9 Development and Fielding*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	Various	Various:,	9.247	2.618	Oct 2010	3.931	Oct 2011	-		3.931	Continuing	Continuing	TBD
Test Aircraft	Various	Various:,	16.168	-		-		-		-	0.000	16.168	16.168
		Subtotal	25.415	2.618		3.931		-		3.931			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Services	Various	Various:,	9.321	6.054	Oct 2010	7.207	Oct 2011	-		7.207	Continuing	Continuing	TBD
		Subtotal	9.321	6.054		7.207		-		7.207			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	333.634	125.427		146.824		-		146.824			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205219F: *MQ-9 Development and Fielding*	PROJECT 675246: *MQ-9 Development and Fielding*

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U.S. AIR FORCE

MQ-9 Reaper Program Schedule

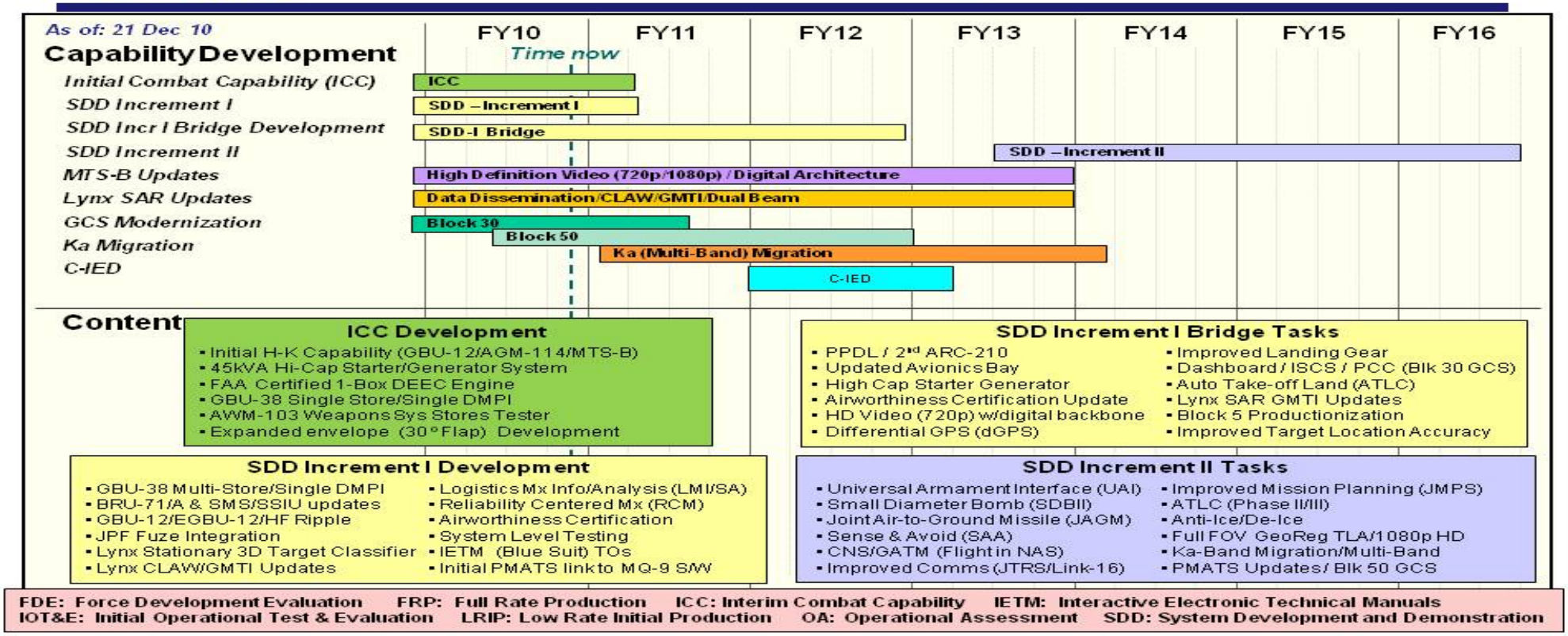

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0205219F: *MQ-9 Development and Fielding*	**PROJECT** 675246: *MQ-9 Development and Fielding*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Initial Combat Capability (ICC)	1	2010	2	2011
SDD - Increment 1	1	2010	2	2011
SDD - Increment 1 Bridge	1	2010	4	2012
SDD - Increment 2	3	2013	3	2016
MTS-B Updates	1	2010	4	2013
Lynx SAR Updates	1	2010	4	2013
Ground Control Station (GCS) Modernization	1	2010	4	2012
Ka Migration	4	2011	1	2015
C-IED	1	2012	1	2013

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*						R-1 ITEM NOMENCLATURE PE 0207040F: *Multi-Platform Electronics*					
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	14.370	15.574	-	-	-	-	-	-	-	Continuing	Continuing
675310: *EA Pod DRFM Upgrade*	14.370	15.574	-	-	-	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

Overall, the PE funds on-going sustainment, maintenance, and upgrade of Multi-Platform Electronic Attack (EA) jamming pods and associated combat test equipment as well as sustainment of various other Electronic Warfare equipment. Specifically, this program provides procurement, research and development, and operations and maintenance for sustaining the ALQ-131 and ALQ-184 EA jamming pods. These pods are the sole self-protection jamming systems for US Air Force A-10 aircraft and most models of the F-16 aircraft. This upgrade to the ALQ-131 is necessary to keep pace with adversary technological advances in surface-to-air and air-to-air missile systems. Digital Radio Frequency Memory (DRFM) allows an electronic system to digitally record and store characteristics of received signals in order to produce a jamming pulse that more precisely replicates the threat systems pulse. With the current/near term threat systems the A-10 and F-16 are likely to encounter, this level of fidelity is necessary to effectively protect these aircraft in this increasingly lethal environment. This PE is in Budget Activity 7 - Operational System Development because it supports upgrade development of the ALQ-131, a fielded system.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	14.747	15.574	-	-	-
Current President's Budget	14.370	15.574	-	-	-
Total Adjustments	-0.377	-	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.377	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207040F: *Multi-Platform Electronics*	PROJECT 675310: *EA Pod DRFM Upgrade*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675310: *EA Pod DRFM Upgrade*	14.370	15.574	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Overall, the PE funds on-going sustainment, maintenance, and upgrade of Multi-Platform Electronic Attack (EA) jamming pods and associated combat test equipment as well as sustainment of various other Electronic Warfare equipment. Specifically, this program provides procurement, research and development, and operations and maintenance for sustaining the ALQ-131 and ALQ-184 EA jamming pods. These pods are the sole self-protection jamming systems for US Air Force A-10 aircraft and most models of the F-16 aircraft. This upgrade to the ALQ-131 is necessary to keep pace with adversary technological advances in surface-to-air and air-to-air missile systems. Digital Radio Frequency Memory (DRFM) allows an electronic system to digitally record and store characteristics of received signals in order to produce a jamming pulse that more precisely replicates the threat systems pulse. With the current/near term threat systems the A-10 and F-16 are likely to encounter, this level of fidelity is necessary to effectively protect these aircraft in this increasingly lethal environment. This PE is in Budget Activity 7 - Operational System Development because it supports upgrade development of the ALQ-131, a fielded system.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: ALQ-131 Upgrade	14.370	15.574	-	-	-
Description: ALQ-131 DRFM SDD ***FY 2010 Accomplishments:*** Continuation of above listed activities ***FY 2011 Plans:*** Continue development of ALQ-131 updgrade. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:*** Not Applicable.					
Accomplishments/Planned Programs Subtotals	14.370	15.574	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207040F: *Multi-Platform Electronics*	PROJECT 675310: *EA Pod DRFM Upgrade*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

All major contracts within this project will be awarded through full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207040F: *Multi-Platform Electronics*	PROJECT 675310: *EA Pod DRFM Upgrade*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Robins AFB	TBD	TBD:TBD,	9.747	15.574		-		-		-	Continuing	Continuing	18.000
		Subtotal	9.747	15.574		-		-		-			18.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Robins AFB	TBD	TBD:TBD	5.000	-		-		-		-	0.000	5.000	13.000
		Subtotal	5.000	-		-		-		-	0.000	5.000	13.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.747	15.574		-		-		-			31.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207040F: *Multi-Platform Electronics*	PROJECT 675310: *EA Pod DRFM Upgrade*

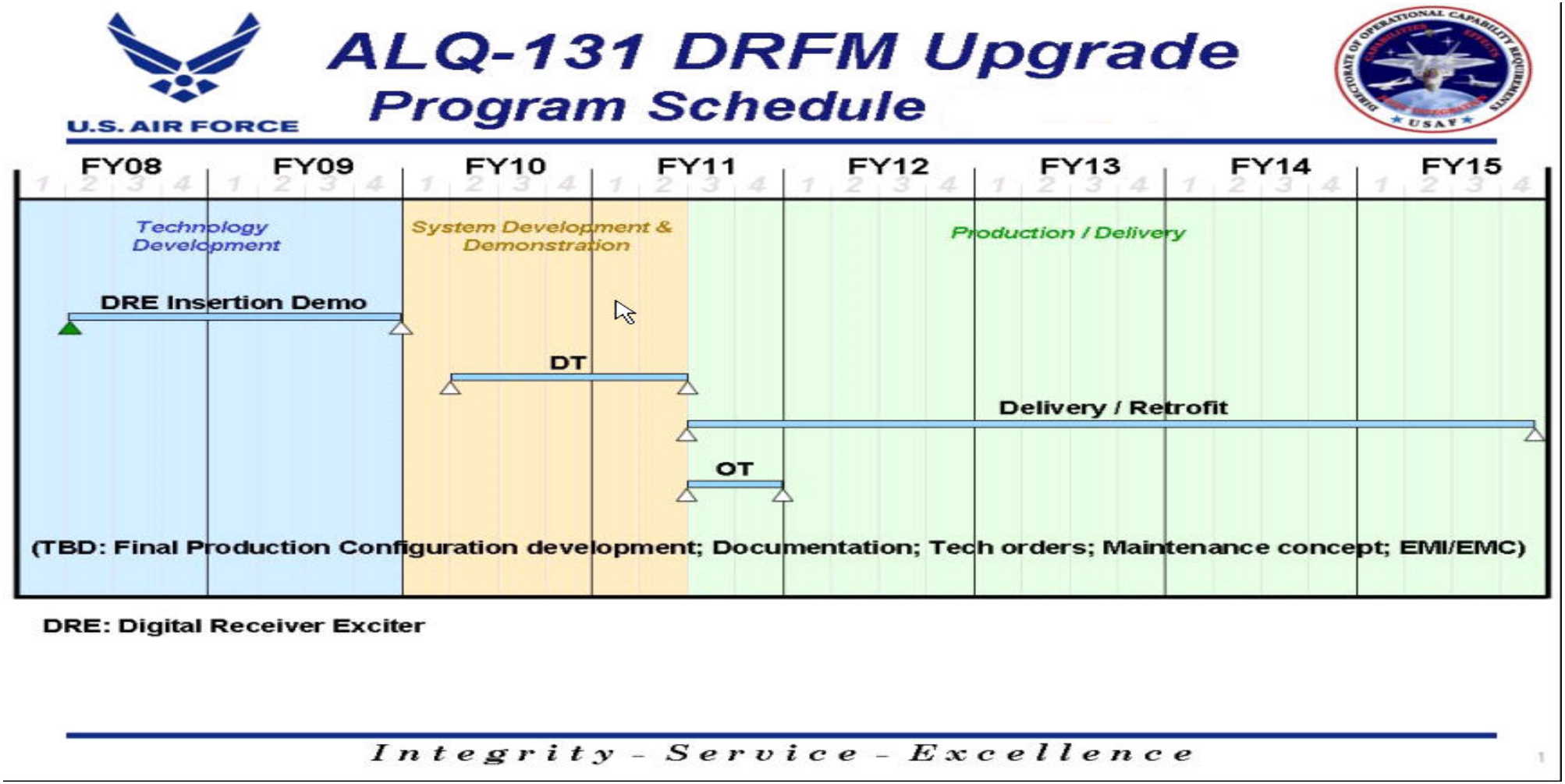

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207040F: *Multi-Platform Electronics*	PROJECT 675310: *EA Pod DRFM Upgrade*

Schedule Details

	Start		End	
Events	Quarter	Year	Quarter	Year
Developmental Testing	1	2010	3	2011
Operational Testing	2	2010	4	2011
Delivery and Retrofit of Pods Start	2	2010	4	2012

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207131F: *A-10 SQUADRONS*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	11.878	5.661	11.051	-	11.051	13.403	13.340	13.052	13.185	Continuing	Continuing
674809: *A-10 Squadrons*	11.878	5.661	11.051	-	11.051	13.403	13.340	13.052	13.185	Continuing	Continuing

A. Mission Description and Budget Item Justification

The concept of operations for the A-10 requires an agile and survivable weapon system that provides close-air support, combat search and rescue, and special operations support. The high operations tempo maintained by the Expeditionary Air Force requires that each combat platform exhibit the flexibility to effectively perform in a variety of operational roles. To implement these strategies, Combat Air Forces (CAF) must be able to conduct air operations around-the-clock under various weather conditions against numerous enemy threats employing a full spectrum of air defense systems to include countermeasures. The A-10 is an essential component of successful air operations, and represents a significant percentage of the CAF force structure with 346 aircraft currently in service (plus one ground training aircraft). FY 2012 RDT&E funds address continuing user requirements that need to be incorporated within the Operational Flight Program (OFP). Each year user developmental requirements are formally reviewed for incorporation in the annual aircraft OFP release cycle to bring new capability to the A-10 and to fix both hardware and software OFP deficiencies. Final integration of hardware and software requirements into a unified release occurs only after rigorous testing, including validation and verification using software integration laboratories, field representative assets, and production representative assets. Results of previously planned developmental and modernization actions provide the A-10 with new combat capabilities that employ a variety of smart weapons, improved situational awareness, increased service life to the wing and fuselage, and enhanced target identification and designation capability. The funds budgeted in the near term will provide updates to the aircraft OFP in Suites 7 and 8 and will address continued integration of Mode 5, LARS V12, and Helmet Mounted Cuing System (HMCS). Ongoing planning and associated activities will continue to take place to prevent and overcome diminishing manufacturing sources and obsolescence issues as required.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**
Previous President's Budget	12.197	5.661	5.750	-	5.750
Current President's Budget	11.878	5.661	11.051	-	11.051
Total Adjustments	-0.319	-	5.301	-	5.301
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.319	-	5.301	-	5.301

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207131F: *A-10 SQUADRONS*

Congressional Add Details ($ in Millions, and Includes General Reductions)

	FY 2010	FY 2011
Project: 674809: *A-10 Squadrons*		
Congressional Add: *CAD/CAM Aircraft Structural Overhaul Workcenter*	2.490	-
Congressional Add Subtotals for Project: 674809	2.490	-
Congressional Add Totals for all Projects	2.490	-

Change Summary Explanation

FY12 funding increase for OFP updating.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207131F: *A-10 SQUADRONS*	PROJECT 674809: *A-10 Squadrons*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674809: *A-10 Squadrons*	11.878	5.661	11.051	-	11.051	13.403	13.340	13.052	13.185	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $.777M in FY12.

A. Mission Description and Budget Item Justification

The concept of operations for the A-10 requires an agile and survivable weapon system that provides close-air support, combat search and rescue, and special operations support. The high operations tempo maintained by the Expeditionary Air Force requires that each combat platform exhibit the flexibility to effectively perform in a variety of operational roles. To implement these strategies, Combat Air Forces (CAF) must be able to conduct air operations around-the-clock under various weather conditions against numerous enemy threats employing a full spectrum of air defense systems to include countermeasures. The A-10 is an essential component of successful air operations, and represents a significant percentage of the CAF force structure with 346 aircraft currently in service (plus one ground training aircraft). FY 2012 RDT&E funds address continuing user requirements that need to be incorporated within the Operational Flight Program (OFP). Each year user developmental requirements are formally reviewed for incorporation in the annual aircraft OFP release cycle to bring new capability to the A-10 and to fix both hardware and software OFP deficiencies. Final integration of hardware and software requirements into a unified release occurs only after rigorous testing, including validation and verification using software integration laboratories, field representative assets, and production representative assets. Results of previously planned developmental and modernization actions provide the A-10 with new combat capabilities that employ a variety of smart weapons, improved situational awareness, increased service life to the wing and fuselage, and enhanced target identification and designation capability. The funds budgeted in the near term will provide updates to the aircraft OFP in Suites 7 and 8 and will address continued integration of Mode 5, LARS V12, and Helmet Mounted Cuing System (HMCS). Ongoing planning and associated activities will continue to take place to prevent and overcome diminishing manufacturing sources and obsolescence issues as required.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Mode 5	2.661	-	-	-	-
Description: Integration of Mode 5 (Identify Friend or Foe) capability into A-10 fleet					
FY 2010 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207131F: *A-10 SQUADRONS*	PROJECT 674809: *A-10 Squadrons*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
The remaining APX-119 transponders, 27 each, will be purchased. The purchase will support the A-10 IFF upgrade to Mode S capability. In addition, technical orders and engineering data will be developed in support of the Mode 5 upgrade to the transponders. Remaining funds will be used to the Mode 5 upgrade to be installed on existing Mode S units. ***FY 2011 Plans:*** Not applicable. ***FY 2012 Base Plans:*** Not applicable ***FY 2012 OCO Plans:***					
Title: OFP Development ***Description:*** A-10C OFP Suite software is updated in an annual release cycle to permit rapid integration of new precision weapons, advanced targeting pods, improved avionics, and enhanced EW capabilities. These efforts are frequently in response to Urgent Operational Needs and evolving mission needs generated by the ever-changing operational environment of close air support ***FY 2010 Accomplishments:*** A-10C Operational Flight program (OFP) software is updated in an annual release cycle to permit rapid integration and test of new/updated systems (i.e., precision weapons, targeting pods, avionics, and electronic warfare capabilities). These efforts are in response to Urgent Operational Needs and respond to the evolving operational mission needs for the A-10C close air support role. A significant FY10 addition is the test and evaluation of the Helmet Mounted Cuing System (HMCS) in response to a COCOM-declared UON. ***FY 2011 Plans:*** A-10C OFP software is updated in an annual release cycle to permit rapid integration and test of new/updated systems (i.e., precision weapons, targeting pods, avionics, and electronic warfare capabilities). These efforts are in response to Urgent Operational Needs and respond to the evolving operational mission needs for the A-10C close air support role. A significant FY11 addition is the fielding of HMCS and the test and evaluation of the Lightweight Airborne Radio System (LARS) (AN/ARS-6 V12) called LARSV12 in response to DMSMS issues with LARSv6, plus the added Combatant Survivor Evader Locator (CSEL) capability potential of the LARSV12. ***FY 2012 Base Plans:***	6.727	5.661	11.051	-	11.051

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207131F: *A-10 SQUADRONS*	PROJECT 674809: *A-10 Squadrons*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
A-10C OFP software is updated in an annual release cycle to permit rapid integration and test of new/updated systems (i.e., precision weapons, targeting pods, avionics, and electronic warfare capabilities). These efforts are often in response to Urgent Operational Needs and respond to the evolving operational mission needs for the A-10C close air support role. A significant FY12 addition is the fielding of LARSV12 and the test, evaluation, and integration of the Mode 5 radio Identify Friend or Foe (IFF) capability into the A-10C OFP. This is in response to a DoD mandate for Initial Operational Capability (IOC) capability being fielded in the A-10C by FY14.					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	9.388	5.661	11.051	-	11.051

	FY 2010	FY 2011
Congressional Add: CAD/CAM Aircraft Structural Overhaul Workcenter	2.490	-
FY 2010 Accomplishments: A government-industry team will develop new repair procedures utilizing CAD/CAM technology. The program will build upon a successful exploratory program for B-52 engine structural overhaul to enable Hill Air Force Base (AFB) A-10 System Program Office(SPO) and Mission Support, Inc (MSI) to identify existing structural overhaul requirements for the A-10 that have extensive tooling requirements or are experiencing delays associated with tooling availability.		
FY 2011 Plans:		
Congressional Adds Subtotals	2.490	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207131F: *A-10 Squadrons, APAF*	252.788	181.181	152.454	0.000	152.454	151.434	134.537	0.000	0.000	Continuing	Continuing
	8.921	0.680	0.674	0.000	0.674	0.000	0.000	0.000	0.000	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207131F: *A-10 SQUADRONS*	PROJECT 674809: *A-10 Squadrons*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207445F: *Fighter Tactical Data Link, APAF*											

D. Acquisition Strategy

Helmet Mounted Cuing System (HMCS) acquisition strategy was developed to support Air National Gaurd (ANG) and Air Force Reserve A-10 funded requirements. The Request for Proposal was released to industry September 2009. Source selection was completed and contract awarded in April 2010 using NGREA funding. Contracted effort includes the Congressional Add of RDT&E funds for HMCS integration.

Computer Aided Design/Computer Aided Manufacture (CAD/CAM) Aircraft Structural Overhaul Work Center acquisition strategy is to award a sole source Small Business Set-Aside contract to Mission Support, Inc. The contract will describe the requirements for identifying existing structural overhaul activities for the A-10 that need tooling developed. Expedited tooling development will reduce production delays during parts remanufacturing and thus improve aircraft overhaul throughput and availability.

MODE 5 acquisition strategy is being developed to meet Air Force directives.

Prior to FY 2009, A-10 operational flight program (OFP)development efforts were conducted under the A-10 Prime Contract awarded to Lockheed Martin Systems Integration (LMSI) in December 1997 through a full-and-open competition. The original period of performance/ordering period ended in December 2006. A new Thunderbolt Lifecycle Program Support(TLPS)contract was awarded to three sucessful bidders in 2009.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207131F: *A-10 SQUADRONS*	PROJECT 674809: *A-10 Squadrons*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Precision Engagement Development	SS/CPIF	Lockheed Martin Sys Integration:Owego, NY	130.227	-		-		-		-	0.000	130.227	0.000
Helmet Mounted Cueing System	C/Various	Ratheon:Indianapolis, IN	3.989	-		-		-		-	0.000	3.989	0.000
Mode 5 (IFF)	TBD	TBD:TBD,	2.970	-		-		-		-	0.000	2.970	0.000
OFP Development (LMSI)	SS/Various	LMSI:Owego NY,	3.159	2.261	Nov 2010	4.534	Nov 2011	-		4.534	Continuing	Continuing	0.000
OFP Development (TLPS)	TBD	TBD:TBD,	-	-	Dec 2010	-	Dec 2011	-		-	Continuing	Continuing	0.000
CAD/CAM Aircraft Structural Overhaul Work Center	SS/TBD	Mission Support, Inc:Clearfield, UT	2.500	-		-		-		-	0.000	2.500	0.000
		Subtotal	142.845	2.261		4.534		-		4.534			0.000

Remarks

A-10 Program office has researched the market and cannot justify award of a sole source contract for CAD/CAM Aircraft Structural Overhaul Work Center to Mission Support, Inc in compliance with the Congressional mark, therefore, no award date is provided.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
USAF (Multiple)	Various	Various:Various,	0.974	0.531	Nov 2010	1.162	Nov 2011	-		1.162	Continuing	Continuing	0.000
		Subtotal	0.974	0.531		1.162		-		1.162			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
USAF (OFP)	TBD	TBD:TBD,	3.593	1.754		3.602		-		3.602	0.000	8.949	0.000
		Subtotal	3.593	1.754		3.602		-		3.602	0.000	8.949	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207131F: *A-10 SQUADRONS*	PROJECT 674809: *A-10 Squadrons*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	Various	Various:,	2.256	1.115		1.753		-		1.753	0.000	5.124	0.000
		Subtotal	2.256	1.115		1.753		-		1.753	0.000	5.124	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	149.668	5.661		11.051		-		11.051			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207131F: *A-10 SQUADRONS*	PROJECT 674809: *A-10 Squadrons*

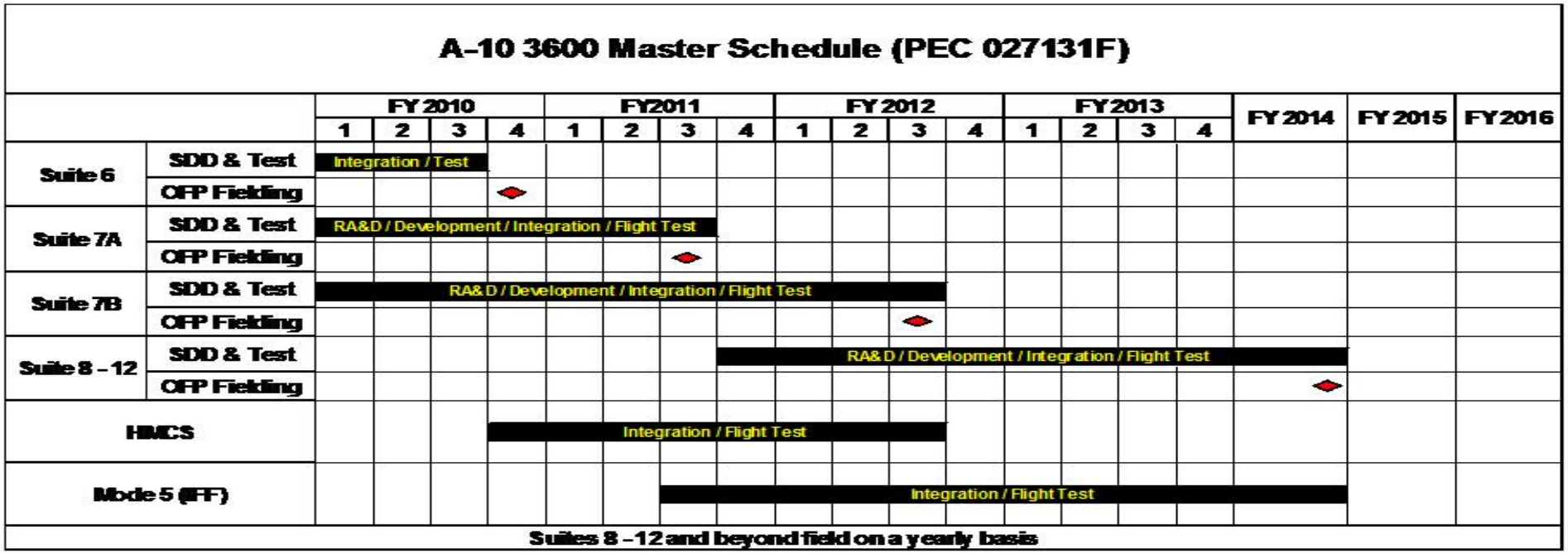

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207131F: *A-10 SQUADRONS*	**PROJECT** 674809: *A-10 Squadrons*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Suite 6 OFP Fields	4	2010	4	2010
Suite 7A OFP System Design, Develoment & Flight Test	1	2010	3	2011
Suite 7A Fields	3	2011	3	2011
Suite 7B OFP Design, Development & Flight Test	1	2010	3	2012
Suite 7B Fields	3	2012	3	2012
Mode 5 (IFF) Integration	3	2011	4	2014
Helmet Mounted Cueing System	4	2010	3	2012
Suite 8 - 12 OFP System Design, Develoment & Flight Test	4	2011	3	2013
Suite 8 OFP Fields	4	2014	4	2014

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207133F: *F-16 SQUADRONS*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	118.512	129.103	143.869	-	143.869	117.181	117.570	121.111	137.010	Continuing	Continuing
672671: *F-16 Squadrons*	118.512	129.103	143.869	-	143.869	117.181	117.570	121.111	137.010	Continuing	Continuing

Note

The program funding includes reductions for acquisition excellence efficiencies and program management administration reductions that are not intended to impact program content. The efficiencies reductions total $2.189M in FY12.

A. Mission Description and Budget Item Justification

The F-16 Fighting Falcon is the world's premier multi-mission fighter. It is a fixed-wing, high performance, single-engine fighter aircraft. In its 32-year history, the F-16 has proven itself in combat in a variety of air-to-air and air-to-surface missions such as close air support, combat air patrol, forward air control, battle air interdiction (day/night and all-weather) and suppression of enemy air defenses (SEAD)/Destruction of enemy air defenses (DEAD). Also during these years the aircraft has evolved in its capabilities to exploit the advances made in computer, avionics systems, engine, and structures technologies. The F-16 has been selected by more than 20 air forces around the world and foreign military sales production continues in the 21st century. AFMC ASC/WWM (The F-16 System Program Office) develops, integrates, and qualifies systems to enhance the overall performance of the F-16 mission.

Enhancements which are being or will be developed during the FYDP include:

a. Operational Flight Program (OFP) Development: Blk 40-52 OFP (M-tapes) are updated continually to integrate new precision weapons, advanced targeting pods, improved avionics and other HW Group B subsystems. Major tapes (e.g., M5/5+) are released every three years and a minor tape (e.g., M5.2+) is released 1 year after each major tape. The European Participating Air Forces (EPAF) countries participate in the development of M tapes and share the cost of developing common capabilities and totally fund development of their unique capabilities. Generally, three major or minor tapes are under development/testing at any one time. Extensive ground and flight testing is required to field each M tape. Advanced weapons integration includes Joint Air-to-Surface Stand-off Missile (JASSM) and Joint Direct Attack Munition (JDAM, Laser JDAM), Small Diameter Bomb (SDB), AMRAAM, AIM-9X and updates to existing weapons into the F-16. Weapons integration also includes tasks such as performing risk reduction activities on advanced weapon integration, developing and integrating advanced racks (BRU-69), pylons, adapters, and the Universal Armament Interface, and ensuring nuclear surety, safety and compatibility. ALR-56M SW updates allow for incorporation of latest updates for changing threat environment reducing warfighter vulnerabilities. Link 16 provides the F-16s with a secure, jam resistant, high-capacity data communications link with other combat aircraft, airborne control aircraft, and ground control centers. Major new capabilities currently being integrated via M- tapes include GPS/INS updates to improve targeting accuracy and GPS security , EGBU-12 (laser/GPS guided bomb), Mode 5 IFF, Small Diameter Bomb with Universal Armament Interface, AIM-120D, and Joint Mission Planning System (JMPS). As part of OFP Transition M6.5/M7+ OFP upgrade LM Aero and OO-ALC will split responsibility for software development. LM Aero will produce the common core software tape that will field as M6.5 with the EPAF nations and serve as the baseline for the USAF M7+ OFP. OO-ALC will have software development responsibility for the M7+ software/ hardware candidates being incorporated on USAF jets with M7+ Phase III OFP development schedule to start in FY12.

b. The Mode 5 program for Blk 40/50 aircraft provides secure, encrypted IFF transponder/interrogator capability. Modifications to the Air-to Air Interrogator (AAI) system through integration of a Mode 5 capable Combined Interrogator/Transponder (CIT) capability will field with M6+ OFP.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207133F: *F-16 SQUADRONS*

c. The F-16 Blk 40/50 Service Life Extension Program (SLEP) includes both a structural service life extension program as well as an upgraded avionics (modernization) effort. The avionics modernization effort would include avionics upgrades to include an Active Electronically Scanned Array (AESA) radar that offers improved Destruction of Enemy Air Defenses (DEAD) capabilities as well as improved reliability and maintainability, Center Pedestal Display (CPD), which replaces existing flight instrument cluster with large color multi-function display, Electronic Warfare (EW) updates (ALQ-213), which provides a single-point access for automated or hands-on EW system control, and Integrated Broadcast Service (IBS), that integrates multiple intelligence broadcasts into a system of systems and migrates tactical receive terminals into a single related Joint Tactical Terminal (JTT) family. The structural SLEP includes Full Scale Durability Test (FSDT) starting in FY11 and requires a test fixture to begin structural testing and analysis to determine whether the F-16 Block 40/42/50/52 airworthiness certification can be extended from the current certified service life of 8,000 Equivalent Flight Hours (EFH) to 10,000+ EFH. IAW the Aircraft Structural Integrity Program (ASIP) and MIL-STD 1530C, Testing will take approximately 3 years and supports a full up Blk 40/50 Structural upgrade development program that replaces or reworks known life-limited structure to preclude the onset of widespread fatigue damage, maintain safety of flight and enhance aircraft availability beyond 8,000 hours.
d. Thunder Radar Pod: This is a development effort to procure one Thunder Radar Pod and associated equipment for testing. Funding provided by FY09 and FY10 Congressional adds.
e. Auto Ground Collision Avoidance System (Auto GCAS) is broken out separately for clarity. This effort builds on AFRL Fighter Risk Reduction program (FRRP) demonstrated capability and result in the Auto GCAS capability being production ready for incorporation in the M6.2+ OFP (Minor Tape) fielding in CY2014 with potential for nearly eliminating Controlled Flight Into Terrain (CFIT) accidents, a leading cause of F-16 loss of pilot and aircraft accidents.
f. EMD Hardware/Advanced Capability Improvements: EMD HW provides funding to develop, test, and qualify aircraft subsystems replaced or modified due to requirements changes, Pre-Planned Product Improvements (P3I) and Diminishing Manufacturing Source (DMS). The approach to contracting varies by individual project. These hardware improvements include but are not limited to flight systems, improved navigation, mux architecture, MMC upgrade, Embedded GPS/INS updates, Blk 40 Air-to-Air Interrogator (AAI), digital video recorder, Advanced Data Transfer Equipment (ADTE) and related data transfer devices, display upgrades, radio, communication studies, and CAS Data Link. Advanced Capability Improvements includes software integration, sensor upgrades, radar updates and other self-protection/electronic protection (EP) enhancements, 4th/5th gen fighter network communications, lab and/or on-aircraft evaluation of potential subsystem changes/ capability improvements on the F-16 as well as establishment of associated requirement specification changes. These capability improvements also fund integration of pods including updates and tech order changes (SNIPER, HTS, LITENING, THUNDER POD, Theatre Air Reconnaissance System (TARS/RECCE) etc.
g. Beyond Line-of-Sight (BLOS) Communication Capability: The BLOS communication capability modification is in response to the revised AFCENT Urgent Operational Need to install BLOS capability in all fighter aircraft deploying in support of operational need date. This modification will provide a satellite communication (SATCOM) capability to communicate with many rotary wing and ground maneuver units in the theater of operations. BLOS development for Blocks 30/32 received an OMNIBUS reprogramming and funding to initiate Blocks 40-52 development/integration was provided in the FY08 Supplemental Bill.

This program is in Budget Activity 7, Operational System Development
because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207133F: *F-16 SQUADRONS*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	142.620	129.103	110.939	-	110.939
Current President's Budget	118.512	129.103	143.869	-	143.869
Total Adjustments	-24.108	-	32.930	-	32.930
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-0.595	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-9.999	-			
• SBIR/STTR Transfer	-3.514	-			
• Other Adjustments	-10.000	-	32.930	-	32.930

Change Summary Explanation

FY12 funds added for Legacy Service Life Extension Program (SLEP) (FSDT, Avionics and Structures)and M6+OFP effort to integrate Mode 5 IFF design changes mandated by FAA.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207133F: *F-16 SQUADRONS*	PROJECT 672671: *F-16 Squadrons*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
672671: *F-16 Squadrons*	118.512	129.103	143.869	-	143.869	117.181	117.570	121.111	137.010	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The F-16 Fighting Falcon is the world's premier multi-mission fighter. It is a fixed-wing, high performance, single-engine fighter aircraft. In its 32-year history, the F-16 has proven itself in combat in a variety of air-to-air and air-to-surface missions such as close air support, combat air patrol, forward air control, battle air interdiction (day/night and all-weather) and suppression of enemy air defenses (SEAD)/Destruction of enemy air defenses (DEAD). Also during these years the aircraft has evolved in its capabilities to exploit the advances made in computer, avionics systems, engine, and structures technologies. The F-16 has been selected by more than 20 air forces around the world and foreign military sales production continues in the 21st century. AFMC ASC/WWM (The F-16 System Program Office) develops, integrates, and qualifies systems to enhance the overall performance of the F-16 mission.

Enhancements which are being or will be developed during the FYDP include:

a. Operational Flight Program (OFP) Development: Blk 40-52 OFP (M-tapes) are updated continually to integrate new precision weapons, advanced targeting pods, improved avionics and other HW Group B subsystems. Major tapes (e.g., M5/5+) are released every three years and a minor tape (e.g., M5.2+) is released 1 year after each major tape. The European Participating Air Forces (EPAF) countries participate in the development of M tapes and share the cost of developing common capabilities and totally fund development of their unique capabilities. Generally, three major or minor tapes are under development/testing at any one time. Extensive ground and flight testing is required to field each M tape. Advanced weapons integration includes Joint Air-to-Surface Stand-off Missile (JASSM) and Joint Direct Attack Munition (JDAM, Laser JDAM), Small Diameter Bomb (SDB), AMRAAM, AIM-9X and updates to existing weapons into the F-16. Weapons integration also includes tasks such as performing risk reduction activities on advanced weapon integration, developing and integrating advanced racks (BRU-69), pylons, adapters, and the Universal Armament Interface, and ensuring nuclear surety, safety and compatibility. ALR-56M SW updates allow for incorporation of latest updates for changing threat environment reducing warfighter vulnerabilities. Link 16 provides the F-16s with a secure, jam resistant, high-capacity data communications link with other combat aircraft, airborne control aircraft, and ground control centers. Major new capabilities currently being integrated via M- tapes include GPS/INS updates to improve targeting accuracy and GPS security , EGBU-12 (laser/GPS guided bomb), Mode 5 IFF, Small Diameter Bomb with Universal Armament Interface, AIM-120D, and Joint Mission Planning System (JMPS). As part of OFP Transition M6.5/M7+ OFP upgrade LM Aero and OO-ALC will split responsibility for software development. LM Aero will produce the common core software tape that will field as M6.5 with the EPAF nations and serve as the baseline for the USAF M7+ OFP. OO-ALC will have software development responsibility for the M7+ software/ hardware candidates being incorporated on USAF jets with M7+ Phase III OFP development schedule to start in FY12.

b. The Mode 5 program for Blk 40/50 aircraft provides secure, encrypted IFF transponder/interrogator capability. Modifications to the Air-to Air Interrogator (AAI) system through integration of a Mode 5 capable Combined Interrogator/Transponder (CIT) capability will field with M6+ OFP.

c. The F-16 Blk 40/50 Service Life Extension Program (SLEP) includes both a structural service life extension program as well as an upgraded avionics (modernization) effort. The avionics modernization effort would include avionics upgrades to include an Active Electronically Scanned Array (AESA) radar that offers improved Destruction of Enemy Air Defenses (DEAD) capabilities as well as improved reliability and maintainability, Center Pedestal Display (CPD), which replaces existing flight instrument cluster with large color multi-function display, Electronic Warfare (EW) updates (ALQ-213), which provides a single-point access for automated or hands-on EW system control, and Integrated Broadcast Service (IBS), that integrates multiple intelligence broadcasts into a system of systems and migrates tactical

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207133F: *F-16 SQUADRONS*	PROJECT 672671: *F-16 Squadrons*

receive terminals into a single related Joint Tactical Terminal (JTT) family. The structural SLEP includes Full Scale Durability Test (FSDT) starting in FY11 and requires a test fixture to begin structural testing and analysis to determine whether the F-16 Block 40/42/50/52 airworthiness certification can be extended from the current certified service life of 8,000 Equivalent Flight Hours (EFH) to 10,000+ EFH. IAW the Aircraft Structural Integrity Program (ASIP) and MIL-STD 1530C, Testing will take approximately 3 years and supports a full up Blk 40/50 Structural upgrade development program that replaces or reworks known life-limited structure to preclude the onset of widespread fatigue damage, maintain safety of flight and enhance aircraft availability beyond 8,000 hours.

d. Thunder Radar Pod: This is a development effort to procure one Thunder Radar Pod and associated equipment for testing. Funding provided by FY09 and FY10 Congressional adds.

e. Auto Ground Collision Avoidance System (Auto GCAS) is broken out separately for clarity. This effort builds on AFRL Fighter Risk Reduction program (FRRP) demonstrated capability and result in the Auto GCAS capability being production ready for incorporation in the M6.2+ OFP (Minor Tape) fielding in CY2014 with potential for nearly eliminating Controlled Flight Into Terrain (CFIT) accidents, a leading cause of F-16 loss of pilot and aircraft accidents.

f. EMD Hardware/Advanced Capability Improvements: EMD HW provides funding to develop, test, and qualify aircraft subsystems replaced or modified due to requirements changes, Pre-Planned Product Improvements (P3I) and Diminishing Manufacturing Source (DMS). The approach to contracting varies by individual project. These hardware improvements include but are not limited to flight systems, improved navigation, mux architecture, MMC upgrade, Embedded GPS/INS updates, Blk 40 Air-to-Air Interrogator (AAI), digital video recorder, Advanced Data Transfer Equipment (ADTE) and related data transfer devices, display upgrades, radio, communication studies, and CAS Data Link. Advanced Capability Improvements includes software integration, sensor upgrades, radar updates and other self-protection/electronic protection (EP) enhancements, 4th/5th gen fighter network communications, lab and/or on-aircraft evaluation of potential subsystem changes/ capability improvements on the F-16 as well as establishment of associated requirement specification changes. These capability improvements also fund integration of pods including updates and tech order changes (SNIPER, HTS, LITENING, THUNDER POD, Theatre Air Reconnaissance System (TARS/RECCE) etc.

g. Beyond Line-of-Sight (BLOS) Communication Capability: The BLOS communication capability modification is in response to the revised AFCENT Urgent Operational Need to install BLOS capability in all fighter aircraft deploying in support of operational need date. This modification will provide a satellite communication (SATCOM) capability to communicate with many rotary wing and ground maneuver units in the theater of operations. BLOS development for Blocks 30/32 received an OMNIBUS reprogramming and funding to initiate Blocks 40-52 development/integration was provided in the FY08 Supplemental Bill.

This program is in Budget Activity 7, Operational System Development
because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: OFP Updates	84.819	79.447	87.146	-	87.146
Description: OFP Updates-Blk 40-52 OFP (M-tapes) are updated continually to integrate new weapons, targeting pods, improved avionics. M5.1+ has fielded, M5.2+ has completed DTE phase and entered Force Development Eval(FDE)with fielding scheduled for 1QCY2011, M6.1+ is in Phase III code & SIL test phase with fielding scheduled for Sep 2012, M7+ is in Phase 1 planning, capability definition and initial candidate definition for the development of Post M6+ MMC based avionics system SW development.					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207133F: *F-16 SQUADRONS*	PROJECT 672671: *F-16 Squadrons*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: M5.1+ OFP major release has fielded. M5.2+ has completed DTE phase and entered Force Development Eval(FDE)with fielding scheduled for 1QCY2011. M6.1+ OFP major release, completing the first phase of software design and software development activity and beginning the System Integration Lab and Developmental Flight Testing. OO-ALC will continue familiarization with the OFP development environment and preparation for the USAF unique M7+ program. M7+ is still in Phase 1 planning, capability definition and initial candidate definition. OO-ALC and F16 SPO will document agreements on activities that will be performed as part of Phase II development starting in March 2011 at Ogden including cost and schedule milestones. The F16 SPO will work with OO-ALC to define candidates as part of Phase III development scheduled to start in FY12 ***FY 2011 Plans:*** M5.2+ OFP M tape is currently in Force Development Eval(FDE). M6.1+ Phase III OFP major release is approx 50% complete and is on schedule for meeting all internal SW SIL and Flight Test milestones for DTE Completion scheduled for Jan 2012. M6.2+ Minor Tape contract will be awarded to LM Aero. (3) Cockpit Review Team meetings with the pilots will be held to determine the priorities and candidate selection. detailed design of the M7+ candidates. The F-16 SPO will contract with LM Aero to do requirements definition for common development (Part of M6.5 efforts with EPAF). OO-ALC and the F16 SPO will document agreements on activities that will be performed as part of M7+ Phase III development efforts starting in FY12 at OO-ALC. ***FY 2012 Base Plans:*** M6.1+ OFP completes DTE Jan 2012 and is on track for fielding Sep 2012, M6.2+ Minor Tape will start SIL Integration efforts. OO-ALC and the F16 SPO will document agreements on activities that will be performed as part of M7+ Phase III development efforts starting in March 2012 when M7+ detail design and code efforts for Phase III will begin. OFP transition from LM Aero to OO-ALC will be completed and final SIL HW asset requirements will be procured as part of the transition of the OFP from LM Aero to OO-ALC. ***FY 2012 OCO Plans:***					
Title: Flight Test ***Description:*** F-16 Baseline Flight Test funds F-16 test and evaluation at the Combined Test Facility (CTF) at Edwards AFB for Developmental Test (DT) including integration test of associated subsystems and weapons. Includes flight test activities to maintain test schedule for F-16 Block 40/50 Operational Flight Programs (OFPs), weapons integration, and systems to ensure capabilities meet ACC's fielding schedule.	20.240	23.856	24.056	-	24.056

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: FY10 funding supports CTF infrastructure (Government and Contractor) and DT flight sorties for Block 40/50 M6.1+OFP DT&E , M5.2+ DT&E, M4.3+/M5+ weapons/subsystem regression for JDAM , AIM-9X Block II and AIM-120, and advanced radar risk reduction. ***FY 2011 Plans:*** FY11 funding supports CTF infrastructure (Government and Contractor) and DT flight sorties for Block 40/50 M6.1+OFP DT&E, Legacy OFP (M4.3+/M5+) weapons/subsystem regression for JDAM , AIM-9X Block II and AIM-120, advanced radar risk reduction, Auto GCAS DTO Testing and M7+ initial DTO testing. ***FY 2012 Base Plans:*** FY12 funding supports CTF infrastructure (Government and Contractor) and DT flight sorties for Block 40/50 M6.1+OFP DT&E, legacy OFP (M4.3+/M5+ weapons/subsystem regression for JDAM , AIM-9X Block II and AIM-120, Auto GCAS and M7+ DTO testing completing 1QFY12. ***FY 2012 OCO Plans:***					
Title: Mode 5 IFF APX-113-60 ***Description:*** Mode 5 Identification of Friend or Foe (IFF) APX-113-60 for CAF Blk 40/50 aircraft provides secure, encrypted IFF transponder/interrogator capability. ***FY 2010 Accomplishments:*** Integrate MODE 5 IFF, APX-113-60 Integration activities and DoD AIMS & FAA interrogation management activities will continue. ***FY 2011 Plans:*** In FY 2011 Integrate MODE 5 IFF, APX-113-60 DoD AIMS & FAA interrogation management activities will continue as part of M6+ OFP Fielding. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***	5.244	0.100	-	-	-
Title: Service Life Extension Program (SLEP) ***Description:*** The F-16 Blk 40/50 Service Life Extension Program (SLEP) includes both a structural service life extension program as well as an upgraded avionics (modernization) effort. The avionics modernization	-	20.000	24.767	-	24.767

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
effort would include avionics upgrades to include an Active Electronically Scanned Array (AESA) radar that offers improved Destruction of Enemy Air Defenses (DEAD) capabilities as well as improved reliability and maintainability, Center Pedestal Display (CPD) that replaces existing flight instrument cluster with large color multi-function display, Electronic Warfare (EW) updates (ALQ-213) that provides a single-point access for automated or hands-on EW system control, Integrated Broadcast Service (IBS) that integrates multiple intelligence broadcasts into a system of systems and migrates tactical receive terminals into a single related Joint Tactical Terminal (JTT) family. The structural SLEP includes Full Scale Durability Test (FSDT) starting in FY11 and requires a test fixture to begin structural testing and analysis to determine how the F-16 Block 40/42/50/52 airworthiness certification can be extended from the current certified service life of 8,000 Equivalent Flight Hours (EFH) to 10,000+ EFH IAW the Aircraft Structural Integrity Program (ASIP) and MIL-STD 1530C. Testing will take approximately 3 years and supports a Blk 40/50 Structural upgrade program that replaces or reworks known life-limited structure to preclude the onset of widespread fatigue damage, maintain safety of flight and enhance aircraft availability beyond 8,000 hours. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** Full Scale Durability Test (FSDT) is to build test fixture and begin strutural testing and analysis to enable the F-16 Block 40/42/50/52 airworthiness certification can be extended from the current certified service life of 8,000 Equivalent Flight Hours (EFH) to 10,000+ EFH. IAW the Aircraft Structural Integrity Program (ASIP) and MIL-STD 1530C, a Full Scale Durability Test and a detailed structural analysis must be conducted before ASIP engineers can safely extend the airworthiness certification limits. ***FY 2012 Base Plans:*** Continuation of Full Scale Durability Test (FSDT) and analysis to enable the F-16 Block 40/42/50/52 airworthiness certification can be extended from the current certified service life of 8,000 Equivalent Flight Hours (EFH) to 10,000+ EFH. FY12 also includes effort in support of F-16 Blk 40/50 Service Life Extension Program (SLEP) for both a structural service life extension program as well as an avionics SLEP. The FSDT will provide anlaysis and test data to certify structural redesign needed to extend the current service life of these Blk 40/50 aircraft beyond 8,000 equivalent flight hours. The avionics SLEP will include avionics upgrades to keep the F-16 relevant in the threat environment (e.g. Active Electronically Scanned Array (AESA) radar that offers improved Destruction of Enemy Air Defenses (DEAD) capabilities as well as improved reliability and maintainability; Center Pedestal Display (CPD) that replaces existing flight instrument cluster with large color multi-function display;					

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Electronic Warfare (EW) updates (ALQ-213)that provides a single-point access for automated or hands-on EW system control; Integrated Broadcast Service (IBS) that integrates multiple intelligence broadcasts into a system of systems and migrates tactical receive terminals into a single related Joint Tactical Terminal (JTT) family; etc). ***FY 2012 OCO Plans:***					
Title: EMD HW/Advanced Capibilities Improvements ***Description:*** EMD HW/Advanced Capabilities Improvements provides funding to develop, test & qualify subsystems modified due to requirements changes, PPPI and DMS. EMD HW provides funding to develop, test, and qualify aircraft subsystems replaced or modified due to requirements changes, Pre-Planned Product Improvements (P3I) and Diminishing Manufacturing Source (DMS). The approach to contracting varies by individual project. These hardware improvements include but are not limited to flight systems, improved navigation, mux architecture, MMC upgrade, Embedded GPS/INS updates, Blk 40 Air-to-Air Interrogator (AAI), digital video recorder, Advanced Data Transfer Equipment (ADTE) and related data transfer devices, display upgrades, radio, communication studies, and CAS Data Link. Advanced Capability Improvements includes software integration, sensor upgrades, Radar updates and other self-protection/electronic protection (EP) enhancements, 4th/5th gen fighter network communications, lab and/or on-aircraft evaluation of potential subsystem changes/capability improvements on the F-16 as well as establishment of associated requirement specification changes. These capability improvements also fund integration of pods including updates and tech order changes. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** EMD HW/Advanced Capabilities Improvements provides funding to develop, test & qualify subsystems modified due to requirements changes, PPPI and DMS. EMD HW provides funding to develop, test, and qualify aircraft subsystems replaced or modified due to requirements changes, Pre-Planned Product Improvements (P3I) and Diminishing Manufacturing Source (DMS). The approach to contracting varies by individual project. These hardware improvements include but are not limited to flight systems, improved navigation, mux architecture, MMC upgrade, Embedded GPS/INS updates, Blk 40 Air-to-Air Interrogator (AAI), digital video recorder, Advanced Data Transfer Equipment (ADTE) and related data transfer devices, display upgrades, radio, communication studies, and CAS Data Link. Advanced Capability Improvements includes software integration, sensor upgrades, Radar updates and other self-protection/electronic protection (EP) enhancements, 4th/5th gen fighter network communications, lab and/or on-aircraft evaluation of potential subsystem changes/capability	-	0.500	0.500	-	0.500

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improvements on the F-16 as well as establishment of associated requirement specification changes. These capability improvements also fund integration of pods including updates and tech order changes. ***FY 2012 Base Plans:*** EMD HW/Advanced Capabilities Improvements provides funding to develop, test & qualify subsystems modified due to requirements changes, PPPI and DMS. EMD HW provides funding to develop, test, and qualify aircraft subsystems replaced or modified due to requirements changes, Pre-Planned Product Improvements (P3I) and Diminishing Manufacturing Source (DMS). The approach to contracting varies by individual project. These hardware improvements include but are not limited to flight systems, improved navigation, mux architecture, MMC upgrade, Embedded GPS/INS updates, Blk 40 Air-to-Air Interrogator (AAI), digital video recorder, Advanced Data Transfer Equipment (ADTE) and related data transfer devices, display upgrades, radio, communication studies, and CAS Data Link. Advanced Capability Improvements includes software integration, sensor upgrades, 4th/5th gen fighter network communications, lab and/or on-aircraft evaluation of potential subsystem changes/capability improvements on the F-16 as well as establishment of associated requirement specification changes. These capability improvements also fund integration of pods including updates and tech order changes. ***FY 2012 OCO Plans:***					
Title: Auto Ground Collision Avoidance System ***Description:*** This program will nearly eliminate Controlled Flight Into Terrain (CFIT) accidents, a leading cause of F-16 loss of pilots and aircraft accidents. One study predicted this capability could have saved 10 pilots and 15 aircraft lost from CFIT accidents had it been available. Air Force 1067 signed by the CAFROCC on 3 Mar 2008 directed development of Auto GCAS for F-16 Blk 40-52 aircraft for fielding with M6.2+. The requested solution is for an Automatic Ground Collision Avoidance System (Auto GCAS) and other Flight Control safety enhancements identified in Phase II for F-16 Blocks 40/42 and 50/52 aircraft to be integrated and delivered with the M6.2+ OFP in CY 14. The effort is to qualify and release a DFLCC configuration that is backward compatible with M6.1+ F-16 USAF OFP that can initiate DFLCC TCTO upgrades without Auto GCAS in the core avionics. Production configurations of the remaining software items will be incorporated during the M6.2+ effort and will enable the Auto GCAS function. ***FY 2010 Accomplishments:***	5.630	5.200	7.400	-	7.400

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207133F: *F-16 SQUADRONS*	PROJECT 672671: *F-16 Squadrons*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY10 effort centered on transition from Fighter Risk Reduction Program to an intitial Auto GCAS development program though LM Aero which will be a 2 phase approach for development via 2 contracts, an initial Phase IIIa, awarded in Sep 2010 (software and requirements definition contract), and a follow-on Phase IIIb effort for integration and testing starting in FY11. ***FY 2011 Plans:*** On-going Phase IIIa efforts will finalize all Fighter Risk reduction Prgram capabilities, the Auto GCAS Requirements Matrix, MCRT #1 and #2, select Flight Control safety enhancement requirements, which shall be identified at SRR. Phase IIIb contract efforts will incorporate unqiue M6.1+ specific requirements (into core avionics, DTS, mission planning and flight control OFPs) to allow Auto GCAS to begin system DTO later in the year. ***FY 2012 Base Plans:*** Continuation of Auto GCAS Phase IIIb efforts will address in-flight anomalies whose defect can only be addressed via software revision the Contractor shall incorporate Avionics and Flight Control requirements or requirement revisions (into core avionics, DTS, mission planning and flight control OFPs) into DTO #2. Also key efforts affect configuring the DTO #2 Flight Controls flight test OFP as a production OFP and formally test it with the F-16 USAF M6.1+ Avionics suite for DFLCC OFP update via TCTO as well as configure the DTO #2 Flight Controls flight test OFP as a production OFP and provide it to the F-16 USAF M6.2+ Avionics suite for fielding. ***FY 2012 OCO Plans:***					
Title: BLOS ***Description:*** Provide Beyond Line of Sight (BLOS) capability in response to AFCENT Urgent Operation Need for fighter aircraft supporting OEF/OIF. ***FY 2010 Accomplishments:*** BLOS RDTE funds required for contractor to support modification and installation of developed BLOS modification kits on designated test aircraft for operational flight test. ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***	0.986	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207133F: *F-16 SQUADRONS*	**PROJECT** 672671: *F-16 Squadrons*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Congressional Add Thunder Pod ***Description:*** Plus up/Thunder Pod FY10 only ***FY 2010 Accomplishments:*** Continue development effort to integrate Thunder Radar Pod and associated equipment onto the F-16 for testing. ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***	1.593	-	-	-	-
Accomplishments/Planned Programs Subtotals	118.512	129.103	143.869	-	143.869

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207133F: *APAF, Aircraft Procurement Line Item 40, F-16 Mods*	256.036	162.486	69.785	0.000	69.785	17.208	1.843	0.760	20.520	Continuing	Continuing
• PE 0207445F: *APAF, Aircraft Procurement Line Item 40, F-16 Mods*	0.000	0.000	0.000	0.000	0.000	0.000	8.302	8.303	7.994	Continuing	Continuing
• PE 0809731F: *APAF, Aircraft Procurement Line Item 40, F-16 Mods*	4.633	4.702	3.561	0.000	3.561	4.158	4.940	5.039	5.130	Continuing	Continuing
• PE 0207133F (3): *APAF, Aircraft Procurement , Line Item 95, Post Production Support*	12.911	17.838	4.537	0.000	4.537	14.606	14.755	15.001	15.271	Continuing	Continuing

D. Acquisition Strategy

RDT&E funds will primarily be executed in developing improved capability, maintenance and safety mods. Operational Flight Program (OFP) software will be continuously updated to complement mod development efforts. OFP transition activities to OO-ALC started in FY06 as part of the "follower/ leader" effort with software development starting with M7+.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207133F: *F-16 SQUADRONS*	PROJECT 672671: *F-16 Squadrons*

The F-16 Blk 40/50 Service Life Extension Program (SLEP) includes both a structural service life extension program as well as an upgraded avionics (modernization) effort. The avionics modernization effort would include avionics upgrades to include an Active Electronically Scanned Array (AESA) radar vendor is TBD. Center Pedestal Display (CPD) vendor is TBD.
Integrated Broadcast Service (IBS) vendor is TBD and ALQ-214 vendor is TBD.

The EMD Hardware Development line provides funding to develop, test, and qualify aircraft subsystems upgrades, communication upgrades and Diminishing Manufacturing Source (DMS). The approach to contracting varies by individual project. Lockheed Martin Aeronautics Company (LM Aero) is the prime contractor on all systems except the General Electric Engines and the Pratt & Whitney Engines. Contract types are T&M, CPIF, CPFF and FFP.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207133F: *F-16 SQUADRONS*	PROJECT 672671: *F-16 Squadrons*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OFP Updates	Various	Various:Various,	84.819	79.447	Nov 2010	87.146	Oct 2011	-		87.146	Continuing	Continuing	0.000
Mode 5 IFF for CAF Aircraft	SS/CPIF	LM Aero:Ft Worth, TX	5.244	0.100	Apr 2011	-		-		-	0.000	5.344	0.000
Service Life Extension Program (SLEP	Various	Various:Various,	-	20.000	Mar 2011	24.767	Mar 2012	-		24.767	0.000	44.767	0.000
EMD HW/Advanced Capabilities Improvements	Various	Various:Various,	-	0.500	Apr 2011	0.500	May 2012	-		0.500	Continuing	Continuing	0.000
BLOS development/integration	Various	Various:Various,	0.986	-		-		-		-	0.000	0.986	0.000
Auto GCAS	Various	Various:Various,	5.630	5.200	May 2011	7.400	Feb 2012	-		7.400	Continuing	Continuing	0.000
Reprogramming Pending	TBD	TBD:TBD,	-	-		-		-		-	0.000	0.000	0.000
Congressional Add (Thunder Pods)	Various	OO-ALC:various,	1.593	-		-		-		-	0.000	1.593	0.000
		Subtotal	98.272	105.247		119.813		-		119.813			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Flight Tests	Various	Various:Various,	20.240	23.856	Oct 2010	24.056	Oct 2011	-		24.056	Continuing	Continuing	0.000
		Subtotal	20.240	23.856		24.056		-		24.056			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207133F: *F-16 SQUADRONS*	PROJECT 672671: *F-16 Squadrons*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TBD	TBD	Not specified.:,	-	-		-		-		-	0.000	0.000	0.000
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	118.512	129.103		143.869		-		143.869			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207133F: *F-16 SQUADRONS*	PROJECT 672671: *F-16 Squadrons*

F-16 Program Schedule – USAF (R-4 Exhibit)

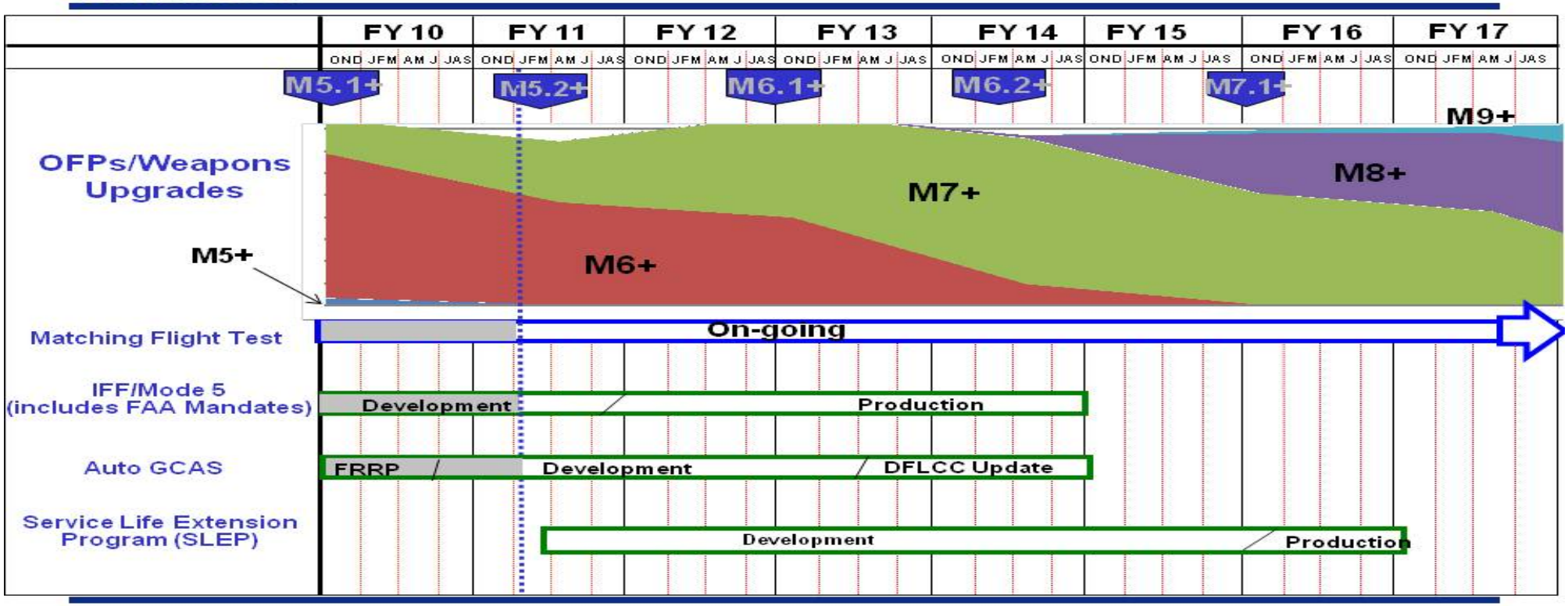

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207133F: *F-16 SQUADRONS*	**PROJECT** 672671: *F-16 Squadrons*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Flight Test Continuous	1	2010	4	2016
OFP Development, continuous	1	2010	4	2016
M6.1+ Release	4	2012	4	2012
M6.2+ Minor Tape Release	2	2014	2	2014
M7.1+ Release	4	2015	4	2015
Auto GCAS	2	2010	4	2013
Mode 5 IFF Development Complete	4	2011	4	2011
Service Life Extension Program (SLEP) Development	2	2011	4	2016
EMD Hardware (continuous)	3	2011	4	2016
Congressional Add Thunder Pod Test	2	2010	4	2010
BLOS Development Complete	4	2010	4	2010

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	240.005	222.677	207.531	-	207.531	167.510	151.032	143.761	146.053	Continuing	Continuing
670131: *Initial Operational Test and Evaluation*	240.005	222.677	90.206	-	90.206	38.420	6.355	-	-	Continuing	Continuing
676020: *F-15*	-	-	117.325	-	117.325	129.090	144.677	143.761	146.053	Continuing	Continuing

Note

The F-15 program has two FY 2012 new starts: F-15C/D BLOS will provide Beyond Line of Sight (BLOS)communications for Air Superiority and Air Sovereignty Alert missions. F-15 Radar Enhancements will improve F-15E capabilities with empahsis on Electronic Protection and other radar improvements.

A. Mission Description and Budget Item Justification

The F-15 is the most versatile fighter in the world today. The F-15A-D continues to provide air superiority with an undefeated and unmatched aerial combat record. The F-15E retains this air superiority capability and adds systems, such as advanced imaging and targeting systems, to meet the requirement for all-weather, deep penetration, and night/under-the-weather, air-to-surface attack. Configured with conformal fuel tanks (CFTs), the F-15E deploys worldwide with minimal tanker support and arrives combat-ready. A mainstay in operations both domestic and abroad, upgrades to the F-15 (avionics, armament, airframe, and engines) are critical to maintaining combat viability (lethality, survivability, and supportability). Projected to remain in service past 2030, avionics modernization is key to long-term weapon system viability. This modernization is built on a foundation of technical studies (both internal to the Air Force and through outside contractors), forestalling obsolescence, exploiting proven technological advances, and leveraging new technology. Major avionics upgrades center around radar modernization (both hardware and software upgrades) and the exploitation of enhanced capability via wideband radome, precision timing, data delivery and processing technology, precision registration systems, cockpit Head Up Display (HUD) and instrumentation digitization and modernization, central computer processing power increases, digital mission event recording systems and an infrared (IR) based fire control system. Funds are also used, as required, to resolve Diminishing Manufacturing Sources and Material Shortage (DMSMS) issues. The proliferation of fourth generation enemy aircraft and sophisticated "double-digit" anti-aircraft missile systems pose a significant threat to F-15 survivability. A fully integrated electronic warfare suite holds the promise of providing survivability as well as expanded electronic attack capability. Nearly all improvements are linked to an aircraft operational flight program update schedule that works to integrate new capabilities with the airframe. These updates are a responsive way to increase the offensive and defensive capability and survivability of the F-15. Given the comprehensiveness of these changes, significant flight test will be required. Incorporation of corresponding spiral and/or phased technology/equipment improvements that include support equipment, mission planning systems, and training device upgrades will improve performance, supportability, and line replaceable unit (LRU) throughput.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207134F: *F-15 PROGRAMS*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	319.967	222.677	212.203	-	212.203
Current President's Budget	240.005	222.677	207.531	-	207.531
Total Adjustments	-79.962	-	-4.672	-	-4.672
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-55.182	-			
• SBIR/STTR Transfer	-23.445	-			
• Other Adjustments	-1.335	-	-4.672	-	-4.672

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: 670131: *Initial Operational Test and Evaluation*		
Congressional Add: *Capability Demonstration*	7.967	-
Congressional Add: *Corrosion Detection and Visualization Program*	0.797	-
Congressional Add Subtotals for Project: 670131	8.764	-
Congressional Add Totals for all Projects	8.764	-

Change Summary Explanation

FY 2010: funding was available due to delays in the IRST and ADCP II programs

FY 2012: The Total Adjustment of -$4.672 million was derived from increases for F-15E Radar Enhancement program; terminating the Infrared Search and Track (IRST) program; and adjusting for higher Air Force priorities

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*	PROJECT 670131: *Initial Operational Test and Evaluation*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
670131: *Initial Operational Test and Evaluation*	240.005	222.677	90.206	-	90.206	38.420	6.355	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $40.987M in FY12.

A. Mission Description and Budget Item Justification

The F-15 is the most versatile fighter in the world today. The F-15A-D continues to provide air superiority with an undefeated and unmatched aerial combat record. The F-15E retains this air superiority capability and adds systems, such as advanced imaging and targeting systems, to meet the requirement for all-weather, deep penetration, and night/under-the-weather, air-to-surface attack. Configured with conformal fuel tanks (CFTs), the F-15E deploys worldwide with minimal tanker support and arrives combat-ready. A mainstay in operations both domestic and abroad, upgrades to the F-15 (avionics, armament, airframe, and engines) are critical to maintaining combat viability (lethality, survivability, and supportability). Projected to remain in service past 2030, avionics modernization is key to long-term weapon system viability. This modernization is built on a foundation of technical studies (both internal to the Air Force and through outside contractors), forestalling obsolescence, exploiting proven technological advances, and leveraging new technology. Major avionics upgrades center around radar modernization (both hardware and software upgrades) and the exploitation of enhanced capability via wideband radome, precision timing, data delivery and processing technology, central computer processing power increases. Incorporation of corresponding spiral and/or phased technology/equipment improvements that include support equipment, mission planning systems, and training device upgrades will improve performance, supportability, and line replaceable unit (LRU) throughput.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Operational Flight Program (OFP) Development Efforts	49.008	51.703	-	-	-
Description: Provides OFP program software and hardware updates to integrate new capabilities on all F-15 aircraft.					
FY 2010 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*	PROJECT 670131: *Initial Operational Test and Evaluation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Complete Suite 7E Test Readiness Review (TRR) and start S7E Electronic System Integration & APG-70 radar risk reduction tests. Begin Suite 8E Phase 1 planning efforts. Continue organic software support and Special Projects development efforts. ***FY 2011 Plans:*** Complete Suite 7E System Verification Review (SVR) #1 and #2. Accomplish Suite 7E Flight Test activity for Development Test and Force Development Evaluation. Accomplish S7E Validation/Verification & Aircrew/Maintenance publication and technical orders production. Award Suite 8E Phase 1. Begin Suite 7M development and complete PDR. Continuation of organic software support and Special Projects development efforts. ***FY 2012 Base Plans:*** Moved to Project 676020 ***FY 2012 OCO Plans:***					
Title: Flight Test ***Description:*** Flight testing of improvements initiated in prior years. Baseline infrastructure and personnel support for F-15 flight test operations. Purchases long-lead test support assets and unique aircraft test instrumentation. ***FY 2010 Accomplishments:*** Continuation of flight test activities at Eglin AFB, FL. ***FY 2011 Plans:*** Continuation of flight test activities at Eglin AFB, FL. ***FY 2012 Base Plans:*** Moved to Project 676020 ***FY 2012 OCO Plans:***	23.637	15.485	-	-	-
Title: Tactical Electronic Warfare System (TEWS) Intermediate Support System (TISS) Technology Insertion Program (TTIP) ***Description:*** Development of Tactical Electronic Warfare System (TEWS) Intermediate Support System (TISS) Technology Insertion Program (TTIP).	2.080	1.489	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*	PROJECT 670131: *Initial Operational Test and Evaluation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Complete RF Interface Test Module (RITM) integration with TISS TPSs; conduct the formal System Compatibility Test (SCT) on the new RITM. Conduct the third year of TISS Engineering Support. Replaces the TEWS TISS radio frequency interface on 36 stations and provides 4 years of Engineering Support. ***FY 2011 Plans:*** Conduct the fourth year of TISS Engineering Support. Replaces the TEWS TISS radio frequency interface on 36 stations and provides 4 years of Engineering Support. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***					
Title: F-15E Radar Modernization Program (RMP) APG-82(V)1 ***Description:*** New AESA radar replacing legacy APG-70 radars on all 222 F-15E aircraft. ***FY 2010 Accomplishments:*** Continued design efforts and completed CDR. Completed Electronic Systems Integration Laboratory (ESIL) TRR. RMP Kit Hardware delivered. Completed Modification Readiness Review. Began modification of 1st DT A/C. ***FY 2011 Plans:*** Complete System Verification Review #1.Complete Production Readiness Review. Complete installation/ modification of 5 DT/OT test aircraft. Complete Flight Test Readiness Review. Begin DT&E. Complete MS C ***FY 2012 Base Plans:*** Complete DT&E and SVR#2. Begin IOT&E. ***FY 2012 OCO Plans:***	151.964	81.430	33.352	-	33.352
Title: F-15C/D Infared Search and Track system (IRST) ***Description:*** Develops IRST pod for use on F-15C/D with fast scanning air-to-air detection, tracking and ranging capability in the IR spectrum. ***FY 2010 Accomplishments:***	2.154	24.941	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207134F: *F-15 PROGRAMS*	**PROJECT** 670131: *Initial Operational Test and Evaluation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Risk reduction trade studies and proposal prep for pre-MS B development. ***FY 2011 Plans:*** Risk reduction tech demo, test hardware development, OFP software maturation, and OGCs associated with concluding pre-MS B development. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***					
Title: Advanced Display Core Processor (ADCP) II (formerly known as Computer Processor Modernization Program and Advanced Display Core Processor Plus w/Vertical Situation Display. FY12 combined programs) ***Description:*** F-15E and F-15C/D central computer modernization. This program combines previous F-15E CPMP and F-15C/D ADCP + VSD Programs into a single developmental program. Additionally, this program provides a high resolution color display to replace the current F-15C/D VSD ***FY 2010 Accomplishments:*** Continuation of ADCP II risk reduction efforts and begin design work. Provides a central computer upgrade for 222 F-15Es to replace ADCP. For F-15C/D provides modern computer (along with new VSD) for long term fleet of 176 F-15C/D. ***FY 2011 Plans:*** Working toward Technology Readiness Assessment. Build and test prototype hardware. VSD supplier selection and development. ***FY 2012 Base Plans:*** Continuation of FY11 efforts and enter EMD. ***FY 2012 OCO Plans:***	2.398	47.629	56.854	-	56.854
Accomplishments/Planned Programs Subtotals	231.241	222.677	90.206	-	90.206

	FY 2010	FY 2011
Congressional Add: Capability Demonstration	7.967	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*	PROJECT 670131: *Initial Operational Test and Evaluation*

	FY 2010	FY 2011
FY 2010 Accomplishments: Capability Demonstration event. ***FY 2011 Plans:***		
Congressional Add: Corrosion Detection and Visualization Program ***FY 2010 Accomplishments:*** Corrosion Detection and Visualization Program. Initiate study to reduce corrosion in airframe structure and LRUs ***FY 2011 Plans:***	0.797	-
Congressional Adds Subtotals	8.764	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207130F: *Aircraft Modification (F-15A/B/C/D Squadrons, APAF) [BP 11]*	66.387	166.209	103.810	0.000	103.810	171.409	161.644	153.790	155.397	Continuing	Continuing
• PE 0207134F: *Aircraft Modification (F-15E Squadrons, APAF [BP11]*	84.797	134.859	117.825	0.000	117.825	155.213	170.065	193.504	229.020	Continuing	Continuing
• PE 0207445F: *Aircraft Modification (Fighter Tactical Data Link, APAF) [BP11]*	0.000	0.174	0.000	0.000	0.000	0.000	6.307	6.307	6.367	Continuing	Continuing
• PE 0809731F: *Aircraft Modification (Training Support to Units, APAF) [BP11]*	0.979	0.993	0.751	0.000	0.751	0.878	1.044	1.065	1.084	Continuing	Continuing
• PE 0207130F (4): *Aircraft Support Equipment (O&I) (F-15A/B/C/D Squadrons, APAF) [BP 12]*	12.728	4.947	3.621	0.000	3.621	4.076	4.145	3.725	3.739	Continuing	Continuing
• PE 0207134F (5): *Aircraft Post Production Support (F-15E Squadrons, APAF) [BP 13]*	15.695	21.599	2.076	0.000	2.076	2.363	2.403	2.448	2.492	Continuing	Continuing
	1.680	6.422	0.087	0.000	0.087	0.097	9.137	23.281	23.699	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*	PROJECT 670131: *Initial Operational Test and Evaluation*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207130F (6): *Aircraft Initial Spares and Repairs (F-15A/B/C/D Squadrons, APAF) [BP 16]*											
• PE 0207134F (7): *Aircraft Initial Spares and Repairs (F-15E Squadrons, APAF) [BP 16]*	0.013	18.107	18.606	0.000	18.606	23.519	23.249	18.766	19.046	Continuing	Continuing

D. Acquisition Strategy

Program is a continuation of effort which includes the development of all F-15 models. Funds are executed organically in support of equipment improvement, study, analysis, and test. Acquisition and management strategies for each program are independently developed and use a variety of contract methods and types to accomplish program objectives.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*	PROJECT 670131: *Initial Operational Test and Evaluation*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OFP Suite 6/7/8 Development and Test	SS/CPIF	Boeing:St Louis, MO	16.325	10.217	Dec 2010	-		-		-	0.000	26.542	0.000
OFP Suite 6/7/8 Development and Test Various	Various	Various:Various,	32.683	42.935	Dec 2010	-		-		-	0.000	75.618	0.000
TISS TTIP	SS/CPFF	Boeing:St Louis, MO	1.954	1.254	Nov 2010	-		-		-	0.000	3.208	0.000
TISS TTIP Various	Various	Various:Various,	0.126	-		-		-		-	0.000	0.126	0.000
F-15C/D APG-63(V)3 Radar Demo	SS/CPFF	Boeing:St Louis, MO	5.810	-		-		-		-	0.000	5.810	0.000
F-15 C/D APG-63(V)3 Radar Demo	Various	TBD:TBD,	2.157	-		-		-		-	0.000	2.157	0.000
F-15E RMP SDD Contract	SS/CPIF	Boeing:St Louis, MO	211.228	33.844	Oct 2010	12.697	Dec 2011	-		12.697	0.000	257.769	257.769
F-15E RMP	Various	Various:Various,	13.618	47.579	Oct 2010	20.656	Dec 2011	-		20.656	Continuing	Continuing	0.000
F-15C/D IRST	Various	Various:Various,	2.154	24.941	Jun 2011	-		-		-	0.000	27.095	0.000
F-15 ADCP II	SS/TBD	Boeing:St Louis, MO	2.398	-		-		-		-	Continuing	Continuing	0.000
F-15 ADCP II Various	Various	Various:Various,	-	47.629	Apr 2011	56.853	Jan 2012	-		56.853	Continuing	Continuing	0.000
F-15 Corrosion Detection and Visualization Program	SS/CPFF	Quest Integrated:Kent, WA	0.797	-		-		-		-	0.000	0.797	0.000
		Subtotal	289.250	208.399		90.206		-		90.206			257.769

Remarks

FY12 PB - Project 670131 includes APG-82(V)1 and ADCP II programs only. All other programs funded under Project 676020.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*	PROJECT 670131: *Initial Operational Test and Evaluation*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Boeing (Contractor Test Team)	SS/FFP	Boeing:St Louis, Mo	18.848	12.238	Jan 2011	-		-		-	0.000	31.086	0.000
Flight Test Support	Various	Various:Various,	4.789	2.040	Feb 2011	-		-		-	0.000	6.829	0.000
		Subtotal	23.637	14.278		-		-		-	0.000	37.915	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	312.887	222.677		90.206		-		90.206			257.769

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*	PROJECT 670131: *Initial Operational Test and Evaluation*

F-15 Modifications

Dominant Air Power: Design For Tomorrow...Deliver Today

Program	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	Requirement
APG-82(V)1								
								222
ADCP II								
								222
	Development		Production		Installation			

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207134F: *F-15 PROGRAMS*	**PROJECT** 670131: *Initial Operational Test and Evaluation*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
OFP Continuous Development	1	2010	4	2016
F-15E APG-82(V)1 RMP EMD - Complete	1	2010	4	2013
F-15C/D IRST EMD - Terminated 2012	2	2010	4	2011
ADCP II EMD	4	2010	3	2013

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*	PROJECT 676020: *F-15*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
676020: *F-15*	-	-	117.325	-	117.325	129.090	144.677	143.761	146.053	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $.001M in FY12.

A. Mission Description and Budget Item Justification

The F-15 is the most versatile fighter in the world today. The F-15A-D continues to provide air superiority with an undefeated and unmatched aerial combat record. The F-15E retains this air superiority capability and adds systems, such as advanced imaging and targeting systems, to meet the requirement for all-weather, deep penetration, and night/under-the-weather, air-to-surface attack. Configured with conformal fuel tanks (CFTs), the F-15E deploys worldwide with minimal tanker support and arrives combat-ready. A mainstay in operations both domestic and abroad, upgrades to the F-15 (avionics, armament, airframe, and engines) are critical to maintaining combat viability (lethality, survivability, and supportability). Projected to remain in service past 2030, avionics modernization is key to long-term weapon system viability. This modernization is built on a foundation of technical studies (both internal to the Air Force and through outside contractors), forestalling obsolescence, exploiting proven technological advances, and leveraging new technology. Major avionics upgrades center precision timing, data delivery and processing technology, precision registration systems, cockpit Head Up Display (HUD) and instrumentation digitization and modernization, digital mission event recording systems and an infrared (IR) based fire control system. Funds are also used, as required, to resolve Diminishing Manufacturing Sources and Material Shortage (DMSMS) issues. The proliferation of fourth generation enemy aircraft and sophisticated "double-digit" anti-aircraft missile systems pose a significant threat to F-15 survivability. A fully integrated electronic warfare suite holds the promise of providing survivability as well as expanded electronic attack capability. Nearly all improvements are linked to an aircraft operational flight program update schedule that works to integrate new capabilities with the airframe. These updates are a responsive way to increase the offensive and defensive capability and survivability of the F-15. Given the comprehensiveness of these changes, significant flight test will be required. Incorporation of corresponding spiral and/or phased technology/equipment improvements that include support equipment, mission planning systems, and training device upgrades will improve performance, supportability, and line replaceable unit (LRU) throughput.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Operational Flight Program (OFP) Development Efforts ***Description:*** Provides OFP program software and hardware updates to integrate new capabilities on all F-15 aircraft.	-	-	54.670	-	54.670

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*	PROJECT 676020: *F-15*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Funded in Project 670131. ***FY 2011 Plans:*** Funded in Project 670131 ***FY 2012 Base Plans:*** Complete Suite 7E program activity and field OFP. Continue Suite 8E Phase 1 contract actions. Initiate S8E Phase 2 planning and contracting actions. Continue Suite 7M development efforts and complete CDR. Continuation of organic software support and Special Projects development efforts. ***FY 2012 OCO Plans:***					
Title: Flight Test ***Description:*** Flight testing of improvements initiated in prior years. Baseline infrastructure and personnel support for F-15 flight test operations. Purchases long-lead test support assets and unique aircraft test instrumentation. ***FY 2010 Accomplishments:*** Funded in Project 670131 ***FY 2011 Plans:*** Funded in Project 670131 ***FY 2012 Base Plans:*** Continuation of flight test activities at Eglin AFB, FL. ***FY 2012 OCO Plans:***	-	-	16.105	-	16.105
Title: F-15C/D BLOS ***Description:*** Provide F-15C/D beyond line of sight (BLOS) communications capability on all long term aircraft. ***FY 2010 Accomplishments:*** Not applicable ***FY 2011 Plans:***	-	-	6.550	-	6.550

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*	PROJECT 676020: *F-15*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Not applicable ***FY 2012 Base Plans:*** New start FY 2012. ***FY 2012 OCO Plans:***					
Title: F-15E Radar Enhancements ***Description:*** Improvements to F-15E Electronic Protection and other radar enhancements. ***FY 2010 Accomplishments:*** Not Applicable ***FY 2011 Plans:*** Not Applicable ***FY 2012 Base Plans:*** New start FY 2012 ***FY 2012 OCO Plans:***	-	-	40.000	-	40.000
Accomplishments/Planned Programs Subtotals	-	-	117.325	-	117.325

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207130F: *Aircraft Modification (F-15A/B/C/D Squadrons, APAF) [BP 11]*	66.387	166.209	103.810	0.000	103.810	171.409	161.644	153.790	155.397	Continuing	Continuing
• PE 0207134F: *Aircraft Modification (F-15E Squadrons, APAF [BP11]*	84.797	134.859	117.825	0.000	117.825	155.213	170.065	193.504	229.020	Continuing	Continuing
• PE 0207445F: *Aircraft Modification (Fighter Tactical Data Link, APAF) [BP11]*	0.000	0.174	0.000	0.000	0.000	0.000	6.307	6.307	6.367	Continuing	Continuing
	0.979	0.993	0.751	0.000	0.751	0.878	1.044	1.065	1.084	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*	PROJECT 676020: *F-15*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0809731F: *Aircraft Modification (Training Support to Units, APAF) [BP11]*											
• PE 0207130F (4): *Aircraft Support Equipment (O&I) (F-15A/B/C/D Squadrons, APAF) [BP 12]*	12.728	4.947	3.621	0.000	3.621	4.076	4.145	3.725	3.739	Continuing	Continuing
• PE 0207134F (5): *Aircraft Post Production Support (F-15E Squadrons, APAF) [BP 13]*	15.695	21.599	2.076	0.000	2.076	2.363	2.403	2.448	2.492	Continuing	Continuing
• PE 0207130F (6): *Aircraft Initial Spares and Repairs (F-15A/B/C/D Squadrons, APAF) [BP 16]*	1.680	6.422	0.087	0.000	0.087	0.097	9.137	23.281	23.699	Continuing	Continuing
• PE 0207134F (7): *Aircraft Initial Spares and Repairs (F-15E Squadrons, APAF) [BP 16]*	0.013	18.107	18.606	0.000	18.606	23.519	23.249	18.766	19.046	Continuing	Continuing

D. Acquisition Strategy

Program is a continuation of effort which includes the development of all F-15 models. Funds are executed organically in support of equipment improvement, study, analysis, and test. Acquisition and management strategies for each program are independently developed and use a variety of contract methods and types to accomplish program objectives.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*	PROJECT 676020: *F-15*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OFP Suite 6/7/8 Development and Test	SS/CPIF	Boeing:St Louis, MO	-	-		10.387	Dec 2011	-		10.387	0.000	10.387	0.000
OFP Suite 6/7/8 Development and Test Various	Various	Various:Various,	-	-		44.283	Mar 2012	-		44.283	0.000	44.283	0.000
F-15 Beyond Line of Sight (BLOS)	TBD	TBD:,	-	-		6.550	Dec 2011	-		6.550	0.000	6.550	0.000
F-15 Radar Enhancement	TBD	TBD:,	-	-		40.000	Dec 2011	-		40.000	0.000	40.000	0.000
		Subtotal	-	-		101.220		-		101.220	0.000	101.220	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Boeing (Contractor Test Team)	SS/CPIF	Boeing:St Louis, MO	-	-		6.002	Nov 2011	-		6.002	0.000	6.002	0.000
Flight Test Support	Various	Various:,	-	-		10.103	Dec 2011	-		10.103	0.000	10.103	0.000
		Subtotal	-	-		16.105		-		16.105	0.000	16.105	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*	PROJECT 676020: *F-15*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		117.325		-		117.325	0.000	117.325	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207134F: *F-15 PROGRAMS*	PROJECT 676020: *F-15*

F-15 Modifications

Dominant Air Power: Design For Tomorrow...Deliver Today

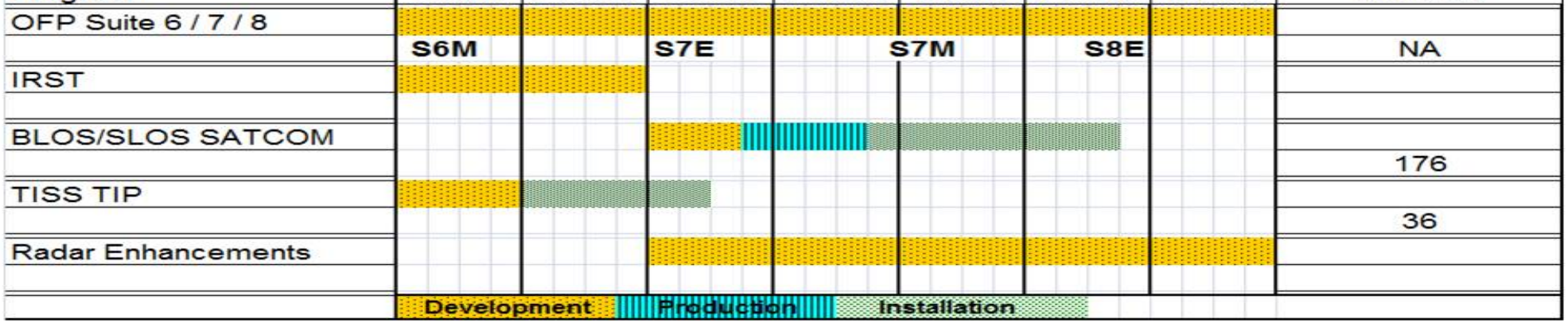

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207134F: *F-15 PROGRAMS*	**PROJECT** 676020: *F-15*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
OFP Continuous Development	4	2011	4	2016
F-15 C/D BLOS	4	2011	3	2012
Radar Enhancements	4	2011	3	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207136F: *Manned Destructive Suppression*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	9.707	12.937	13.253	-	13.253	13.803	14.189	14.636	14.937	Continuing	Continuing
674595: *F-16 HARM Targeting System*	9.707	12.937	13.253	-	13.253	13.803	14.189	14.636	14.937	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Manned Destructive Suppression (MDS) program element funds the development, procurement, and sustainment of the Air Force's Suppression of Enemy Air Defenses (SEAD) and Destruction of Enemy Air Defenses (DEAD) capabilities. The F-16 HARM Targeting System (HTS) is currently the only programmed reactive SEAD capability and enables targeting the HARM missile in its most lethal 'range known' mode. The program provides F-16 Block 50/52 aircraft with the ability to employ the AN/ASQ-213 Pod. With the introduction of HTS Revision 7 (HTS R7) in 2007, the AN/ASQ-213 Pod now has a precision geo-location capability to target Precision Guided Munitions (PGMs) to destroy fixed and mobile enemy air defense elements. Additionally, by relocating the AN/ASQ-213 HTS R7 Pod to the aircraft's left inlet hard point, the F-16 can simultaneously carry the HTS R7 Pod and an Advanced Targeting Pod (ATP). HTS R7 fielding is complete and represents the Air Force's near-term solution for reactive time critical targeting for DEAD until this mission can be transferred to F-35 or a yet to be defined system. HTS R7 derived precision targeting data can be provided to all Joint Forces via Link-16. This RDTE effort continues preplanned product improvements (P3I) for the HTS and applies technologies similar to those demonstrated in the Advanced Tactical Targeting Technologies (AT3) program and HTS R7 development.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	9.748	12.937	13.374	-	13.374
Current President's Budget	9.707	12.937	13.253	-	13.253
Total Adjustments	-0.041	-	-0.121	-	-0.121
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.041	-	-0.121	-	-0.121

Change Summary Explanation

No significant changes.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207136F: *Manned Destructive Suppression*	PROJECT 674595: *F-16 HARM Targeting System*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674595: *F-16 HARM Targeting System*	9.707	12.937	13.253	-	13.253	13.803	14.189	14.636	14.937	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The program funding includes reductions for Overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $.077M in FY12.

A. Mission Description and Budget Item Justification

The Manned Destructive Suppression (MDS) program element funds the development, procurement, and sustainment of the Air Force's Suppression of Enemy Air Defenses (SEAD) and Destruction of Enemy Air Defenses (DEAD) capabilities. The F-16 HARM Targeting System (HTS) is currently the only programmed reactive SEAD capability and enables targeting the HARM missile in its most lethal 'range known' mode. The program provides F-16 Block 50/52 aircraft with the ability to employ the AN/ASQ-213 Pod. With the introduction of HTS Revision 7 (HTS R7) in 2007, the AN/ASQ-213 Pod now has a precision geo-location capability to target Precision Guided Munitions (PGMs) to destroy fixed and mobile enemy air defense elements. Additionally, by relocating the AN/ASQ-213 HTS R7 Pod to the aircraft's left inlet hard point, the F-16 can simultaneously carry the HTS R7 Pod and an Advanced Targeting Pod (ATP). HTS R7 fielding is complete and represents the Air Force's near-term solution for reactive time critical targeting for DEAD until this mission can be transferred to F-35 or a yet to be defined system. HTS R7 derived precision targeting data can be provided to all Joint Forces via Link-16. This RDTE effort continues preplanned product improvements (P3I) for the HTS and applies technologies similar to those demonstrated in the Advanced Tactical Targeting Technologies (AT3) program and HTS R7 development.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: P3I R7 SWUP	7.912	10.264	9.490	-	9.490
Description: P3I R7 Software Upgrade (SWUP) ***FY 2010 Accomplishments:*** HTS R7.7 SWUP flight testing began and study efforts on capability upgrades continued. R7.7 SWUP initial software build and ground test was completed in time for release to flight testing this year. A series of flight test planning activities to include scheduling of needed resources continued through this year leading up to the beginning of initial flight testing with associated data analysis of recorded test data to capture required baseline					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207136F: *Manned Destructive Suppression*	PROJECT 674595: *F-16 HARM Targeting System*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
data. Also, this effort included release of updated and tested software for subsequent flight test missions. As a precursor to the next follow-on upgrade effort, studies continued to define candidates and mitigate risks to ensure a successful, sustainable HTS P3I program. This major thrust included continued mission support, i.e., program management activities. ***FY 2011 Plans:*** HTS R7.7 SWUP flight testing support and additional software releases for flight testing continues. Studies continue on risk reduction efforts for future P3I phase(s). HTS R7.7 SWUP flight testing continues to include completing all data baseline activities, initial formal developmental flight testing and all associated data analysis, and release of upgraded software for subsequent flight testing. Studies include candidate selection process activities and risk reduction efforts for follow-on upgrades. Mission support, i.e., program management for administrative and technical support activities continue. The major thrusts of this year would be preparation and support of continued flight testing activities and risk reduction candidate selection activities for the follow-on P3I effort. This P3I R7 study effort for future phase(s) is a continuation of the HTS P3I effort. ***FY 2012 Base Plans:*** HTS R7.7 SWUP flight testing support and additional software releases for flight testing continues, culminating in the release of R7.7 SWUP software. Studies continue on risk reduction efforts for future P3I phase(s). HTS R7.7 SWUP formal developmental flight testing and all associated data analysis and release of upgraded software will be completed. Risk reduction activities and candidate selection study efforts for follow-on upgrades continue. Also, final steps would be completed to potentially award the R7.8 SWUP development. The major pushes of this year would be releasing R7.7 SWUP software to the field, continued risk reduction candidate selection activities for follow-on P3I efforts, and planned award of the R7.8 SWUP development. ***FY 2012 OCO Plans:***					
Title: Flight Test ***Description:*** Flight Test ***FY 2010 Accomplishments:*** Began government support (responsible test organization at Edwards AFB, CA) of test planning activities and provide scheduling support for needed resources and required configurations to ensure a successful start of HTS R7.7 SWUP flight test program. Ground testing, such as anechoic chamber testing, included as needed. The test organization conducted the flight testing missions to include F-16 test aircraft operations, threat	0.977	1.838	2.969	-	2.969

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
ranges and associated support, air re-fueling, and range control support. Post-mission flight test support was accomplished. ***FY 2011 Plans:*** Government flight test operations continue to include test planning and execution activities for HTS R7.7 SWUP CT&E and DT&E efforts, scheduling support for all needed resources and required configurations for each flight test mission. Ground testing continues via anechoic chamber testing, as needed. The test organization will continue to conduct each mission to include F-16 test aircraft operations, threat ranges and associated support, air re-fueling, and range control support. Post-mission flight test support for each mission also continues. Initial flight test planning for HTS R7.8 SWUP begins. ***FY 2012 Base Plans:*** Government flight test operations continue to include test planning and execution activities for final HTS R7.7 SWUP DT&E efforts, scheduling support for all needed resources and required configurations for each flight test mission. Ground testing continues via anechoic chamber testing, as needed. The test organization will continue to conduct each mission to include F-16 test aircraft operations, threat ranges and associated support, air re-fueling, and range control support. Post-mission flight test support for each mission also continues. Initial test planning for HTS R7.8 SWUP continues. ***FY 2012 OCO Plans:***					
Title: Mission Planning ***Description:*** Joint Mission Planning System (JMPS) (Formerly Air Force Mission Support System (AFMSS)) ***FY 2010 Accomplishments:*** Began HTS mission planning module upgrade effort to release upgraded mission planning software to support HTS R7.7 SWUP flight testing. This effort will build the first engineering release of HTS R7.7 SWUP mission planning software to be released to support formal HTS R7.7 SWUP development flight testing. ***FY 2011 Plans:*** Continue mission planning software upgrade effort to include correcting deficiencies, additional engineering software releases and preparations for formal fielding with HTS R7.7 SWUP ***FY 2012 Base Plans:***	0.818	0.835	0.794	-	0.794

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue mission planning software upgrade effort to include correcting deficiencies, additional engineering software releases and formal fielding in conjunction with HTS R7.7 SWUP software release.					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	9.707	12.937	13.253	-	13.253

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A: *No other investment funding*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

The HTS R7 improvement strategy includes accomplishment of risk reduction studies and selection of appropriate contracting strategies for P3I and upgrade of HTS inventory.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HTS R7 SWUP/P3I	SS/CPIF	Raytheon Systems Co.:Tucson, AZ	13.277	10.264	Feb 2011	9.490	Jan 2012	-		9.490	Continuing	Continuing	0.000
JMPS (Formerly AFMSS)	SS/Various	Multiple:Multiple,	0.818	0.835	Mar 2011	0.794	Dec 2011	-		0.794	Continuing	Continuing	0.000
		Subtotal	14.095	11.099		10.284		-		10.284			0.000

Remarks

HTS R7 SWUP/P3I began in FY09.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test	PO	412 TW:Edwards AFB, CA	1.007	1.838	Mar 2011	2.969	Jan 2012	-		2.969	Continuing	Continuing	0.000
		Subtotal	1.007	1.838		2.969		-		2.969			0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
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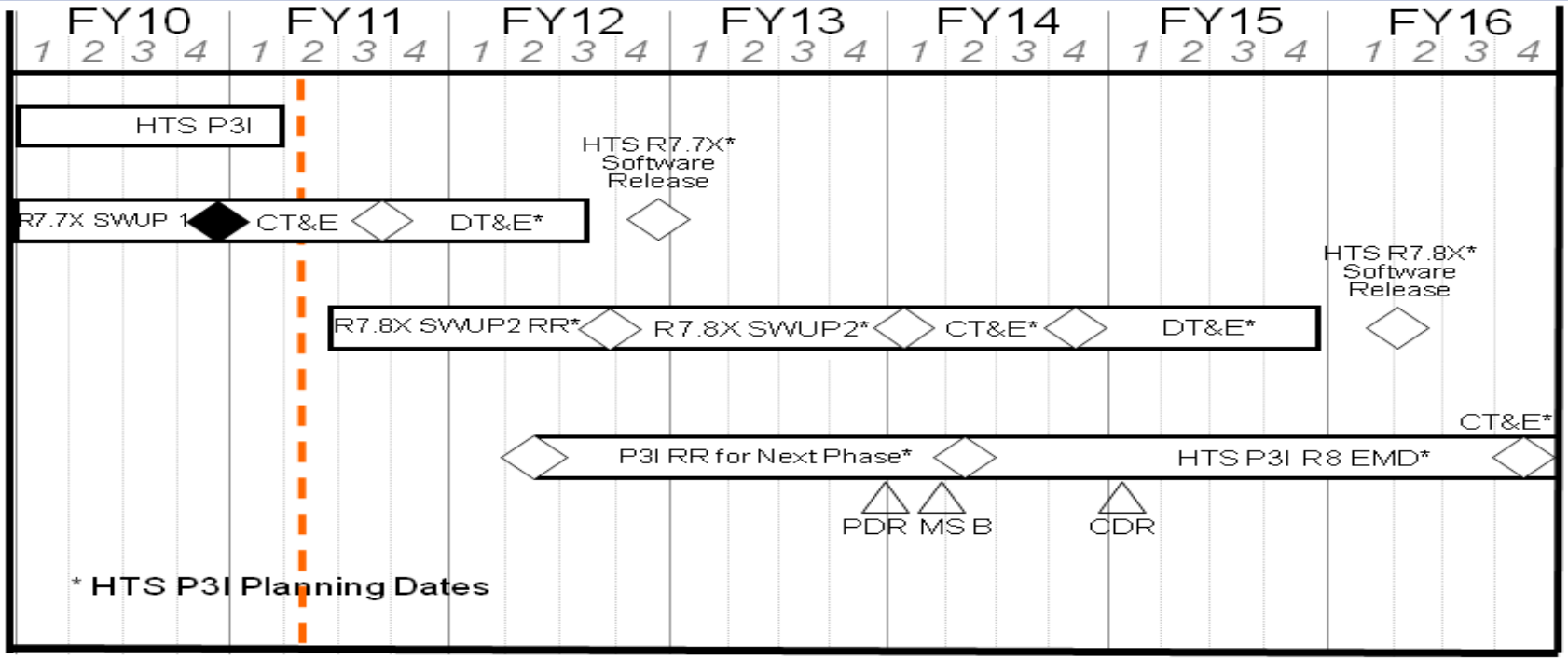
	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	15.102	12.937		13.253		-		13.253			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207136F: *Manned Destructive Suppression*	PROJECT 674595: *F-16 HARM Targeting System*

HTS Development
Program Schedule



SDD-System Development & Demonstration
P3I-PrePlanned Product Improvement
SWUP-Software Upgrade Program
CT&E- Contractor Test and Evaluation
DT&E-Development Test and Evaluation
PDR-Preliminary Design Review
MS B-Milestone B
CDR-Critical Design Review

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
R7.7 SWUP Flight Test (DT&E)	4	2010	2	2012
HTS P3I Risk Reduction for Next Phase Contract	2	2011	4	2012
R7.8 SWUP Contract Award	3	2012	3	2012
R7.8SWUP Flight test (CT&E/DT&E)	1	2014	4	2015
P3I RR (R8)	2	2012	2	2014
P3I R8 PDR	3	2013	3	2013
P3I R8 MS B	4	2013	4	2013
P3I R8 EMD Contract Award	2	2014	2	2014
P3I R8 CDR	3	2014	3	2014
P3I R8 Flight Test (CT&E/DT&E)	4	2016	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207138F: *F-22 SQUADRONS*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	559.455	576.330	718.432	-	718.432	689.201	526.627	484.880	528.188	Continuing	Continuing
674785: *F-22*	559.455	576.330	718.432	-	718.432	689.201	526.627	484.880	528.188	Continuing	Continuing

Note

Totals include funding for PRCP Program Number, 265, F-22

A. Mission Description and Budget Item Justification

The F-22 program funding includes overhead reductions that are not intended to impact program content. The efficiencies reductions total $4.573M in FY12.

The F-22 Raptor represents the USAF's top priority for providing the Joint Force with air dominance, operational access, and homeland and cruise missile defense for the next 20+ years. The F-22 is a first-of-a-kind multi-mission fighter aircraft that combines stealth, supercruise, advanced maneuverability and integrated avionics to make it the world's most capable combat aircraft. The Engineering and Manufacturing Development (EMD) phase of F-22 acquisition is complete. The program is now continuing the pre-planned modernization effort through incremental development phases that enhance the F-22 Global Strike capability. The development program enhances the air vehicle, engine, and training system to improve/enhance F-22 weapons, communications, and Intelligence Surveillance Reconnaissance (ISR) capabilities.

BA7 - This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	569.345	576.330	555.208	-	555.208
Current President's Budget	559.455	576.330	718.432	-	718.432
Total Adjustments	-9.890	-	163.224	-	163.224
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-2.375	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-7.515	-			
• Other Adjustments	-	-	163.224	-	163.224

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207138F: *F-22 SQUADRONS*

Change Summary Explanation

Note 1: In FY 2010, $9.8M decrease due to higher Air Force priorities.

Note 2: In FY 2012, $163.2M increase in funding due to the following: $127.6M for Increment 3.2 requirements (Air-to-Air Block 30 and Air-to-Air Block 35), Advanced Technology Development, Auto Ground Collision Avoidance System (AGCAS), Aircraft 4006 Upgrade, 5th Generation Architecture, Laboratory Obsolescence, and $42.6M to directly fund Increment 3.2 enabling work.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207138F: *F-22 SQUADRONS*	PROJECT 674785: *F-22*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674785: *F-22*	559.455	576.330	718.432	-	718.432	689.201	526.627	484.880	528.188	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The F-22 program funding includes overhead reductions that are not intended to impact program content. The efficiencies reductions total $4.573M in FY12.

The F-22 Raptor represents the USAF's top priority for providing the Joint Force with air dominance, operational access, and homeland and cruise missile defense for the next 20+ years. The F-22 is a first-of-a-kind multi-mission fighter aircraft that combines stealth, supercruise, advanced maneuverability and integrated avionics to make it the world's most capable combat aircraft. The Engineering and Manufacturing Development (EMD) phase of F-22 acquisition is complete. The program is now continuing the pre-planned modernization effort through incremental development phases that enhance the F-22 Global Strike capability. The development program enhances the air vehicle, engine, and training system to improve/enhance F-22 weapons, communications, and Intelligence Surveillance Reconnaissance (ISR) capabilities.

BA7 - This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Software Support	51.930	60.200	62.249	-	62.249
Description: (U) Operational Flight Plan (OFP) testing in the Raptor Integration Lab (RAIL) and the Avionics Integration Lab (AIL), Developmental and Operational flight test, Pilot Training Systems (PTS) software upgrades, Synthetic Aperature Radar (SAR) mapping capability development for the PTS, Trainer/Integrated Maintenance Information System (IMIS) Software Enhancements					
FY 2010 Accomplishments: (U) In FY 2010: Update 3 software support OFP testing in the Raptor Integration Lab (RAIL) and the Avionics Integration Lab (AIL) continues for three of four software products. Continuation of Developmental and Operational flight test of three of four software products. Block 30 Increment 2 software product released to the field, first of four Update 3 software products. IMIS continued the Ada to C++ conversion; Low Observables (LO) Structural Maintenance, Present TO, and Air Vehicle Interface. As each one of these IMIS areas are converted to C++, long awaited enhancements are incorporated, increasing capability to the maintainer.					
FY 2011 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207138F: *F-22 SQUADRONS*	PROJECT 674785: *F-22*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
(U) In FY 2011: Flight test on the Update 3 software support OFPs are completed and fielded. FOT&E will be conducted on Update 3 and Increment 3.1 and will be released to the field. Update 4 coding will be accomplished, and testing in the system integration laboratories will begin for two of the three Update 4 software configurations. Developmental flight testing will begin on the first of three software configurations. Pilot Training Systems (PTS) software upgrades,Synthetic Aperature Radar (SAR) mapping capability development for the PTS. IMIS to continue Ada to C++ conversion focusing on Integrated Maintenance Data Systems (IMDS) interface error correction and Maintenance Data Collection. ***FY 2012 Base Plans:*** (U) In FY 2012: Update 4 software support OFPs are completed. Flight testing of all the Update 4 software products will be completed and fielded. IMIS to continue focus on ADA to C++ conversion focusing on three additional major areas. ***FY 2012 OCO Plans:***					
Title: System Engineering/Program Management Support ***Description:*** (U) Provide for F-22 program-wide planning and execution. ***FY 2010 Accomplishments:*** (U) In FY 2010: Provides for F-22 program wide planning and execution comprised of, but not limited to, the following: requirements identification, schedule analysis and integration, cost estimating data, and systems engineering process management. ***FY 2011 Plans:*** (U) In FY 2011: Same as prior year. ***FY 2012 Base Plans:*** (U) In FY 2012: Same as prior year. ***FY 2012 OCO Plans:***	17.333	17.636	17.898	-	17.898
Title: Mission Support ***Description:*** Continue mission support of the Program Office; travel, computer costs, misc contracts, etc. ***FY 2010 Accomplishments:***	11.879	13.933	14.000	-	14.000

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207138F: *F-22 SQUADRONS*	PROJECT 674785: *F-22*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
(U) In FY 2010: Funds provide centralized Program Management Administration (PMA) allowing management and oversight activities in direct support of F-22 Increment Development, RAMMP, Aircraft Structural Integrity Program (ASIP), flight test support, etc. ***FY 2011 Plans:*** (U) In FY 2011: Same as prior year. ***FY 2012 Base Plans:*** (U) In FY 2012: Same as prior year. ***FY 2012 OCO Plans:***					
Title: Reliability and Maintainability Maturation Program (RAMMP) ***Description:*** (U) Continue development of RAMMP to improve MTBM and aircraft availability. ***FY 2010 Accomplishments:*** (U) In FY 2010: Provides for development of multiple efforts to improve Mean Time Between Maintenance (MTBM), maintainability and reduce F-22 weapon system life cycle cost. ***FY 2011 Plans:*** (U) In FY 2011: Same as prior year. ***FY 2012 Base Plans:*** (U) In FY 2012: Same as prior year. ***FY 2012 OCO Plans:***	17.184	12.670	18.000	-	18.000
Title: Increment 3.1 ***Description:*** (U) The F-22 Increment 3.1 Modernization Program consists of the software and hardware modifications necessary to provide Enhanced Global Strike (GS) capabilities on the Lot 4B and beyond F-22 aircraft and training systems. Increment 3.1 is currently implementing the design products to deliver the enhanced capabilities to support retrofit on operational F-22 aircraft and their support elements. ***FY 2010 Accomplishments:***	37.540	13.432	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
(U) In FY 2010: Continue Increment 3.1 integration and certification testing in the Raptor Integration Lab (RAIL) and the Avionics Integration Lab (AIL) will be completed. Continue developmental flight test of the Increment 3.1 capabilities. ***FY 2011 Plans:*** (U) In FY 2011: Complete Increment 3.1 developmental flight test. Increment 3.1 operational flight test through July, 2011. ***FY 2012 Base Plans:*** (U) IN FY 2012: No planned activities in 2012 ***FY 2012 OCO Plans:***					
Title: Increment 3.2A ***Description:*** (U) The F-22 Increment 3.2a Modernization Program consists of the software development necessary to provide Increment 3.2a capabilities including improvements to Electronic Protection, Combat Identification and Link-16 Receive. ***FY 2010 Accomplishments:*** (U) In FY 2010: Software Only Updates - Requirements Development will begin, where operational requirements are translated into technical requirements. A Systems Requirements Review and external interface freeze are scheduled to occur during this time. ***FY 2011 Plans:*** (U) In FY 2011: Requirements Development will be completed and will culminate in a System Design Review. Detailed design of the capabilities will begin and a Preliminary Design Review will be conducted. Preliminary work to prepare lab and test facilities for Development, Integration, and Test will also begin. MDD will be accomplished. ***FY 2012 Base Plans:*** (U) In FY 2012: The detailed design phase will continue and will culminate in a Critical Design Review. Preliminary work will continue to prepare lab and test facilities for Development, Integration, and Test. All software coding, integration and testing will begin. Milestone B will be completed. ***FY 2012 OCO Plans:***	67.178	75.805	129.450	-	129.450
Title: Increment 3.2B	87.628	140.942	125.295	-	125.295

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: (U) The F-22 Increment 3.2b Modernization Program consists of the software development necessary to provide Increment 3.2b capabilities including Intra-Flight Data Link Improvements, Electronic Protection, AIM-9X and AIM-120D integration with Common Weapon Engagement Zone, Geolocate 2.0 and Stores Management System Common Split Bus. The Enhanced Stores Management System (ESMS) program is a hardware development and risk reduction program required to integrate any new weapons on the F-22 beyond Increment 3.1. ***FY 2010 Accomplishments:*** (U) In FY 2010: Candidate Definition is completed and the Requirements Development phase of the Increment 3.2 program will begin. ***FY 2011 Plans:*** (U) In FY 2011: ESMS program will continue sub-system integration and complete it in the Avionics Integration Lab (AIL). Flight test of the ESMS sub-system will also be performed and scheduled to be completed as well. Requirements Development will be completed and will culminate in a System Design Review. Detailed design of the capabilities will begin. Preliminary work to prepare lab and test facilities for Development, Integration, and Test will also begin. MDD will be accomplished. A significant amount of hardware is being purchased to support Increment 3.2B candidate testing and development. ***FY 2012 Base Plans:*** (U) In FY 2012: Detailed design of the capabilities will continue. Work to prepare lab and test facilities for Development, Integration, and Test will continue. ***FY 2012 OCO Plans:***					
Title: Combined Test Force (CTF) ***Description:*** (U) The F-22 Combined Test Force (CTF), located at Edwards Air Force Base, conducts full-up weapons system testing to assess the synergistic effect of the F-22 combined characteristics of stealth, speed, maneuverability, and integrated avionics in mission accomplishment. The CTF uses operationally significant ground and flight test scenarios, when practical, to identify system performance deficiencies early before they are more difficult and costly to resolve. ***FY 2010 Accomplishments:***	110.671	93.700	95.246	-	95.246

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207138F: *F-22 SQUADRONS*	PROJECT 674785: *F-22*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
(U) In FY 2010: The significant programs undergoing flight test at AFFTC include: Increment 3.1/Update 3, Small Diameter Bomb (SDB) Integration AIM-9X Risk Reduction, Coldstick, Data Management Video Recorder (DMVR), Environmental Control System (ECS), Remote Sensor Assembly (RSA), Signature Management Plan(SMP), and Infrared Countermeasure (IRCM) Door. ***FY 2011 Plans:*** (U) In FY 2011: The significant programs undergoing flight test at AFFTC include: the close-out of Increment 3.1/Update 3; AIM-9X and SDB Risk Reduction; ESMS/TA-74; Coldstick tests; Arresting Gear; Main Oil Pump; Signature Management Plan; 6 gallon test; Bio-fuel Certification; and the Travel Pod. Small projects currently planned also include: IR Countermeasure Door; Auxiliary Power Unit Exhaust Door Temperature; Augmentor/ Ignitor; Air Cycle machine Reliability Improvements; Loads Regression Testing; #5 carbon seal redesign; Structural Health Monitoring Device Durability; and Engine Software version #17. ***FY 2012 Base Plans:*** (U)In FY 2012: The significant programs undergoing flight test at AFFTC include: Update 4 software testing; AIM-9X SEEK EAGLE testing; External Fuel Tank testing; and 6 gallon testing. Small projects currently-planned also include: NUCIF; dragging brake issue; Weapon Bay Door Redesign: cracking/missile fin rub; Flight Control Problem; and 5th Generation Common Architecture. ***FY 2012 OCO Plans:***					
Title: Laboratory Test & Operations (LTO) ***Description:*** (U) The LTO effort provides the capability (labor and hardware) to plan and conduct development, integration, test, & verification (IT&V) of F-22 OFPs with F-22 hardware. This capability is provided through the maintenance and operation of 20 development labs including 5 unique major System Integration Laboratories (SILs): the Agile Integration Lab (AIL); the Raptor Integration Lab; the Air Combat Simulation (ACS) Lab; the Vehicle Management System (VMS) Vehicle Integration Facility (VIF); and the Vehicle System Simulator (VSS). ***FY 2010 Accomplishments:*** (U) In FY 2010: Accomplish critical updates to offset aging/obsolete equipment. Update critical systems as required to support new aircraft configurations and capabilities. Maintain lab “ready state” availability in support of F-22 programs. Accomplish OFP verification and risk reduction. Provide pilot training, exercise execution, and war gaming in support of Air Combat Command; provide test event planning, rehearsal, and conduct in	84.950	77.042	98.134	-	98.134

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
support of Air Force Operational Test & Evaluation Center. Support periodic Air Warfare Center operational mission data updates. ***FY 2011 Plans:*** (U) In FY 2011: Same as prior year. ***FY 2012 Base Plans:*** (U) In FY 2012: Same as prior year. In addition, lab consolidation of RAIL at LMA Ft. Worth will be accomplished. ***FY 2012 OCO Plans:***					
Title: VAX Migration ***Description:*** (U) The F-22 VAX Migration program develops, integrates, tests, and deploys computer infrastructure and software tools to replace existing VAX-based resources used to develop, field, and sustain F-22 capabilities. The current VAX architecture is obsolete, resulting in increased program risks as the underlying computer infrastructure and software tools become increasingly unreliable and unsupportable. ***FY 2010 Accomplishments:*** (U) In FY 2010: The majority of the activities include labor required to translate existing VAX-based software development tools and procedures to new platforms. Where required, this includes rewriting existing code to provide equivalent results on target platforms. Each system requires complete certification testing and validation. Consequently, this activity also includes Contractor testing and support for Government certification and accreditation of migrated system; and updating of required Contractor software and hardware development processes to reflect resulting architectures. ***FY 2011 Plans:*** (U) In FY 2011: Same as prior year ***FY 2012 Base Plans:*** (U) In FY 2012: Same as prior year. ***FY 2012 OCO Plans:***	58.658	39.692	31.307	-	31.307
Title: F-22 Small Project Roll-up ***Description:*** Continue F-22 modernization development and support activities	14.204	19.275	12.638	-	12.638

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207138F: *F-22 SQUADRONS*	PROJECT 674785: *F-22*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Provides for F-22 modernization activities including, but not limited to: Common Configuration, Aircraft Structural Integrity Program (ASIP), LO Signature Mgmt, EN/Threat Modeling Support, DT Weapons Assets, Arresting Gear System (AGS), PT Dynamic SAR, Support Equipment Development, Urgent Response, Replacement Test Aircraft and OGC/GFE. ***FY 2011 Plans:*** Provides for F-22 modernization activities including, but not limited to: LO Signature Mgmt, EN/Threat Modeling Support, DT Weapons Assets, F-22 Secure Software Dev Networks, PT Dynamic SAR, Support Equipment Development, Urgent Response, and OGC/GFE. ***FY 2012 Base Plans:*** Provides for F-22 modernization activities including, but not limited to: EN/Threat Modeling Support, DT Weapons Assets, F-22 Secure Software Dev Networks, PT Dynamic SAR, Support Equipment Development, Urgent Response, and OGC/GFE. ***FY 2012 OCO Plans:***					
Title: Crypto Modernization ***Description:*** Crypto Modernization provides for development to support crypto-graphic updates. Two crypto-graphic projects are currently in work: the KOV-20 Field Upgrade (field upgrade only) and the KOV-20 Off-Ramp. ***FY 2010 Accomplishments:*** FY2010: No planned effort in FY2010 ***FY 2011 Plans:*** FY2011: Crypto Modernization activities: KOV-20 Field Upgrade to retrofit the test jets with the upgraded KOV-20 units. KOV-20 Off-Ramp requirements definition and tech package development will be accomplished. ***FY 2012 Base Plans:*** FY2012: Crypto Modernization activities: KOV-20 Off-Ramp requirements analysis and generation phase will be accomplished and the design phase will begin. ***FY 2012 OCO Plans:***	-	2.380	7.245	-	7.245
Title: Advanced Technology Development	0.300	9.623	60.558	-	60.558

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: (U) Technology Maturation and risk reduction of Classified F-22 related development efforts ***FY 2010 Accomplishments:*** (U) In FY 2010: Study and analysis of a variety of Special Projects for integration onto the F-22. ***FY 2011 Plans:*** (U) In FY 2011: Technology Maturation and risk reduction of Classified F-22 related development efforts. This effort includes studies and analyses of a variety of Special Projects for integration onto the F-22 and to perform proof of concept demonstration on select projects. ***FY 2012 Base Plans:*** (U) In FY 2012: Technology Maturation and risk reduction of Classified F-22 related development efforts. Study and analysis of a variety of Special Projects for integration onto our platform continues. Perform proof of concept demonstration on select projects. Detailed integration efforts begin on successfully demonstrated projects. ***FY 2012 OCO Plans:***					
Title: Auto Ground Collision Avoidance System (AGCAS) ***Description:*** (U) The AGCAS will be designed and integrated on the F-22 to prevent the aircraft from unintentionally descending below ground level. ***FY 2010 Accomplishments:*** (U) In FY 2010: No planned effort in FY 2010. ***FY 2011 Plans:*** (U) In FY 2011: No planned effort in FY 2011. ***FY 2012 Base Plans:*** (U) In FY 2012: Requirements development for AGCAS will be accomplished. In addition, design work will begin to develop design solutions for Block 20, 30, and 35. ***FY 2012 OCO Plans:***	-	-	18.110	-	18.110
Title: Aircraft 4006 Upgrade	-	-	10.168	-	10.168

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: (U) To support testing activities, upgrade 4006 from its current EMD configuration to a Block 20 (training fleet representative) aircraft configuration; the instrumentation package will also be upgraded. ***FY 2010 Accomplishments:*** (U) In FY 2010: No planned effort in FY10 ***FY 2011 Plans:*** (U) In FY 2011: No planned effort in FY11. ***FY 2012 Base Plans:*** (U) In FY 2012: Purchase parts; engineering design modification and instrumentation. ***FY 2012 OCO Plans:***					
Title: 5th Generation Architecture ***Description:*** (U) Conduct studies and analysis to reduce the risk of integrating F-35 hardware and fusion architecture on-board the F-22. The goal of this effort is to ultimately reduce F-22 and F-35 modernization costs and timeline (development, test, and fielding) with more cost-effective solutions leveraging commonality and synergy. ***FY 2010 Accomplishments:*** (U) In FY 2010: No planned activitiy in FY 2010 ***FY 2011 Plans:*** (U) In FY 2011: No planned activitiy in FY 2011 ***FY 2012 Base Plans:*** (U) In FY 2012: Study and analysis of the 5th Generation Architecture integration onto F22. ***FY 2012 OCO Plans:***	-	-	10.000	-	10.000
Title: Laboratory Obsolescence ***Description:*** (U) Several components in the labs have exceeded their useful life and require replacing/ upgrading. ***FY 2010 Accomplishments:***	-	-	8.134	-	8.134

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
(U) In FY 2010: No planned activity in FY10. ***FY 2011 Plans:*** (U) In FY 2011: No planned activity in FY11. ***FY 2012 Base Plans:*** (U) In FY 2012: Lab upgrades to include Honeywell ECS equipment, BAE EW Alphas, RAIL SGI Computer replacement, ECS Lab Obsolescence, Calibration Test Bench, IL FTE. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	559.455	576.330	718.432	-	718.432

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207138F: *F-22A Squadrons APAF**	269.827	602.634	385.755	0.000	385.755	411.690	550.440	451.350	459.298	Continuing	Continuing
• PE 0207138F (1): *F-22A Squadrons, OPAF*	1.207	1.452	1.699	0.000	1.699	1.200	1.218	1.092	1.095	Continuing	Continuing
• PE 0207219F: *APAF, Advanced Tactical Fighter* **	96.758	159.915	105.335	0.000	105.335	1.289	1.307	1.330	1.354	Continuing	Continuing
• PE 0207138F (3): *MILCON*	38.838	22.125	16.500	0.000	16.500	11.740	0.000	0.000	0.000	Continuing	Continuing
• PE 0207219F (4): *PAAF*	15.896	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0207445F: *Tactical Data Link RDT&E*	47.162	57.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0207163F: *AIM-120D RDT&E*	3.800	11.800	24.700	0.000	24.700	27.600	17.960	0.850	0.000	Continuing	Continuing

D. Acquisition Strategy

The Raptor Enhancement Development & Integration (REDI) contract is an Indefinite Delivery/Indefinite Quantity Ordering contract that maximizes flexibility to start, stop, accelerate and decelerate projects as required. The REDI contract was established to be more responsive to evolving war fighter requirements. The REDI contract allows the issuance of orders for the highest priority war fighter capabilities in operationally meaningful capability increments, requirements analysis, contractor cost estimates and studies, development and demonstration of capability enhancements, and unanticipated future war fighter requirements. Each increment is broken into phases to initiate requirements analysis, the design phase and the development, integration and verification phase of a specific incremental development effort.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207138F: *F-22 SQUADRONS*	PROJECT 674785: *F-22*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Support	SS/CPIF	Lockheed Martin:Fort Worth, TX	51.930	60.200	Dec 2010	62.249	Dec 2011	-		62.249	Continuing	Continuing	0.000
System Engineering / Program Management	SS/CPIF	Lockheed Martin:Fort Worth, TX	17.333	17.636	Dec 2010	17.898	Dec 2011	-		17.898	Continuing	Continuing	0.000
RAMMP	SS/CPFF	Lockheed Martin:Fort Worth, TX	17.184	12.670	Jan 2011	18.000	Dec 2011	-		18.000	Continuing	Continuing	0.000
Increment 3.1	SS/CPIF	Lockheed Martin:Fort Worth, TX	37.540	13.432	Dec 2010	-		-		-	0.000	50.972	0.000
Increment 3.2A	SS/CPIF	Lockheed Martin:Fort Worth, TX	67.178	75.805	Jan 2011	129.450	Dec 2011	-		129.450	152.630	425.063	0.000
Increment 3.2B	SS/CPIF	Lockheed Martin:Fort Worth, TX	87.628	140.942	Jan 2011	125.295	Dec 2011	-		125.295	426.620	780.485	0.000
VAX Migration	SS/CPIF	Lockheed Martin:Fort Worth, TX	58.658	39.692	Nov 2010	31.307	Dec 2011	-		31.307	29.623	159.280	0.000
F-22 Modernization	SS/Various	Lockheed Martin:Fort Worth, TX	14.204	19.275	Dec 2010	12.638	Dec 2011	-		12.638	Continuing	Continuing	0.000
Crypto-Modernization	SS/CPIF	Lockheed Martin:Fort Worth, TX	-	2.380	Mar 2011	7.245	Dec 2011	-		7.245	39.885	49.510	0.000
Advanced Technology Development	SS/CPIF	Lockheed Martin:Fort Worth, TX	0.300	9.623	Nov 2010	60.558	Jan 2012	-		60.558	Continuing	Continuing	0.000
Auto Ground Collision Avoidance System (AGCAS)	SS/CPIF	Lockheed Martin:Fort Worth, TX	-	-		18.110	Jan 2012	-		18.110	69.700	87.810	0.000
Aircraft 4006 Upgrade	SS/CPIF	Lockheed Martin:Fort Worth, TX	-	-		10.168	Dec 2011	-		10.168	0.000	10.168	0.000
5th Generation Architecture	SS/CPIF	Lockheed Martin:Fort Worth, TX	-	-		10.000	Dec 2011	-		10.000	Continuing	Continuing	0.000
		Subtotal	351.955	391.655		502.918		-		502.918			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207138F: *F-22 SQUADRONS*	PROJECT 674785: *F-22*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Support	C/Various	Various:Various,	11.879	13.933	Oct 2010	14.000	Oct 2011	-		14.000	Continuing	Continuing	0.000
		Subtotal	11.879	13.933		14.000		-		14.000			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Combined Test Force	Various	Various:Various,	110.671	93.700	Nov 2010	95.246	Dec 2011	-		95.246	Continuing	Continuing	0.000
Laboratory Test & Operations (LTO)	SS/CPIF	Lockheed Martin:Ft Worth, TX	84.950	77.042	Nov 2010	98.134	Dec 2011	-		98.134	Continuing	Continuing	0.000
Laboratory Obsolescence	SS/Various	Lockheed Martin:Ft Worth, TX	-	-		8.134	Jan 2012	-		8.134	Continuing	Continuing	0.000
		Subtotal	195.621	170.742		201.514		-		201.514			0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	559.455	576.330		718.432		-		718.432			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
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Modernization Master Planning Schedule Summary

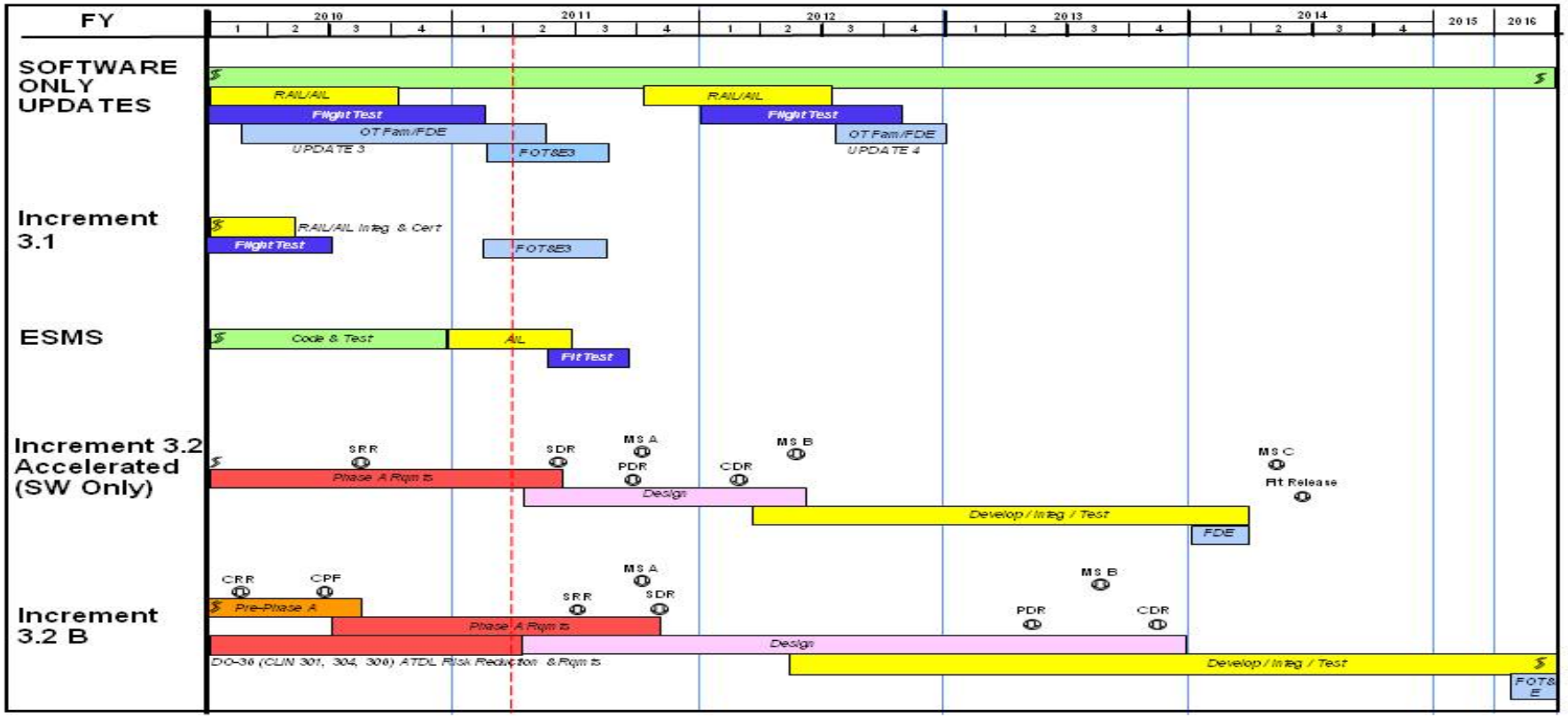

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
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Modernization Master Planning Schedule Summary Cont.

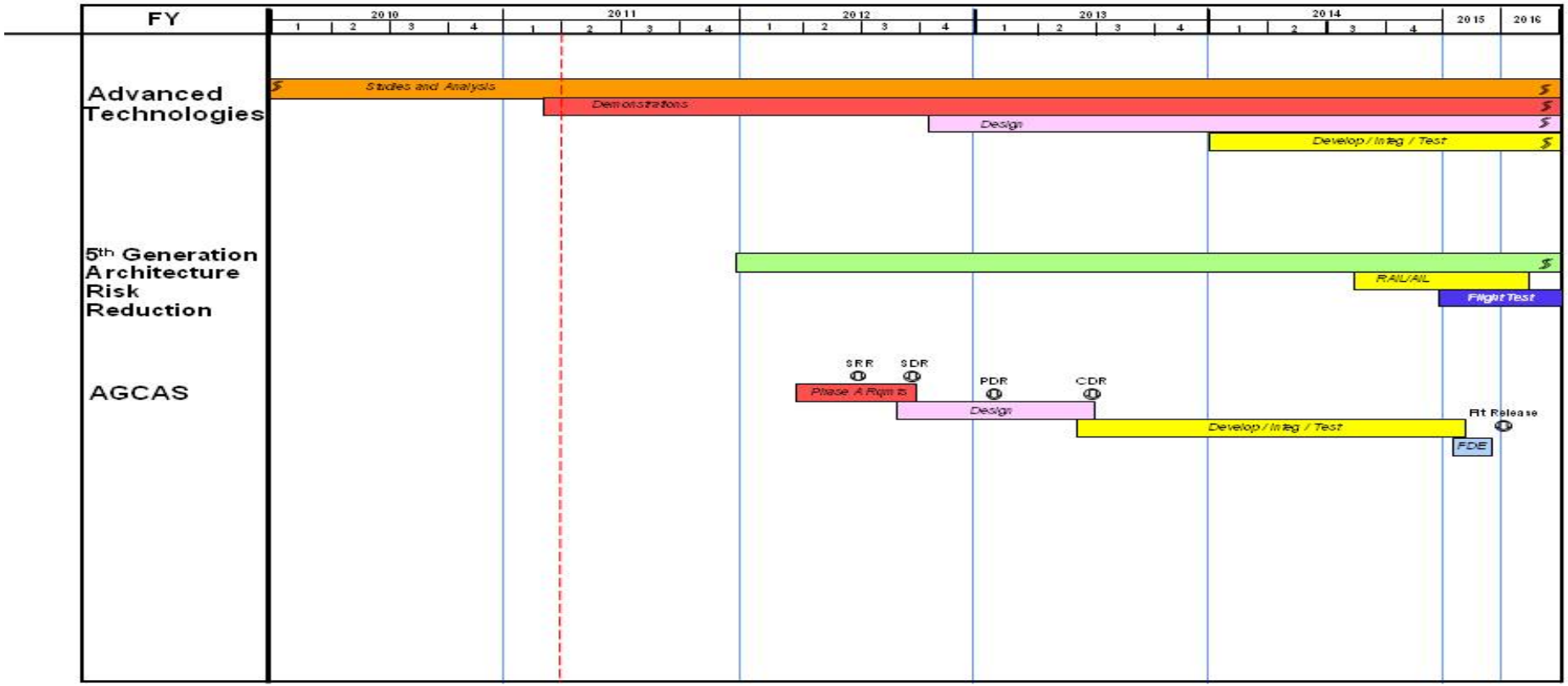

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207138F: *F-22 SQUADRONS*	**PROJECT** 674785: *F-22*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Increment 3.1 Development, Integration, & Test - Actual Start: 4Q 2007	4	2010	3	2011
ESMS Development, Integration, & Test – Actual Start: 4Q 2008	4	2010	1	2012
Increment 3.2A & Increment 3.2B Material Development Decision (MDD)	3	2011	3	2011
Increment 3.2A Milestone B	2	2012	2	2012
Increment 3.2B Milestone B	3	2013	3	2013
Increment 3.2B Capability Requirements Review (CRR)	1	2010	1	2010
Increment 3.2B Capability/Pilot-Vehicle Interface Mecanization Freeze	3	2010	3	2010
Increment 3.2A System Requirements Review (SRR)	3	2010	3	2010
Increment 3.2A System Design Review (SDR)	2	2011	2	2011
Increment 3.2B System Requirements Review (SRR)	2	2011	2	2011
Increment 3.2B System Design Review (SDR)	4	2011	4	2011
Increment 3.2A Preliminary Design Review (PDR)	3	2011	3	2011
Increment 3.2B Preliminary Design Review (PDR)	2	2013	2	2013
Increment 3.2A Critical Design Review (CDR)	1	2012	1	2012
Increment 3.2B Critical Design Review (CDR)	4	2013	4	2013
Initiate 3.2A Development, Integration, & Test	1	2012	1	2012
Initiate 3.2B Development, Integration, & Test	2	2012	2	2012
Advanced Technology Development Studies & Analysis	1	2010	4	2016
Advanced Technology Development Demonstrations	1	2011	4	2016
Advanced Technology Development Design	4	2012	4	2016
5th Generation Architecture Risk Reduction	1	2012	4	2016
AGCAS Requirements Analysis	1	2012	4	2012

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
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	Start		End	
Events	Quarter	Year	Quarter	Year
AGCAS System Requirements Review (SRR)	2	2012	2	2012
AGCAS Systen Design Review (SDR)	4	2012	4	2012
Initiate AGCAS Design	4	2012	3	2013
AGCAS Preliminary Design Review (PDR)	1	2013	1	2013
AGCAS Critical Design Review (CDR)	3	2013	3	2013
AGCAS Development, Integration, & Test	2	2013	2	2015

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207142F: *Joint Strike Fighter Squadrons*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	-	217.561	47.841	-	47.841	132.495	131.844	129.164	151.614	Continuing	Continuing
675294: *Theater Air Control System Improvement - Radar (TACSI-R)*	-	159.837	-	-	-	-	-	-	-	Continuing	Continuing
675346: *F-35*	-	57.724	37.874	-	37.874	112.583	80.084	49.558	50.151	Continuing	Continuing
676011: *JSF DUAL CAPABLE AIRCRAFT*	-	-	9.967	-	9.967	19.912	51.760	79.606	101.463	Continuing	Continuing

Note

This funding is included in funding for PRCP Program Number, 198, JSF.

In FY 2012, Project 676011 Dual Capable Aircraft includes new start efforts.

PE 0207142F was a new PE for Joint Strike Fighter (JSF) starting in FY11 for post SDD enhancements. PE 0604800F is the USAF RDT&E funding for JSF SDD.

Program funding reflects reductions to overhead. These efficiencies total $.643M in FY12, and do not impact program content.

A. Mission Description and Budget Item Justification

The Joint Strike Fighter (JSF) program will develop and deploy a family of highly common, affordable next generation, stealthy, multi-role strike fighter aircraft that meets the needs of the USN, USAF, USMC and allies with maximum commonality among the variants, consistent with National Disclosure Policy, to minimize life cycle costs. This is a joint program with no executive service. Navy and Air Force each provide approximately equal shares of annual funding to the program. The United Kingdom and seven other international countries, and four Foreign Military Sales cases are participants in the JSF program. Follow-on Development will continue the evolutionary approach of SDD by providing capability enhancements through a combined incremental and spiral methodology. The Joint Capabilities Integration and Development System (JCIDS) and Defense Acquisition System (DAS) will provide the framework and basis for defining, managing and acquiring the envisioned F-35 enhancements. This program is funded under Operational Systems Development because it funds efforts to upgrade systems for full rate production. Funding in project 675294 for FY11 has been loaded to PE 0207142F in error, and should be in PE 0604800F. The following exhibits reflect the requested transfer amount.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207142F: *Joint Strike Fighter Squadrons*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	217.561	102.144	-	102.144
Current President's Budget	-	217.561	47.841	-	47.841
Total Adjustments	-	-	-54.303	-	-54.303
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-54.303	-	-54.303

Change Summary Explanation

FY12 changes due to program restructure.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207142F: *Joint Strike Fighter Squadrons*	PROJECT 675294: *Theater Air Control System Improvement - Radar (TACSI-R)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675294: *Theater Air Control System Improvement - Radar (TACSI-R)*	-	159.837	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Funding in project 675294 for FY12 and beyond has been loaded to PE 0207142F in error, and should be in PE 0604800F.

A. Mission Description and Budget Item Justification

Funding in project 675294 for FY12 and beyond has been loaded to PE 0207142F in error, and should be in PE 0604800F. The Joint Strike Fighter (JSF) program will develop and deploy a family of highly common, affordable next generation, stealthy, multi-role strike fighter aircraft that meets the needs of the USN, USAF, USMC and allies with maximum commonality among the variants, consistent with National Disclosure Policy, to minimize life cycle costs. This is a joint program with no executive service. Navy and Air Force each provide approximately equal shares of annual funding to the program. The United Kingdom and seven other international countries, and four Foreign Military Sales cases are participants in the JSF program. Follow-on Development will continue the evolutionary approach of SDD by providing capability enhancements though a combined incremental and spiral methodology. The Joint Capabilities Integration and Development System (JCIDS) and Defense Acquisition System (DAS) shall provide the framework and basis for defining, managing and acquiring the envisioned F-35 enhancements. This program is funded under Operational Systems Development because it funds efforts to upgrade systems for which we anticipate approval for full rate production.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: TACSI-R ***Description:*** Funding inadvertently added to incorrect PE - technical adjustment requested in FY11 PB. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** See description. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***	-	159.837	-	-	-
Accomplishments/Planned Programs Subtotals	-	159.837	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207142F: *Joint Strike Fighter Squadrons*	PROJECT 675294: *Theater Air Control System Improvement - Radar (TACSI-R)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207142F: *Joint Strike Fighter Squadrons*	PROJECT 675294: *Theater Air Control System Improvement - Radar (TACSI-R)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Theater Air Control System Improvement - Radar (TACSI-R)	TBD	Not specified.:,	-	159.837	Jan 2011	-		-		-	0.000	159.837	0.000
		Subtotal	-	159.837		-		-		-	0.000	159.837	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	159.837		-		-		-	0.000	159.837	0.000

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207142F: *Joint Strike Fighter Squadrons*	PROJECT 675346: *F-35*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675346: *F-35*	-	57.724	37.874	-	37.874	112.583	80.084	49.558	50.151	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

This funding is included in totals for PRCP number 198, JSF.

A. Mission Description and Budget Item Justification

The Joint Strike Fighter (JSF) program will develop and deploy a family of highly common, affordable next generation, stealthy, multi-role strike fighter aircraft that meets the needs of the USN, USAF, USMC and allies with maximum commonality among the variants, consistent with National Disclosure Policy, to minimize life cycle costs. This is a joint program with no executive service. Navy and Air Force each provide approximately equal shares of annual funding to the program. The United Kingdom and seven other international countries cases are participants in the JSF program. Follow-on Development will continue the evolutionary approach of SDD by providing capability enhancements though a combined incremental and spiral methodology. The Joint Capabilities Integration and Development System (JCIDS) and Defense Acquisition System (DAS) shall provide the framework and basis for defining, managing and acquiring the envisioned F-35 enhancements. This program is funded under Operational Systems Development because it funds efforts to upgrade systems for full rate production.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Air Vehicle FoD	-	57.684	37.572	-	37.572
Description: Follow-on development Block 4 capabilities; includes logistics, weapons, security, sensors, survivability, upgrades & urgent operational requirements with 2015 delivery to services & partners. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** Initiate follow-on development Block 4 capabilities; includes logistics, weapons, security, sensors, survivability, upgrades & urgent operational requirements with 2015 delivery to services & partners. ***FY 2012 Base Plans:*** Continue follow-on development Block 4 capabilities; includes logistics, weapons, security, sensors, survivability, upgrades & urgent operational requirements with 2015 delivery to services & partners. ***FY 2012 OCO Plans:***					
Title: Follow-on Development Support	-	0.040	0.302	-	0.302

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207142F: *Joint Strike Fighter Squadrons*	PROJECT 675346: *F-35*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Management support services, travel, test, engineering technical services and studies analyses required to support F-35 variants. Efforts support aircraft and engine follow-on development. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** Initiate management support services, test, travel, engineering technical services in support of Follow-on Development. ***FY 2012 Base Plans:*** Continue management support services, test, travel, engineering technical services in support of Follow-on Development. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	-	57.724	37.874	-	37.874

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0604800F: *USAF RDT&E*	2,033.521	883.773	1,387.926	0.000	1,387.926	1,198.293	933.452	608.211	361.064	Continuing	Continuing
• PE 0604800N: *USN RDT&E*	1,855.177	667.915	650.773	0.000	650.773	725.043	706.512	588.704	462.301	Continuing	Continuing
• PE 0604800M: *USMC RDT&E*	0.000	667.916	670.723	0.000	670.723	741.600	703.575	585.759	459.571	Continuing	Continuing
• PE 0604800N (3): *USN RDT&E - USRL*	30.998	39.876	26.713	0.000	26.713	19.473	0.000	0.000	0.000	Continuing	Continuing
• PE not applicable: *Int'l Partner RDT&E*	161.511	200.912	122.474	0.000	122.474	144.220	2.800	0.000	0.000	Continuing	Continuing
• PE 0207142F: *USAF Procurement*	2,357.949	4,191.142	3,664.092	0.000	3,664.092	3,764.260	5,285.022	5,985.244	7,703.525	Continuing	Continuing
• PE 0204146N: *USN Procurement*	4,449.336	1,886.988	1,720.762	0.000	1,720.762	2,405.858	2,429.364	2,952.444	2,790.723	Continuing	Continuing
• PE 0204146M: *USMC Procurement*	0.000	2,576.142	1,259.162	0.000	1,259.162	1,296.310	1,379.916	1,865.005	2,709.859	Continuing	Continuing
• PE not applicable (8): *Int'l Partner Procurement*	727.462	733.662	1,372.792	0.000	1,372.792	3,010.273	4,791.824	7,367.035	6,817.101	Continuing	Continuing
	3.017	5.410	5.665	0.000	5.665	3.848	4.895	5.615	5.670	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207142F: *Joint Strike Fighter Squadrons*	PROJECT 675346: *F-35*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 426500: *USN Other Procurement*											
• PE 0207142F (10): *USAF Initial Spares and Repair Parts*	129.296	263.573	151.469	0.000	151.469	322.076	340.956	508.599	770.495	Continuing	Continuing
• PE 0204146N (11): *USN Initial Spares and Repair Parts*	248.184	107.030	86.902	0.000	86.902	101.272	331.063	313.699	91.696	Continuing	Continuing
• PE 0204146M (12): *USMC Initial Spares and Repair Parts*	0.000	164.135	66.430	0.000	66.430	33.290	63.484	124.794	224.075	Continuing	Continuing
• PE 0207142F (13): *USAF MILCON*	67.529	139.640	31.050	0.000	31.050	89.000	72.000	69.050	65.000	Continuing	Continuing
• PE 0212576N: *USN MILCON*	3.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0207142F (15): *USAF Modifications*	0.000	123.936	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Follow-on Development will continue the evolutionary approach of SDD by providing capability enhancements though an incremental methodology. The Joint Capabilities Integration and Development System (JCIDS) and Defense Acquisition System (DAS) will provide the framework and basis for defining, managing and acquiring the envisioned F-35 enhancements. The plan for each follow-on increment will include all development, integration and verification testing of those capabilities. Additionally, non-recurring efforts for cut-in of FoD retrofit, production and sustainment will be included. Retrofit planning will be based on upgrading all previously fielded aircraft to the latest increment in order to limit the number of configurations, thus reducing life cycle cost. Retrofit execution will be in accordance with stakeholders direction.

These follow-on development efforts will be procured via cost type contracts. It is anticipated that fee provisions will be used to target and motivate contractor performance. The new configurations will be incorporated into production and, if required by the U.S. Services or SDD International Partners, retrofitted to fielded aircraft under F-35 production and sustainment contracts. Similar to SDD, BOAs and ID/IQ contracts may be used for trade studies and analyses to supplement Follow-On requirements development.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207142F: *Joint Strike Fighter Squadrons*	PROJECT 675346: *F-35*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Lockheed Martin	SS/CPAF	Lockheed Martin:Ft Worth, TX	-	57.684	Jan 2011	37.572	Oct 2011	-		37.572	Continuing	Continuing	0.000
		Subtotal	-	57.684		37.572		-		37.572			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ASC/AFRL	Various	Various:Wright Patterson AFB, OH	-	-		0.010	Oct 2011	-		0.010	Continuing	Continuing	0.000
Eglin Development Support	Various	Various:Eglin AFB, FL	-	-		0.225	Oct 2011	-		0.225	Continuing	Continuing	0.000
Product Development System Engineering	Various	Various:Various,	-	0.040	Feb 2011	0.067	Oct 2011	-		0.067	Continuing	Continuing	0.000
		Subtotal	-	0.040		0.302		-		0.302			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	57.724		37.874		-		37.874			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207142F: *Joint Strike Fighter Squadrons*	PROJECT 675346: *F-35*	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207142F: *Joint Strike Fighter Squadrons*	PROJECT 675346: *F-35*

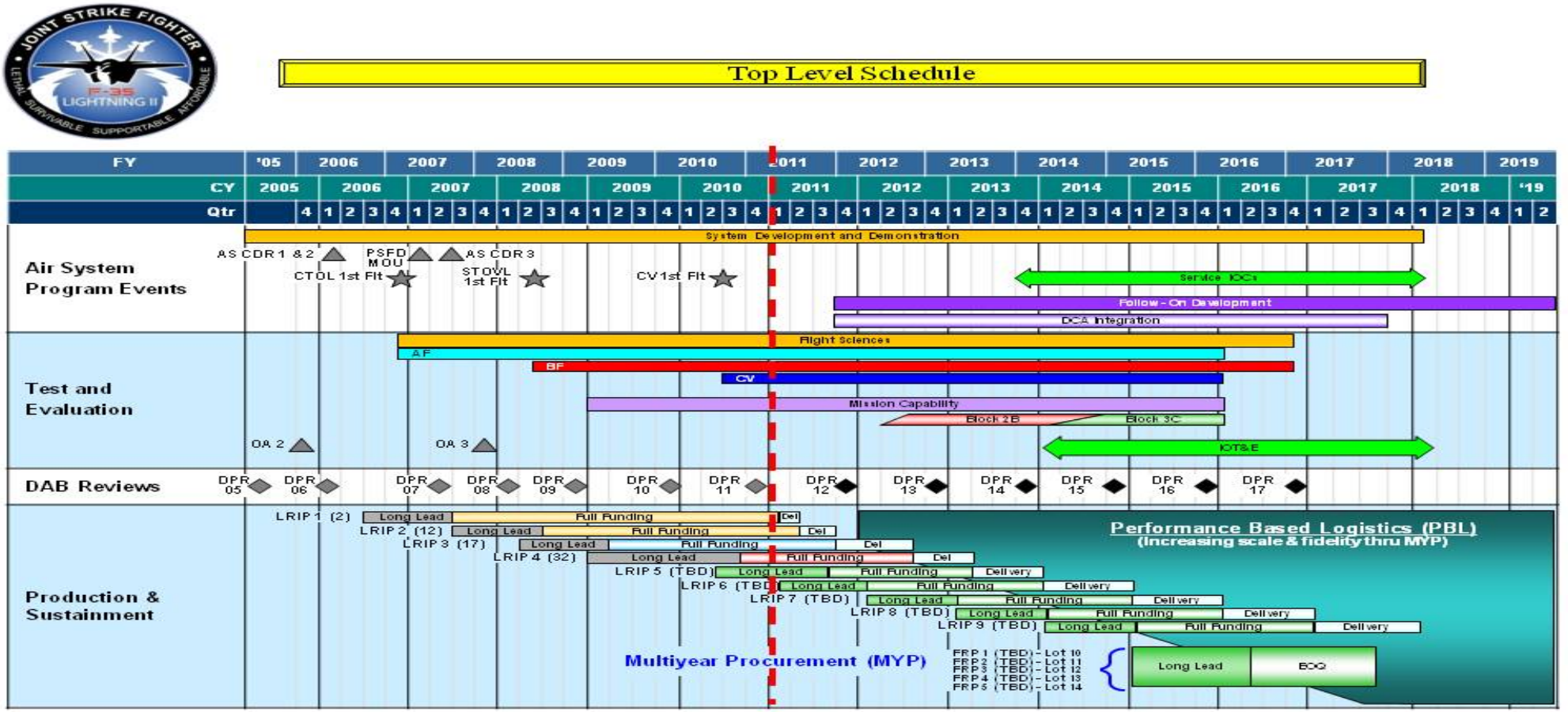

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207142F: *Joint Strike Fighter Squadrons*	**PROJECT** 675346: *F-35*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
DAB Program Review (DPR)	1	2011	1	2011
Follow-On Development Contract Award	1	2012	3	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207142F: *Joint Strike Fighter Squadrons*	PROJECT 676011: *JSF DUAL CAPABLE AIRCRAFT*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
676011: *JSF DUAL CAPABLE AIRCRAFT*	-	-	9.967	-	9.967	19.912	51.760	79.606	101.463	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

This funding is included in totals for PRCP number 198, JSF.

A. Mission Description and Budget Item Justification

The Joint Strike Fighter (JSF) program will develop and deploy a family of highly common, affordable next generation, stealthy, multi-role strike fighter aircraft that meets the needs of the USN, USAF, USMC and allies with maximum commonality among the variants, consistent with National Disclosure Policy, to minimize life cycle costs. The Joint Contract Specification requirements call for the F-35A (CTOL) Variant Air Vehicle to have the capabilities and provisions for Dual Capable Aircraft (DCA) operations. DCA refers to the capability to carry and deliver conventional or non-conventional weapons. DCA operation is internal carriage of two B-61s. In accordance with the Operational Requirements Document, DCA will be integrated in the first post-SDD block upgrade in time to meet Joint Strategic Capabilities Plan force structure requirements.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: DCA	-	-	9.967	-	9.967
Description: Post-SDD execution for the CTOL F-35 to incorporate dual-capability in the first post SDD block upgrade in time to meet joint Strategic Capabilities Plan force structure requirements in order to achieve operational capability					
FY 2010 Accomplishments:					
FY 2011 Plans:					
FY 2012 Base Plans: Initiate efforts to incorporate dual-capability in to the first post SDD block upgrade.					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	-	-	9.967	-	9.967

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207142F: *Joint Strike Fighter Squadrons*	PROJECT 676011: *JSF DUAL CAPABLE AIRCRAFT*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0604800F: *USAF RDT&E*	2,033.521	883.773	1,387.926	0.000	1,387.926	1,198.293	933.452	608.211	361.064	Continuing	Continuing
• PE 0207142F: *USAF APAF*	2,357.949	3,986.242	3,664.092	0.000	3,664.092	3,764.260	5,285.022	5,985.244	7,703.525	Continuing	Continuing
• PE 0207142F (2): *USAF APAF Spares*	129.296	263.573	151.469	0.000	151.469	322.076	340.956	508.599	770.495	Continuing	Continuing
• PE 0207142F (3): *USAF MILCON*	67.529	139.640	31.050	0.000	31.050	89.000	72.000	69.050	65.000	Continuing	Continuing
• PE 0207142F (4): *USAF Modifications*	0.000	123.936	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

The Joint Contract Specification requirements call for the F-35A (CTOL) Variant Air Vehicle to have the capabilities and provisions for Dual Capable Aircraft (DCA) operations. Capable refers to the capability to carry and deliver conventional or non-conventional weapons. Dual capable operation is internal carriage of two B61. Capability is required per the Operational Requirements Document to be included in F-35 first post-SDD block upgrade aircraft. Funding completes integration and conduct certification trials to field the DCA capability.

Under the System Development and Demonstration (SDD) Phase of the F-35 Program (embedded within PE 0604800F), the F-35 Air Vehicle was designed to provide for the future full integration of the B61 weapon. This entailed ensuring that sufficient physical volume be reserved for the weapon and its parent carriage equipment, AME and the capability provide the system 2 interface. Design provision included the space necessary to load, carry, and release the B61 as well as the space needed for the physical interface points, both in the Main Weapon Bay (electrical access panels, harness points, and S&RE Access) and applicable pilot interface. Electrical and functional provisions include power and signals to support weapon statusing and employment as well as the relevant wiring harnesses.

Under the Follow-on Development (FoD) phase (PE: 0207142F, Project 676011 DCA) tasks will complete the integration of the DCA capability and will conduct certification trials necessary to field the DCA capability.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207142F: *Joint Strike Fighter Squadrons*	PROJECT 676011: *JSF DUAL CAPABLE AIRCRAFT*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Lockheed Martin	Various	Lockheed Martin:Ft. Worth, TX	-	-		9.967	Oct 2012	-		9.967	329.000	338.967	0.000
		Subtotal	-	-		9.967		-		9.967	329.000	338.967	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		9.967		-		9.967	329.000	338.967	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207142F: *Joint Strike Fighter Squadrons*	PROJECT 676011: *JSF DUAL CAPABLE AIRCRAFT*

Top Level Schedule

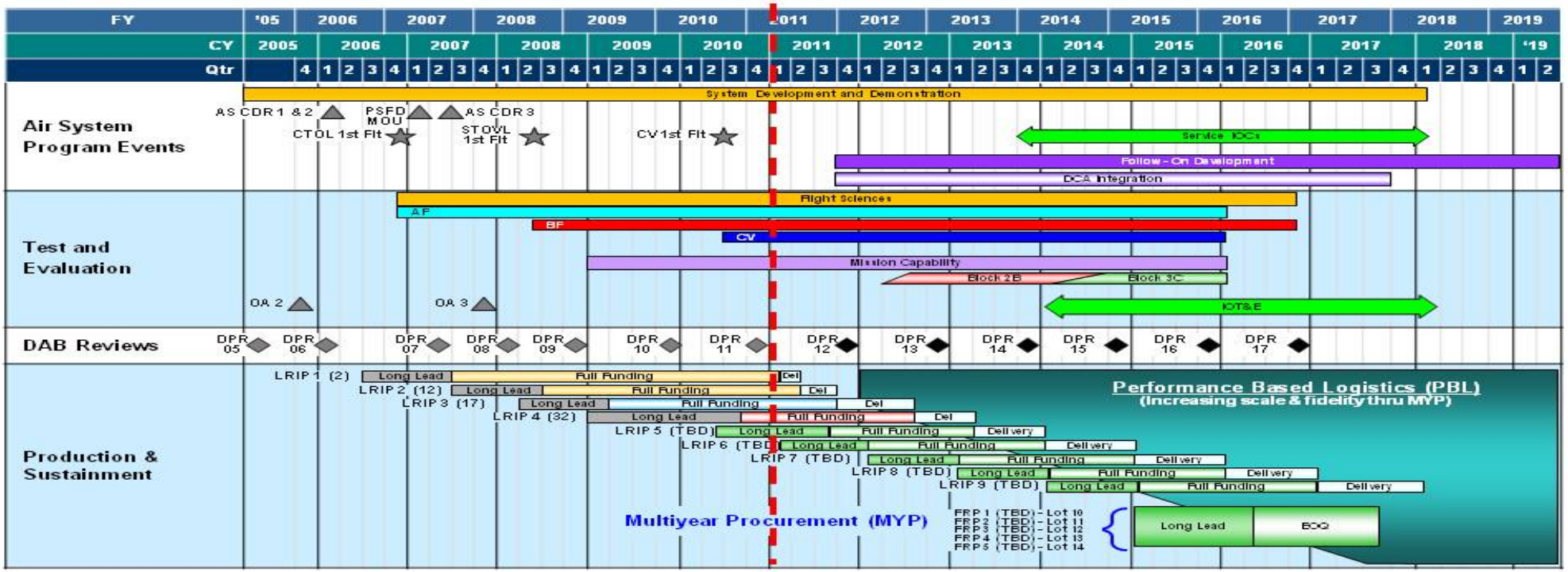

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207142F: *Joint Strike Fighter Squadrons*	**PROJECT** 676011: *JSF DUAL CAPABLE AIRCRAFT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
DCA Contract award	3	2012	3	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207161F: *Tactical AIM Missiles*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	5.890	6.040	8.023	-	8.023	8.219	9.675	10.710	12.766	Continuing	Continuing
674132: *AIM-9 Product Improvement*	5.890	6.040	8.023	-	8.023	8.219	9.675	10.710	12.766	Continuing	Continuing

A. Mission Description and Budget Item Justification

The AIM-9X Sidewinder short-range air-to-air missile is a long-term evolution of the AIM-9 series of fielded missiles. The AIM-9X missile program provides a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft and complements the Advanced Medium Range Air-to-Air Missile (AMRAAM). Air superiority in the short range air-to-air missile arena is essential and includes first-shot, first-kill opportunity against an enemy employing IR countermeasures. The AIM-9X employs several components common with the AIM-9M (fuse, rocket motor, and warhead). Anti-Tamper features have been incorporated to protect improvements inherent in this design. AIM-9X is a Post Milestone III, Acquisition Category 1C (ACAT 1C) joint-service program with Navy lead.

The program is in full-rate production (FRP) with Lot 10 contract awarded in June 2010. Beginning with the Lot 9 contract award, the missile will include the preplanned product improvements (P3I) that resolve critical obsolescence associated with the CPU processors, as well as, appropriate software updates. This budget line item will fund the development, test and integration of software updates to the missile, insensitive munitions improvements and aircraft platform integration, to ensure these capabilities perform in accordance with established requirements.

Prior years funding estimate is $261.750M.
The To Complete funding estimate is $61.323M.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207161F: *Tactical AIM Missiles*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	5.915	6.040	6.135	-	6.135
Current President's Budget	5.890	6.040	8.023	-	8.023
Total Adjustments	-0.025	-	1.888	-	1.888
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.025	-	1.888	-	1.888

Change Summary Explanation

FY12 funding added to pay for AF portion of Insensitive Munitions (IM) effort.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207161F: *Tactical AIM Missiles*	PROJECT 674132: *AIM-9 Product Improvement*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674132: *AIM-9 Product Improvement*	5.890	6.040	8.023	-	8.023	8.219	9.675	10.710	12.766	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Totals include funding for PRCP Program Number 581, Tactical Air Intercept/AIM-9X.

A. Mission Description and Budget Item Justification

The AIM-9X Sidewinder short-range air-to-air missile is a long-term evolution of the AIM-9 series of fielded missiles. The AIM-9X missile program provides a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft and complements the Advanced Medium Range Air-to-Air Missile (AMRAAM). Air superiority in the short range air-to-air missile arena is essential and includes first-shot, first-kill opportunity against an enemy employing IR countermeasures. The AIM-9X employs several components common with the AIM-9M (fuse, rocket motor, and warhead). Anti-Tamper features have been incorporated to protect improvements inherent in this design. AIM-9X is a Post Milestone III, Acquisition Category 1C (ACAT 1C) joint-service program with Navy lead.

The program is in full-rate production (FRP) with Lot 10 contract awarded in June 2010. Beginning with the Lot 9 contract award, the missile will include the preplanned product improvements (P3I) that resolve critical obsolescence associated with the CPU processors, as well as, appropriate software updates. This budget line item will fund the development, test and integration of software updates to the missile, insensitive munitions improvements and aircraft platform integration, to ensure these capabilities perform in accordance with established requirements.

Prior years funding estimate is $261.750M.
The To Complete funding estimate is $61.323M.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Product Development	2.972	3.247	4.490	-	4.490
Description: Continue Software/Operational Flight Program (OFP) Upgrades					
FY 2010 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207161F: *Tactical AIM Missiles*	**PROJECT** 674132: *AIM-9 Product Improvement*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Funds the development, test and integration of software updates to the missile, as well as, aircraft platform integration to ensure these capabilities perform IAW established requirements. Provides system engineering/ program management and support required to ensure missile integration with threshold AF/Navy aircraft platforms. Continues the v9.3 algorithm and code development in support of the missile integration effort. ***FY 2011 Plans:*** Funds the development, test and integration of software updates to the missile, as well as, aircraft platform integration to ensure these capabilities perform IAW established requirements. Provides system engineering/ program management and support required to ensure missile integration with threshold AF/Navy aircraft platforms. Funds the v9.4 algorithm and code development in support of the missile integration effort. ***FY 2012 Base Plans:*** Funds the development, test and integration of software updates to the missile, as well as, aircraft platform integration to ensure these capabilities perform IAW established requirements. Provides system engineering/ program management and support required to ensure missile integration with threshold AF/Navy aircraft platforms. Continue the v9.4 algorithm and code development in support of the missile integration effort. ***FY 2012 OCO Plans:***					
Title: Test and Evaluation ***Description:*** Continue DT&E/OT&E for P3I updates and FOT&E efforts ***FY 2010 Accomplishments:*** Funds T&E and associated Governmental test support required to ensure the missile integration with threshold AF/Navy aircraft platforms. Funds continuation of Block II v9.2 DT and initiates Block II v9.3 DT for missile integration. Continues to provide for in-house and contractor support. ***FY 2011 Plans:*** Funds T&E and associated Governmental test support required to ensure the missile integration with threshold AF/Navy aircraft platforms. Funds continuation of Block II v9.3 DT for missile integration. Continues to provide for in-house and contractor support. ***FY 2012 Base Plans:***	2.918	2.793	3.533	-	3.533

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207161F: *Tactical AIM Missiles*	PROJECT 674132: *AIM-9 Product Improvement*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Funds T&E and associated Governmental test support required to ensure the missile integration with threshold AF/Navy aircraft platforms. Funds continuation of Block II v9.3 DT for missile integration. Continues to provide for in-house and contractor support.					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	5.890	6.040	8.023	-	8.023

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207161F: *Tactical AIM Missile Modification, MPAF (BP21)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0207161F (1): *Tactical AIM Missile Procurement, MPAF (BP20)*	78.527	64.523	88.769	0.000	88.769	87.785	82.729	83.212	83.626	Continuing	Continuing
• PE 0207161F (2): *Tactical AIM Missile Procurement, MPAF (BP25)*	0.817	3.514	7.866	0.000	7.866	8.831	10.728	10.838	11.033	Continuing	Continuing
• PE 0207161F (3): *Tactical AIM Missile Procurement, MPAF (BP26)*	1.571	1.558	1.659	0.000	1.659	1.647	1.650	1.736	1.766	Continuing	Continuing

D. Acquisition Strategy

The Low-Rate Initial Production (LRIP) 4, Lot 4, Firm-Fixed-Price (FFP) contract was awarded Apr 04. ASN(RD&A) approved the FRP decision in May 04. FRP 1, Lot 5 contract awarded Nov 04. FRP 1, Lot 5 through FRP 3, Lot 7 contracts awarded Nov 06. Rewards/penalties are provided depending on RMS performance relative to the Procurement Price Commitment Curve (PPCC) for Lots 5 through 7 (FY05 through FY07). FRP 4, Lot 8 (FY08) contract was negotiated outside of the PPCC, and was awarded in Jan 08. The FRP 5, Lot 9 (FY09) contract was awarded in Jun 09, and incorporated the new electronics unit into the Captive Air Training Missiles resolving critical obsolescence issues, as well as, a low quantity of Block II test articles to prove out the capability and producibility of the Block II missile. The FRP 6, Lot 10 (FY10) contract was awarded in Jun 10 to procure Block I AUR missiles, as well as, additional Block II tactical test articles. Following successful Block II MS C approval in 3QFY11, the program will enter into LRIP contracts for Block II in FY11 and FY12, followed by Block II FRP in FY13 and beyond. In the event that a Block II program is not approved, the Services will continue to procure the less capable missile in FY11.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207161F: *Tactical AIM Missiles*	PROJECT 674132: *AIM-9 Product Improvement*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
RMS Software/OFP Upgrade	C/CPIF	RMS:Tucson, AZ	9.075	3.247	Jan 2011	4.490	Jan 2012	-		4.490	29.800	46.612	0.000
RMS P3I Contract	C/CPIF	RMS:Tucson, AZ	24.188	-	Dec 2010	-		-		-	11.400	35.588	0.000
		Subtotal	33.263	3.247		4.490		-		4.490	41.200	82.200	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
In House Support	MIPR	PMA-259:Patuxent River, MD	2.926	0.497	Jan 2011	0.522	Jan 2012	-		0.522	15.000	18.945	0.000
		Subtotal	2.926	0.497		0.522		-		0.522	15.000	18.945	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DT&E/OT&E for P3I	PO	Various:Various,	47.311	2.296	Nov 2010	3.011	Nov 2011	-		3.011	7.500	60.118	0.000
		Subtotal	47.311	2.296		3.011		-		3.011	7.500	60.118	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	Not specified.:,	0.275	-		-		-		-	3.000	3.275	0.000
		Subtotal	0.275	-		-		-		-	3.000	3.275	0.000

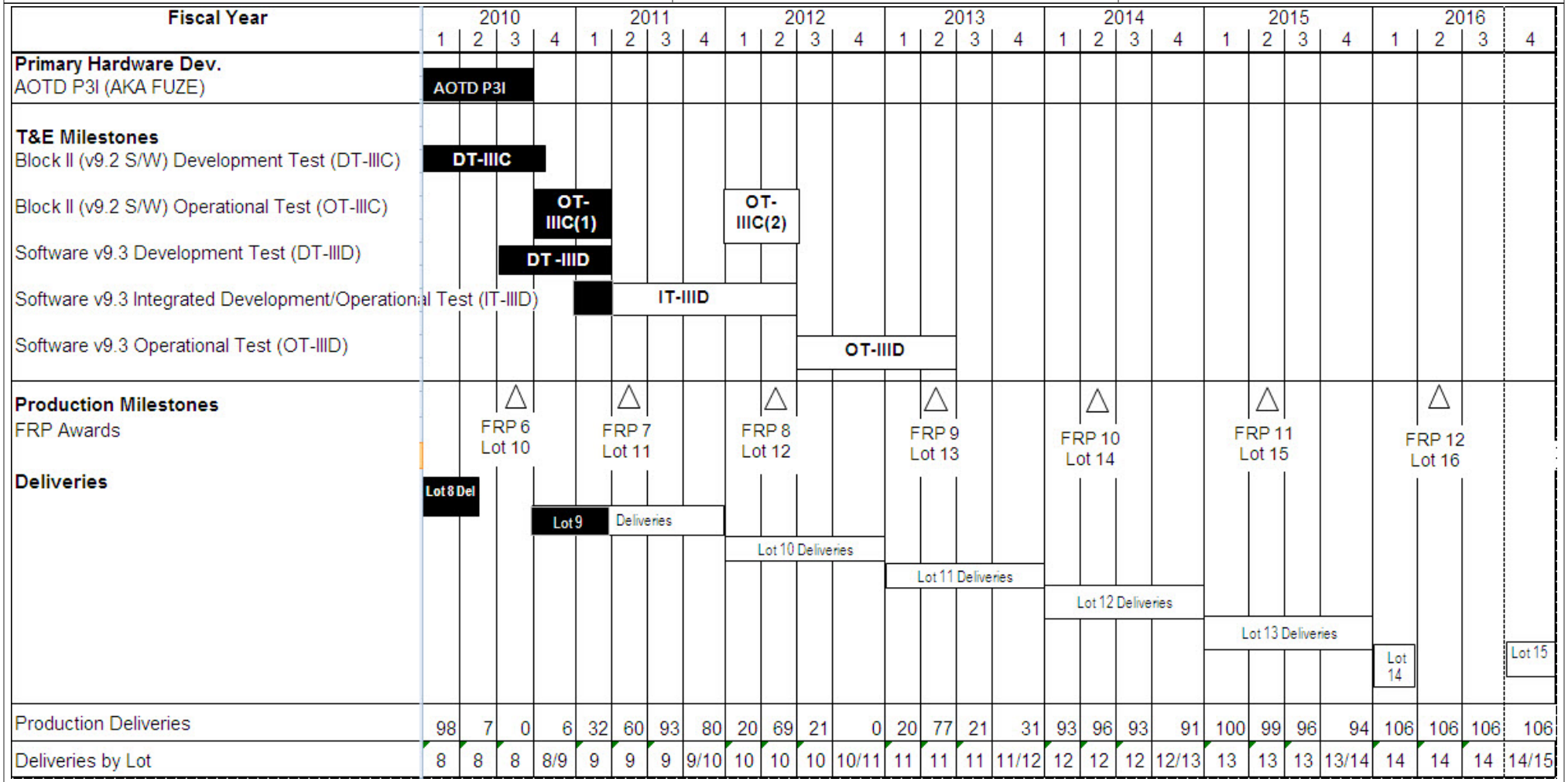
	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	83.775	6.040		8.023		-		8.023	66.700	164.538	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207161F: *Tactical AIM Missiles*	PROJECT 674132: *AIM-9 Product Improvement*	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207161F: *Tactical AIM Missiles*	**PROJECT** 674132: *AIM-9 Product Improvement*



Production Deliveries	98	7	0	6	32	60	93	80	20	69	21	0	20	77	21	31	93	96	93	91	100	99	96	94	106	106	106	106			
Deliveries by Lot	8	8	8	8/9	9	9	9	9/10	10	10	10	10/11	11	11	11	11/12	12	12	12	12/13	13	13	13	13/14	14	14	14	14/15			

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207161F: *Tactical AIM Missiles*	**PROJECT** 674132: *AIM-9 Product Improvement*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
AOTD P3I, Phase 2	1	2010	3	2010
Operational Test OT-IIIC(1), CATM OT (version 9.2 software)	4	2010	1	2011
OT-IIIC(2), AUR OT (version 9.2 software)	1	2012	2	2012
Developmental Test DT-IIID, Phase 2 (version 9.2 software)	1	2010	1	2010
Integrated Test IT-IIID, Phase 1 (version 9.2 software)	2	2010	4	2010
Integrated Test IT-IIID, Phase 2 (version 9.2 software)	1	2011	3	2011
Operational Test OT-IIID (version 9.2 software)	4	2011	4	2011
Developmental Test DT-IIID (version 9.3 software)	3	2010	2	2011
Integrated DT/OT Test IT-IIID (version 9.3 software)	4	2010	3	2012
Operational Test OT-IIID (version 9.3 software)	3	2012	3	2013
Full Rate Production (FRP-6) Award Lot 10	2	2010	2	2010
Full Rate Production (FRP-7) Award Lot 11	2	2011	2	2011
Full Rate Production (FRP-8) Award Lot 12	2	2012	2	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207163F: *Advanced Medium Range Air-to-Air Missile*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	49.763	62.922	77.830	-	77.830	95.078	82.456	57.130	34.715	Continuing	Continuing
673777: *AMRAAM*	49.763	62.922	77.830	-	77.830	95.078	82.456	57.130	34.715	Continuing	Continuing

Note

Prior Year Funding Estimate is $1.988B. To complete funding estimate is $255.7M.

A. Mission Description and Budget Item Justification

The Air Force and Navy continue to develop improvements to the Advanced Medium Range Air-to-Air Missile (AMRAAM) to counter existing and emerging air vehicle threats, operating at high or low altitude and having advanced Electronic Attack (EA) capabilities. The AMRAAM Pre-Planned Product Improvement (P3I) program allows the Air Force and Navy to continue a joint research and development program. This enables AMRAAM to be compatible with advanced fighters, enhances AMRAAM capability and operational flexibility against current and projected threats, incorporates high payoff technology development, performs risk reduction activities and investigates new variants and/or alternate missions which may use AMRAAM attributes. The AIM-120D (Phase 4) delivers improved performance via GPS-aided navigation, a two-way datalink capability for enhanced aircrew survivability and improved network compatibility, and incorporates new guidance software which improves kinematic and weapon effectiveness performance. Phase 4 Functional Configuration Audit (FCA) was successfully completed in September 09. In FY10, a period of combined Developmental Test (DT)/Operational Test (OT) was initiated to ensure overall aircraft/missile weapons system maturity prior to the start of dedicated OT. Dedicated OT will start in FY11, with Initial Operational Capability (IOC) on the F/A-18 E/F and F-15 C/D expected in FY12. In addition to integration on these IOC platforms, the program includes integration of the missile onto the F-16, F-15E, F-22A, and F-18 C/D. To keep the existing inventory as effective as possible, the AF and Navy also develop, test, and field improvements that are implemented via software upgrades reprogrammed into fielded weapons, and/or hardware upgrades inserted into production units. AMRAAM is a joint Air Force/Navy, Acquisition Category IC (ACAT IC) program with Air Force as lead service. This program is in budget activity 7 - Operational System Development, providing upgrades to AIM-120 missiles currently fielded or in production.

Prior Years funding estimate is $1.988B. To complete funding estimate is $255.7M * (FY17 to complete).

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207163F: *Advanced Medium Range Air-to-Air Missile*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	49.971	62.922	60.935	-	60.935
Current President's Budget	49.763	62.922	77.830	-	77.830
Total Adjustments	-0.208	-	16.895	-	16.895
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-0.208	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	16.895	-	16.895

Change Summary Explanation

Funding added in FY12 to increase the Electronic Program Improvement Plan (EPIP) effort. Funds will support additional risk reduction studies and candidate selection activities to provide enhanced capability to counter electronic attack (EA) for current and emerging threats.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207163F: *Advanced Medium Range Air-to-Air Missile*	PROJECT 673777: *AMRAAM*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
673777: *AMRAAM*	49.763	62.922	77.830	-	77.830	95.078	82.456	57.130	34.715	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Totals include funding for PRCP Program Number 185, AMRAAM.

The program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $.345M in FY12.

A. Mission Description and Budget Item Justification

The Air Force and Navy continue to develop improvements to the Advanced Medium Range Air-to-Air Missile (AMRAAM) to counter existing and emerging air vehicle threats, operating at high or low altitude and having advanced Electronic Attack (EA) capabilities. The AMRAAM Pre-Planned Product Improvement (P3I) program allows the Air Force and Navy to continue a joint research and development program. This enables AMRAAM to be compatible with advanced fighters, enhances AMRAAM capability and operational flexibility against current and projected threats, incorporates high payoff technology development, performs risk reduction activities and investigates new variants and/or alternate missions which may use AMRAAM attributes. The AIM-120D (Phase 4) delivers improved performance via GPS-aided navigation, a two-way datalink capability for enhanced aircrew survivability and improved network compatibility, and incorporates new guidance software which improves kinematic and weapon effectiveness performance. Phase 4 Functional Configuration Audit (FCA) was successfully completed in September 09. In FY10, a period of combined Developmental Test (DT)/Operational Test (OT) was initiated to ensure overall aircraft/missile weapons system maturity prior to the start of dedicated OT. Dedicated OT will start in FY11, with Initial Operational Capability (IOC) on the F/A-18 E/F and F-15 C/D expected in FY12. In addition to integration on these IOC platforms, the program includes integration of the missile onto the F-16, F-15E, F-22A, and F-18 C/D. To keep the existing inventory as effective as possible, the AF and Navy also develop, test, and field improvements that are implemented via software upgrades reprogrammed into fielded weapons, and/or hardware upgrades inserted into production units. AMRAAM is a joint Air Force/Navy, Acquisition Category IC (ACAT IC) program with Air Force as lead service. This program is in budget activity 7 - Operational System Development, providing upgrades to AIM-120 missiles currently fielded or in production.

Prior Years funding estimate is $1.988B. To complete funding estimate is $255.7M * (FY17 to complete).

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: System Improvement Program (SIP)/Software Upgrade Program (SWUP)/Electronic Protection (EP)	29.115	35.601	32.408	-	32.408

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207163F: *Advanced Medium Range Air-to-Air Missile*	PROJECT 673777: *AMRAAM*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Provide software upgrades/system improvement/electronic protection (SWUP/SIP/EP) ***FY 2010 Accomplishments:*** 1. Began the AIM-120C AMRAAM missile variant (C3-C7) SWUP. Effort included beginning the first of four planned Candidate Development Set periods in which candidate improvements were identified, analyzed and selected for development continuation, maturing selected candidates from the first Candidate Development Set to a Preliminary Design Review (PDR) level of design maturity. The effort developed RF fuze signature models and vulnerability models for newly defined threat aircraft for use in subsequent SWUP efforts. 2. Electronic Protection Improvement Program (EPIP) – began the implementation phase for the initial increment of EP upgrades for AIM-120C missiles. This program will yield two EP improvement S/W releases (one for C3-C6 missiles, one for C7 missiles) to be fielded in FY13. AIM-120D missile EP improvements will be fielded in conjunction with subsequent AIM-120D SIP releases. Tasks included start of developmental hardware in the loop (HWIL) testing, captive flight test missions, and software design activities in preparation for a Critical Design Review (CDR) in FY11. Conducted Concept Refinement/Risk Reduction (CR/RR) activities further developing EP techniques for future upgrades. 3. AIM-120D SIP – continued candidate evaluation and selection and preliminary design activities, including lab and captive flight tests to provide data necessary to evaluate performance and feasibility of potential upgrades. Conducted quarterly candidate reviews including the warfighter and operational testers to downselect candidates for further evaluation and development. Incorporated deficiencies noted in the course of AIM-120D DT/OT testing into the improvement database and evaluated for implementation. Continued study of efficient/effective integration of other system improvements, parts obsolescence issues, and cost reduction initiatives. ***FY 2011 Plans:*** 1. Continue the AIM-120C SWUP. Effort will include completing the second and beginning the third of four Candidate Development Set periods in which improvement candidates will be identified, analyzed and selected for development continuation. This will mature a larger set of selected candidates from the 2nd Candidate Development Set to a PDR level of design maturity. Finish RF fuze signature effort on vulnerability models. 2. EPIP - continue EPIP implementation phase for AIM120C missiles. Specific tasks include continuing developmental HWIL testing and captive flight test missions, completion of software design, and completion of the CDR. Continue CR/RR activities further developing EP techniques for future upgrades.					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207163F: *Advanced Medium Range Air-to-Air Missile*	PROJECT 673777: *AMRAAM*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
3. AIM-120D SIP – continue candidate evaluation and selection and preliminary design activities, including lab and/or captive flight tests to provide data necessary to evaluate performance and feasibility of potential upgrades. Conduct quarterly candidate reviews including the warfighter and operational testers to downselect candidates for further evaluation and development. Conduct a Preliminary Design Review (PDR) for the initial SIP release and award contract to implement the candidates selected in the initial evaluation and selection phase. Software Trouble Reports (STRs)/Deficiency Reports (DRs) from OT and the field will be incorporated where possible in the S/W and/or hardware developed under this contract. A CR/RR contract will be awarded to continue prototyping and evaluation of selected hardware candidates. Continue study of efficient/effective integration of other system improvements, parts obsolescence issues, and cost reduction initiatives. ***FY 2012 Base Plans:*** 1. Continue the AIM-120C SWUP. Effort will include maturing Candidate Development Set 3 to a PDR maturity level. Begin study of software candidates for Set 4, which will provide fidelity improvements to C-7 tactical software and simulation model upgrades to enhance the fidelity of missile performance predictions. 2. EPIP – Complete software development captive flight testing and Formal Qualification Testing (FQT) for both C3-C6 and C7 configurations. Release S/W for the live fire test program. Hold PDR and begin implementation effort, to address advanced threats in AIM-120C7 missiles. Continue CR/RR activities further developing EP techniques for future upgrades. 3. AIM-120D System Improvement Program (SIP)- continue candidate evaluation and selection and preliminary design activities, including lab and/or captive flight tests to provide data necessary to evaluate performance and feasibility of potential upgrades. Conduct quarterly candidate reviews including the warfighter and operational testers to downselect candidates for further evaluation and development. Continue implementation phase for the initial SIP release. Continue CR/RR prototyping and evaluation of selected hardware candidates and award follow-on hardware design and development contract to implement selected candidates. Continue study of efficient/effective integration of other system improvements, parts obsolescence issues, and cost reduction initiatives. ***FY 2012 OCO Plans:***					
Title: Test and Evaluation ***Description:*** Continue test and evaluation: Provide support to DT/OT ***FY 2010 Accomplishments:***	14.096	11.841	17.809	-	17.809

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207163F: *Advanced Medium Range Air-to-Air Missile*	PROJECT 673777: *AMRAAM*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue AIM-120D DT/OT and preparation for OT Readiness Review (OTRR). Continue infrastructure investments to support AIM-120D OT, SIP, SWUP and EPIP activities. ***FY 2011 Plans:*** Complete AIM-120D DT/OT testing. Accomplish OT Readiness Review (OTRR) and certify the missile ready for dedicated OT. Start dedicated OT captive carry and free flight testing on F/A-18E/F and F-15C/D, and continue infrastructure investments to support AIM-120D OT, SIP, SWUP and EPIP activities. ***FY 2012 Base Plans:*** Complete AIM-120D dedicated OT. Continue infrastructure investments to support AIM-120D OT, SIP, SWUP and EPIP activities. ***FY 2012 OCO Plans:***					
Title: Aircraft Integration ***Description:*** Aircraft Integration - Integrate Phase 4 on multiple aircraft platforms ***FY 2010 Accomplishments:*** Aircraft Integration - Integrate Phase 4 on multiple aircraft platforms ***FY 2011 Plans:*** Aircraft Integration - Integrate Phase 4 on multiple aircraft platforms ***FY 2012 Base Plans:*** Aircraft Integration - Integrate Phase 4 on multiple aircraft platforms ***FY 2012 OCO Plans:***	6.552	15.480	27.613	-	27.613
Accomplishments/Planned Programs Subtotals	49.763	62.922	77.830	-	77.830

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207163F: *AMRAAM, MPAF, BP20*	272.714	355.358	309.561	0.000	309.561	464.837	450.844	448.775	367.163	Continuing	Continuing
• PE 0207163F (1): *AMRAAM, MPAF, BP25)*	0.801	0.798	0.804	0.000	0.804	0.803	0.809	0.808	0.823	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207163F: *Advanced Medium Range Air-to-Air Missile*	PROJECT 673777: *AMRAAM*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207163F (2): *AMRAAM, MPAF (BP26)*	2.335	0.079	0.082	0.000	0.082	0.082	0.084	0.085	0.087	Continuing	Continuing
• PE 0207163F (3): *AMRAAM, MPAF (BP22)*	5.249	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

The AIM-120D development completed Sep 09 with the accomplishment of a successful FCA. Initial AIM-120D production units were delivered beginning in Aug 09 and are continuing per contract requirements. The AIM-120D Missile Performance Specification (MPS) and Interface Control Document (ICD) define the requirement to integrate the Phase 4 AMRAAM onto the F-15, F-16, and F-22A; with integration activities supported via a series of contractual efforts managed via the host platform programs. For AMRAAM upgrades, contracts are awarded to analyze potential candidates to improve the AIM-120C/D configurations to provide the warfighter the capability to counter current and emerging threats. Candidates that are at the appropriate level of technical maturity will be incorporated via a series of design implementation contracts. Less mature high-payoff candidates will continue to be developed further via concept refinement/risk reduction contracts for incorporation in future development activities.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207163F: *Advanced Medium Range Air-to-Air Missile*	PROJECT 673777: *AMRAAM*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Upgrade Program (SWUP)/System Improvement Program (SIP)/Electronic Protection (EP)	SS/CPFF	Raytheon:Tucson, AZ	35.648	33.777	Jan 2011	30.582	Jan 2012	-		30.582	444.665	544.672	TBD
Aircraft Integration	MIPR	Wright-Patterson AFB:Dayton, OH	34.888	15.480	Jan 2011	27.613	Mar 2012	-		27.613	57.428	135.409	TBD
		Subtotal	70.536	49.257		58.195		-		58.195	502.093	680.081	

Remarks

CPFF software development design implementation contracts include incentive events which must be achieved in order to earn full fixed fee amount.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint System Program Office (JSPO) Operations	WR	Various:Various,	5.963	1.824	Jan 2011	1.826	Jan 2012	-		1.826	21.466	31.079	TBD
		Subtotal	5.963	1.824		1.826		-		1.826	21.466	31.079	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test	WR	Various:Various,	35.974	11.841	Jan 2011	17.809	Jan 2012	-		17.809	1.520	67.144	TBD
		Subtotal	35.974	11.841		17.809		-		17.809	1.520	67.144	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207163F: *Advanced Medium Range Air-to-Air Missile*	PROJECT 673777: *AMRAAM*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	112.473	62.922		77.830		-		77.830	525.079	778.304	

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207163F: *Advanced Medium Range Air-to-Air Missile*	**PROJECT** 673777: *AMRAAM*

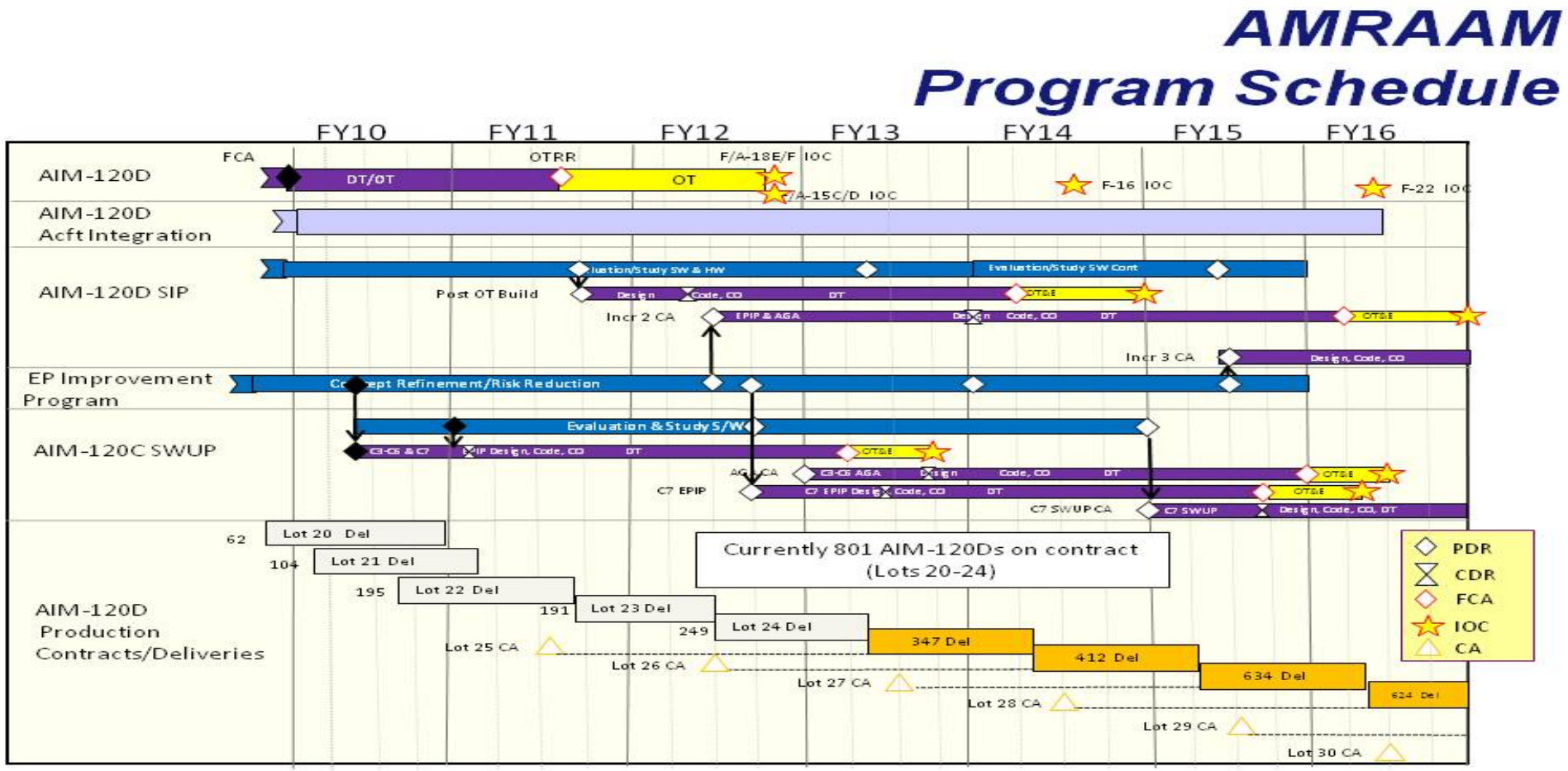

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207163F: *Advanced Medium Range Air-to-Air Missile*	**PROJECT** 673777: *AMRAAM*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Lot 24 (FY10) contract award	4	2010	4	2010
AIM-120C EPIP Increment 1 PDR	2	2010	2	2010
EPIP CDR	1	2011	1	2011
EP/SWUP increment 1 contract award	2	2010	2	2010
AIM-120C SWUP contract award	2	2010	2	2010
AIM-120D SIP Post-OT build contract award	4	2011	4	2011
AIM-120D SIP Post-OT build PDR	4	2011	4	2011
Lot 25 (FY11) contract award	3	2011	3	2011
AIM-120D SIP hardware CR/RR award	1	2011	1	2011
EPIP 1st DT/OT Live Fire	2	2012	2	2012
Complete AIM-120D OT	4	2012	4	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207170F: *JHMCS*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	2.445	2.407	1.436	-	1.436	1.469	1.505	1.541	1.587	Continuing	Continuing
675226: *Joint Helmet Mounted Cueing System*	2.445	2.407	1.436	-	1.436	1.469	1.505	1.541	1.587	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Joint Helmet Mounted Cueing System (JHMCS) develops a helmet display system capable of depicting aircraft heading data, pilot's viewing perspective, target indication tracking/cueing, and other information on the aircrew visor to enhance pilot situational awareness. This display allows the pilot to quickly align platform sensors and weapons on targets, and engage threats using high off-boresight (HOBS) weapons such as the AIM-9X.

JHMCS is a Post Milestone C, Acquisition Category III (ACAT-III) joint AF/Navy program with the AF as the lead service. Program is in full rate production (FRP). Continuing activities include deficiency resolution; improvements to tooling and test equipment; Electronic Unit (EU) obsolescence/Diminishing Manufacturing Sources (DMS) redesign; a systems engineering approach for implementing alternate displays; improvements to integrate night vision cueing display (NVCD); software updates; platform integration; improvements to Reliability and Maintainability (R&M); system upgrade studies and analysis; other obsolescence upgrades; improved magnetic mapping processes to reduce maintenance manhours/life cycle costs; and efforts to support the transition to Performance Based Logistics Partnership (PBL/P) and depot activation.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**
Previous President's Budget	2.529	2.407	2.441	-	2.441
Current President's Budget	2.445	2.407	1.436	-	1.436
Total Adjustments	-0.084	-	-1.005	-	-1.005
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.073	-			
• Other Adjustments	-0.011	-	-1.005	-	-1.005

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207170F: *JHMCS*

Change Summary Explanation

FY12 - reduction of $1M for higher Air Force priorities

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207170F: *JHMCS*	PROJECT 675226: *Joint Helmet Mounted Cueing System*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675226: *Joint Helmet Mounted Cueing System*	2.445	2.407	1.436	-	1.436	1.469	1.505	1.541	1.587	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Joint Helmet Mounted Cueing System (JHMCS) develops a helmet display system capable of depicting aircraft heading data, pilot's viewing perspective, target indication tracking/cueing, and other information on the aircrew visor to enhance pilot situational awareness. This display allows the pilot to quickly align platform sensors and weapons on targets, and engage threats using high off-boresight (HOBS) weapons such as the AIM-9X.

JHMCS is a Post Milestone C, Acquisition Category III (ACAT-III) joint AF/Navy program with the AF as the lead service. Program is in full rate production (FRP). Continuing activities include deficiency resolution; improvements to tooling and test equipment; Electronic Unit (EU) obsolescence/Diminishing Manufacturing Sources (DMS) redesign; a systems engineering approach for implementing alternate displays; improvements to integrate night vision cueing display (NVCD); software updates; platform integration; improvements to Reliability and Maintainability (R&M); system upgrade studies and analysis; other obsolescence upgrades; improved magnetic mapping processes to reduce maintenance manhours/life cycle costs; and efforts to support the transition to Performance Based Logistics Partnership (PBL/P) and depot activation.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Product Development ***Description:*** Continue P3I efforts, software updates, FOT&E, and program management/support. ***FY 2010 Accomplishments:*** Continued deficiency resolution, reliability improvements, P3I activities, obsolescense upgrades, analysis/ studies, alternate displays implementation, and software updates. Developed and qualified helmet display unit (HDU) durability improvements to increase field availability and reduce spare costs. Continued incorporating night vision capabilities into JHMCS by testing and integrating the NVCD system. Continued mission support and provide program management to execute P3I and software development efforts. ***FY 2011 Plans:***	2.445	2.407	1.436	-	1.436

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207170F: *JHMCS*	**PROJECT** 675226: *Joint Helmet Mounted Cueing System*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue deficiency resolution, reliability improvements, P3I activities, obsolescense upgrades, analysis/studies, alternate displays implementation, and software updates. Develop and qualify an improvement for the lower helmet vehicle interface (LHVI) to reduce connector pin damage, increase field availability, and reduce repair and spare costs. Continue incorporating night vision capabilities into JHMCS by testing and integrating the NVCD system. Continue mission support and provide program management to execute P3I and software development efforts. ***FY 2012 Base Plans:*** Continue deficiency resolution, reliability improvements, P3I activities, obsolescense upgrades, analysis/studies, some deficiency reporting, alternate displays implementation, and software updates. Continue mission support and provide program management to execute studies. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	2.445	2.407	1.436	-	1.436

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0604201F: *Integrated Avionics Planning and Development (RDT&E, BA 5)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0604012F: *JHMCS (RDT&E, BA 5)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

JHMCS is an ACAT III joint USAF/USN program with AF as lead service. The development contract was Cost Plus Award Fee (CPAF) through Boeing - St. Louis for development/integration on the F-15, F-16, and F/A-18 aircraft. All other aircraft integration will be handled by the respective platform prime contractors. Follow-on contracts are a mixture of CPAF and Firm Fixed Price (FFP). Currently, a transition from Interim Contractor Support (ICS) to a WRALC Mission Support Division (MSD) funded support posture is being worked. Also, an organic depot partnership is being developed.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207170F: *JHMCS*	PROJECT 675226: *Joint Helmet Mounted Cueing System*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Continue deficiency resolution, R&M improvements, P3I activities, obsolescence upgrades, analysis/ studies, alternate displays implementation, various T&E activities,and software updates. Co...	SS/CPAF	Boeing Co:St Louis, MO	1.945	1.913	Dec 2011	0.946	Dec 2012	-		0.946	Continuing	Continuing	TBD
		Subtotal	1.945	1.913		0.946		-		0.946			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management and Administration	C/Various	Various:Various,	0.500	0.494	Dec 2011	0.490	Dec 2012	-		0.490	Continuing	Continuing	TBD
		Subtotal	0.500	0.494		0.490		-		0.490			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207170F: *JHMCS*	PROJECT 675226: *Joint Helmet Mounted Cueing System*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.445	2.407		1.436		-		1.436			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207170F: *JHMCS*	**PROJECT** 675226: *Joint Helmet Mounted Cueing System*

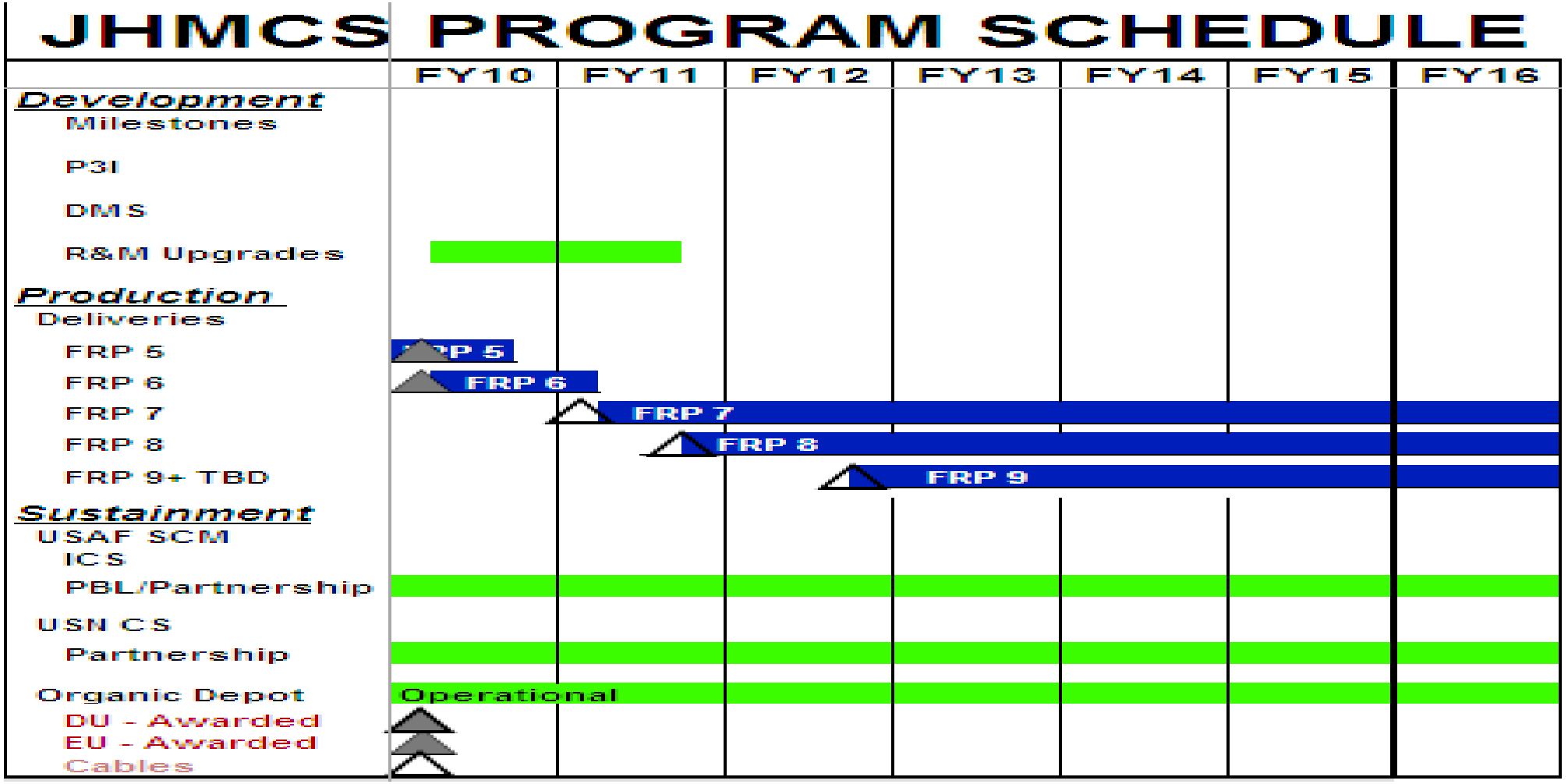

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207170F: *JHMCS*	PROJECT 675226: *Joint Helmet Mounted Cueing System*

Schedule Details

	Start		End	
Events	Quarter	Year	Quarter	Year
R&M Upgrades Increment 1	2	2010	4	2010
R&M Upgrades Increment 2	1	2011	3	2011

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207224F: *COMBAT RESCUE AND RECOVERY*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.944	2.292	-	2.292	2.091	3.633	4.528	-	Continuing	Continuing
671325: *HH-60G*	-	0.944	-	-	-	-	-	-	-	Continuing	Continuing
676016: *Avionics Development and Integration*	-	-	2.292	-	2.292	2.091	3.633	4.528	-	Continuing	Continuing

Note

In FY12, Project Number 676016, Avionics Development and Integration, efforts were transferred from PE 0605229F, Project Number 657001, Avionics Development and Integration in order to effectively execute the HH-60G portion of the effort.

A. Mission Description and Budget Item Justification

671325 - The Mode 5 modification program is an OSD-mandated upgrade to the HH-60G's Identification, Friend or Foe (IFF) system--the primary means of aircraft identification during Air Defense operations. In order to fully implement Mode 5, the HH-60G aircraft require a Global Positioning System update. Costs are only estimates at this time and are subject to contract negotiation and award. This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have already been fielded.

676016 - The Air Force Rotary Wing Avionics Development and Integration effort in an OSD-directed program to develop a fully integrated avionics upgrade that includes predictive terrain awareness and traffic collision avoidance. This program focuses on developing and integrating technologies that will increase the situational awareness of helicopter crews in a degraded visibility environment. This Joint effort was initiated by the Defense Safety Oversight Council. Other partners include USSOCOM and OSD's Defense Research & Engineering Office. This coordinated effort between the Air Force Research Laboratory and Naval Air Systems Command combines multiple technologies and efforts to maximize efficiencies. This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have already been fielded.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207224F: *COMBAT RESCUE AND RECOVERY*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	0.944	-	-	-
Current President's Budget	-	0.944	2.292	-	2.292
Total Adjustments	-	-	2.292	-	2.292
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	2.292	-	2.292

Change Summary Explanation

In FY12, 676016, Avionics Development and Integration, efforts were transferred from PE 0605229F, 657001, Avionics Development and Integration in order to effectively execute the HH-60G portion of the effort.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207224F: *COMBAT RESCUE AND RECOVERY*	PROJECT 671325: *HH-60G*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
671325: *HH-60G*	-	0.944	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Mode 5 modification program is an OSD-mandated upgrade to the HH-60G's Identification, Friend or Foe (IFF) system--the primary means of aircraft identification during Air Defense operations. In order to fully implement Mode 5, the HH-60G aircraft require a Global Positioning System (GPS) update. RDT&E funding will be used to design, integrate, and test a Mode 5/GPS capability.

This program has associated APAF funding in PE 0207224, HH-60G Modifications.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Mode 5/GPS ***Description:*** Develop, integrate, and test a Mode 5/GPS capability to meet up-to-date IFF requirements. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** Develop, integrate, and test a Mode 5/GPS capability to meet up-to-date IFF requirements. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***	-	0.944	-	-	-
Accomplishments/Planned Programs Subtotals	-	0.944	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207224F: *COMBAT RESCUE AND RECOVERY*	PROJECT 671325: *HH-60G*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207224F: *Combat Rescue and Recovery APAF BA 05*	0.000	1.780	7.915	0.000	7.915	7.246	5.719	2.067	6.093	Continuing	Continuing

D. Acquisition Strategy

The HH-60 will upgrade its Mode 5/GPS in concert with current modifications as aircraft become available. Details may be found in PE 0207224, Aircraft Modifications, HH-60G.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207224F: *COMBAT RESCUE AND RECOVERY*	PROJECT 671325: *HH-60G*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NRE	TBD	TBD:TBD,	-	0.400	Feb 2011	-		-		-	0.000	0.400	0.000
Software Development	TBD	TBD:TBD,	-	0.300	Feb 2011	-		-		-	0.000	0.300	0.000
		Subtotal	-	0.700		-		-		-	0.000	0.700	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Gov Test and Evaluation (Mode 5)	TBD	TBD:TBD	-	0.244	Jun 2012	-		-		-	0.000	0.244	0.000
		Subtotal	-	0.244		-		-		-	0.000	0.244	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	0.944		-		-		-	0.000	0.944	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207224F: *COMBAT RESCUE AND RECOVERY*	PROJECT 671325: *HH-60G*

HH-60G Mode 5 Schedule

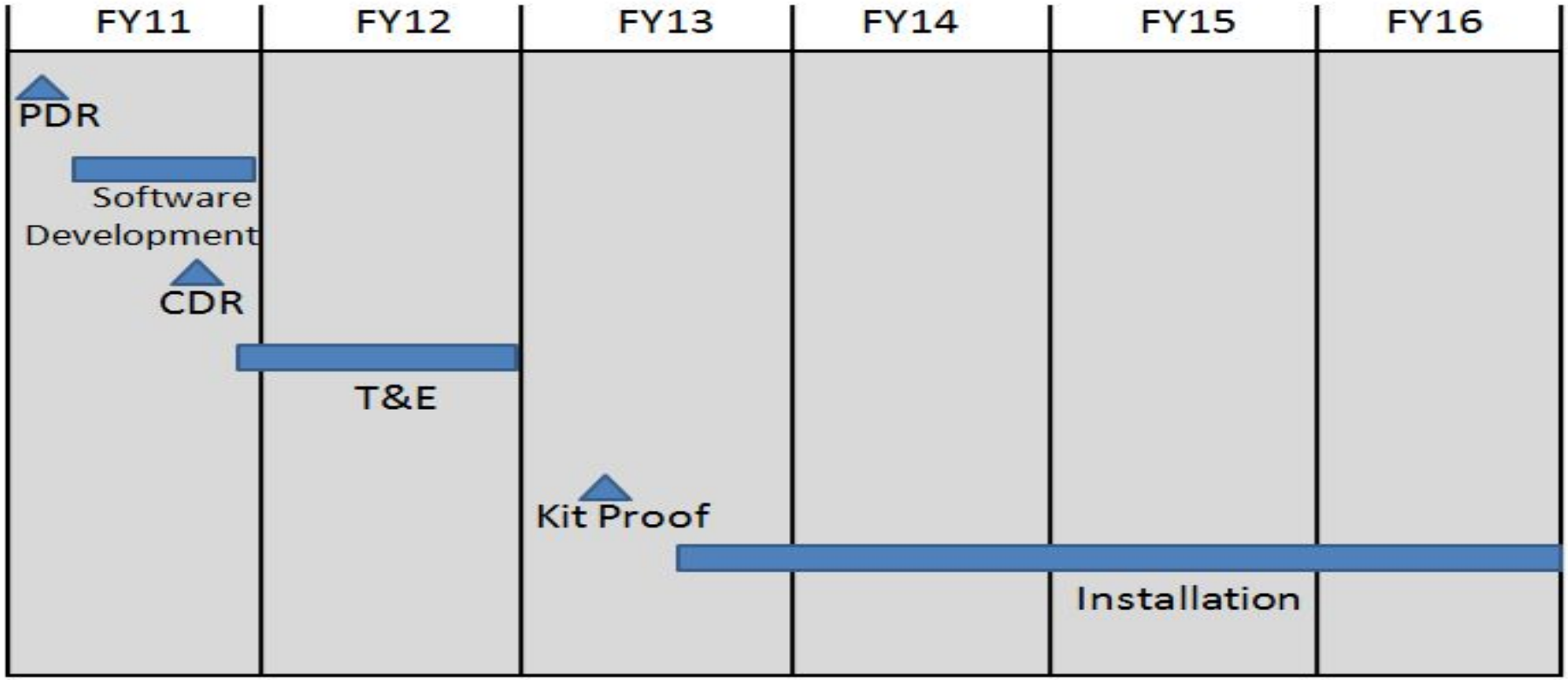

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207224F: *COMBAT RESCUE AND RECOVERY*	**PROJECT** 671325: *HH-60G*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Preliminary Design Review (PDR)	1	2011	1	2011
Software Development	2	2011	4	2011
Critical Design Review	4	2011	4	2011
Test and Evaluation	3	2011	4	2012
Kit Proof	2	2013	2	2013
Installation	3	2013	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207224F: *COMBAT RESCUE AND RECOVERY*	PROJECT 676016: *Avionics Development and Integration*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
676016: *Avionics Development and Integration*	-	-	2.292	-	2.292	2.091	3.633	4.528	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Air Force Rotary Wing Avionics Development and Integration effort in an OSD-directed program to develop a fully integrated avionics upgrade that includes predictive terrain awareness and traffic collision avoidance. This program focuses on developing and integrating technologies that will increase the situational awareness of helicopter crews in a degraded visibility environment. This Joint effort was initiated by the Defense Safety Oversight Council. Other partners include USSOCOM and OSD's Defense Research & Engineering Office. This coordinated effort between the Air Force Research Laboratory and Naval Air Systems Command combines multiple technologies and efforts to maximize efficiencies.

This funding was re-aligned from PE 0605229, Project Number 657001, Avionics Development and Integration, to more effectively execute the HH-60G portion of the Air Forces Rotary Wing Avionics Development and Integration effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Avionics Development and Integration	-	-	2.292	-	2.292
Description: This program focuses on developing and integrating technologies that will increase the situational awareness of helicopter crews in a degraded visibility environment.					
FY 2010 Accomplishments:					
FY 2011 Plans:					
FY 2012 Base Plans: Provide hot bench testing for intitial integration efforts, engineering support, and program management.					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	-	-	2.292	-	2.292

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207224F: *COMBAT RESCUE AND RECOVERY*	PROJECT 676016: *Avionics Development and Integration*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

The Air Force is in the process of integrating the technology into an air worthy payload. This payload will be integrated with existing forward looking infrared turrets to minimize additional equipment and weight on the aircraft. Once the payload is tested, the Air Force will establish an acquisition plan.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207224F: *COMBAT RESCUE AND RECOVERY*	PROJECT 676016: *Avionics Development and Integration*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hot Bench Testing	TBD	Not specified.:,	-	-		2.192		-		2.192	0.000	2.192	0.000
Subtotal			-	-		2.192		-		2.192	0.000	2.192	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	TBD	Not specified.:,	-	-		0.100		-		0.100	0.000	0.100	0.000
Subtotal			-	-		0.100		-		0.100	0.000	0.100	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		2.292		-		2.292	0.000	2.292	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207224F: *COMBAT RESCUE AND RECOVERY*	PROJECT 676016: *Avionics Development and Integration*

Avionics Development and Integration

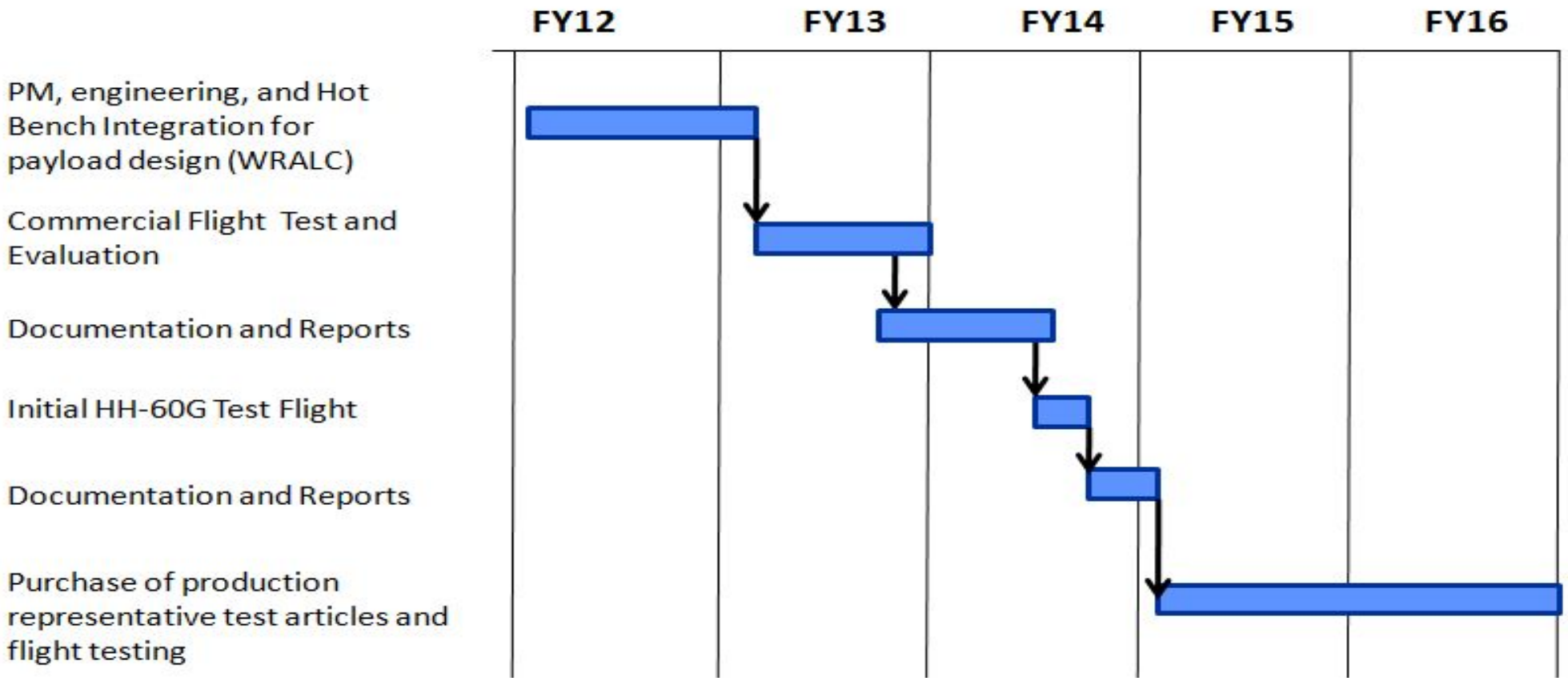

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207224F: *COMBAT RESCUE AND RECOVERY*	**PROJECT** 676016: *Avionics Development and Integration*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Program Management, Engineering and Hot Bench Integration for Payload Design	1	2012	1	2013
Commercial Flight Test and Evaluation	1	2013	4	2013
Documentation and Reports	4	2013	3	2014
Initial HH-60G Flight Test	3	2014	4	2014
Documentation and Reporting	4	2014	1	2015
Purchase Production Representative Test Articles for flight test	1	2015	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207227F: *Pararescue (Guardian Angel Weapon System)*

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	2.871	2.921	0.927	-	0.927	0.607	0.249	0.448	0.249	Continuing	Continuing
675352: *Guardian Angel RDT&E*	2.871	2.921	0.927	-	0.927	0.607	0.249	0.448	0.249	Continuing	Continuing

A. Mission Description and Budget Item Justification

GUARDIAN ANGEL (GA) is an Air Force non-aircraft weapon system program within the overarching Battlefield Airmen Modernization program. GA is a Family of Systems (FoS) – based in both human and equipment capabilities – formulated to execute Air Force Combat Search and Rescue (CSAR) and Personnel Recovery (PR) across the full spectrum of military operations. Established by the Air Force Chief of Staff in 2003 and officially captured in AFPD 10-9, the GA FoS is employed by three distinct Air Force specialties: Pararescuemen (PJ), Survival-Evasion-Resistance-Escape (SERE), and Combat Rescue Officer (CRO). The GA program will standardize and modernize mission essential equipment utilized in extrication, surface/underwater search and recovery, airborne infil/exfil and ground recovery operations. The FY12 funds will be used to develop items within the FoS to include but not limited to: Guardian Angel Advanced Parachute System, CSAR SONAR, Maritime Recovery, Technical Recovery kits, Guardian Angel Operations Kit and the Guardian Angel Air Deployable Rescue Vehicle. This program is in Budget Activity 7, Operational System Development, since it improves the already fielded capabilities of the Guardian Angel weapon system by demonstrating technology, component and subsystem maturity.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	2.950	2.921	0.927	-	0.927
Current President's Budget	2.871	2.921	0.927	-	0.927
Total Adjustments	-0.079	-	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.079	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207227F: *Pararescue (Guardian Angel Weapon System)*	PROJECT 675352: *Guardian Angel RDT&E*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675352: *Guardian Angel RDT&E*	2.871	2.921	0.927	-	0.927	0.607	0.249	0.448	0.249	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

GUARDIAN ANGEL (GA) is an Air Force non-aircraft weapon system program within the overarching Battlefield Airmen Modernization program. GA is a Family of Systems (FoS) – based in both human and equipment capabilities – formulated to execute Air Force Combat Search and Rescue (CSAR) and Personnel Recovery (PR) across the full spectrum of military operations. Established by the Air Force Chief of Staff in 2003 and officially captured in AFPD 10-9, the GA FoS is employed by three distinct Air Force specialties: Pararescuemen (PJ), Survival-Evasion-Resistance-Escape (SERE), and Combat Rescue Officer (CRO). The GA program will standardize and modernize mission essential equipment utilized in extrication, surface/underwater search and recovery, airborne infil/exfil and ground recovery operations. The FY12 funds will be used to develop items within the FoS to include but not limited to: Guardian Angel Advanced Parachute System, CSAR SONAR, Maritime Recovery, Technical Recovery kits, Guardian Angel Operations Kit and the Guardian Angel Air Deployable Rescue Vehicle. This program is in Budget Activity 7, Operational System Development, since it improves the already fielded capabilities of the Guardian Angel weapon system by demonstrating technology, component and subsystem maturity.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: GA FoS	2.871	2.921	0.927	-	0.927
Description: Standardize, modernize, and develop additional capability for the weapons system used by Combat Rescue Officers and Pararescuemen.					
FY 2010 Accomplishments: Studies, analysis, program office support, development of an acquisition strategy and test and evaluation plan, prototype acquisition, and preparation of other documents as needed to modernize the Guardian Angel Weapons System.					
FY 2011 Plans: Studies, analysis, program office support, implementation of an acquisition strategy, prototype acquisition, and preparation of other documents as needed to modernize the Guardian Angel Weapons System.					
FY 2012 Base Plans: Continue execution of previous year's acquisition activities. Develop strategies for increased capability. Engineering change proposals as needed.					
FY 2012 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207227F: *Pararescue (Guardian Angel Weapon System)*	PROJECT 675352: *Guardian Angel RDT&E*

B. Accomplishments/Planned Programs ($ in Millions)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Accomplishments/Planned Programs Subtotals	2.871	2.921	0.927	-	0.927

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207227: *OPAF, Pararescue (Guardian Angel Weapon System)*	9.161	5.334	9.280	0.000	9.280	12.859	13.180	14.221	0.000	Continuing	Continuing

D. Acquisition Strategy

The GA program will address the warfighter immediate needs to standardize, modernize, and develop additional capability for the weapon system used by Combat Rescue Officers and Pararescuemen (Phase one). Until this point, GA has not had a formal acquisition process for the weapon system. The program will also address future requirements for the weapon system that will encompass the needs of all three GA career fields (Phase two). Phase two of the GA program is an incremental evolutionary acquisition effort in which requirements are fullfilled through further sub-system development and integration. These requirements are being identified in an ongoing F-study conducted by HQ ACC. The program has been divided into two phases to more rapidly meet the users immediate need to standardize and modernize the weapon system. All work prior to FY10 was accomplished using 3400 dollars and NGREA 350 funds. NGREA funding is not shown here.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207227F: *Pararescue (Guardian Angel Weapon System)*	PROJECT 675352: *Guardian Angel RDT&E*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GA Family Of Systems	Various	Various:Various,	2.024	1.271	Mar 2011	0.527	Mar 2012	-		0.527	Continuing	Continuing	TBD
		Subtotal	2.024	1.271		0.527		-		0.527			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Accreditation and Certification	C/Various	413 TS:Nellis AFB, NV	0.250	0.300	Jan 2011	0.200	Dec 2011	-		0.200	Continuing	Continuing	TBD
Test Agency Support	RO	46TS:Eglin AFB, FL	0.597	1.350	Mar 2011	0.200	Dec 2011	-		0.200	Continuing	Continuing	TBD
		Subtotal	0.847	1.650		0.400		-		0.400			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.871	2.921		0.927		-		0.927			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207227F: *Pararescue (Guardian Angel Weapon System)*	PROJECT 675352: *Guardian Angel RDT&E*

Guardian Angel Weapon System Schedule
As of Jan 11

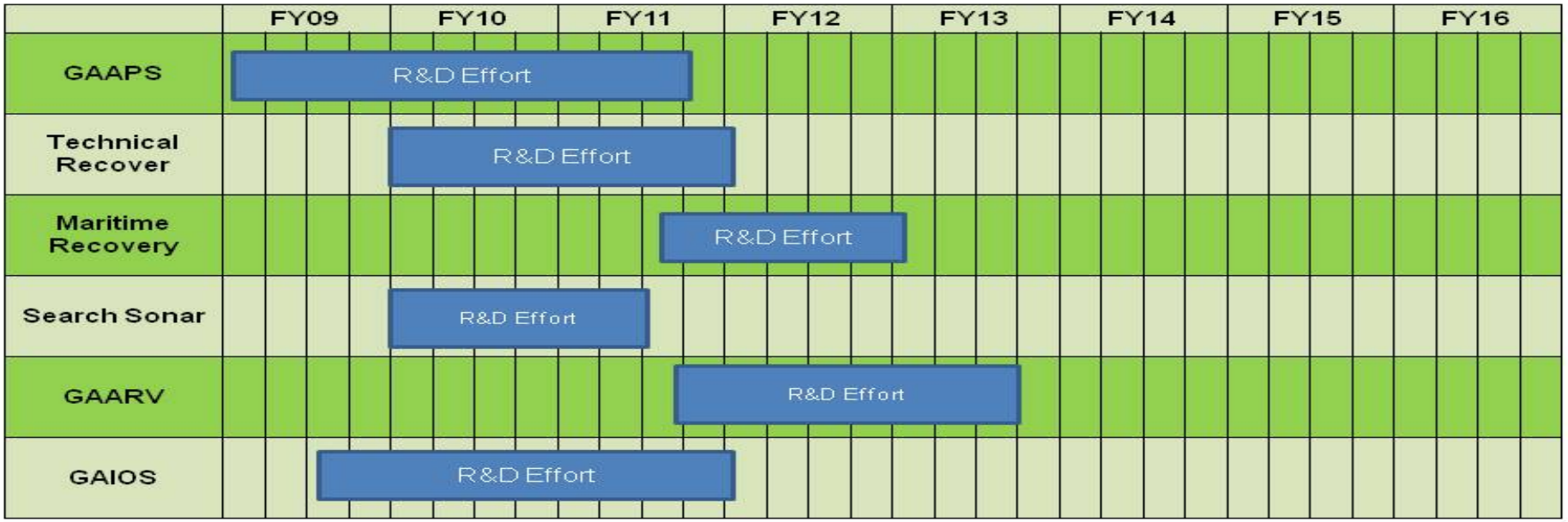

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207227F: *Pararescue (Guardian Angel Weapon System)*	PROJECT 675352: *Guardian Angel RDT&E*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Integration	1	2011	4	2012
Test	1	2011	4	2011
Multiple contract awards	1	2011	4	2011

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207247F: *Air Force TENCAP*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	11.594	11.648	20.727	-	20.727	11.901	12.065	12.245	12.462	Continuing	Continuing
670001: *Air Force TENCAP*	11.594	11.648	20.727	-	20.727	11.901	12.065	12.245	12.462	Continuing	Continuing

A. Mission Description and Budget Item Justification

Air Force TENCAP is executed by the Space Innovation and Development Center (SIDC) at Schriever Air Force Base, Colorado. Established by Congress in 1977 as one of a family of service Tactical Exploitation of National Capabilities (TENCAP) programs, AF TENCAP increases warfighter awareness of Space and National capabilities, and promotes cross-domain integration of these systems into military and intelligence, surveillance and reconnaissance (ISR) operations through:
1) Exploiting existing Space, National and global ISR, and Non-Traditional ISR (NTISR) for operational and tactical applications by rapidly prototyping projects and demonstrating resulting capabilities (for example Battlefield Airborne Command Node (BACN) Intra-flight Data Link System project). Capabilities will be transitioned to warfighters and/or National Intelligence Agencies for operational use, and/or appropriate acquisition organizations for further development.
2) Influencing the design and operation of future Space, National and global ISR, and NTISR systems for tactical users.
3) Providing education and training to warfighters and National Intelligence agencies.

The AF TENCAP Director administers and executes the AF TENCAP program. The Director coordinates and funds AF TENCAP efforts to provide robust capabilities that enhance support of Joint operations at the tactical level. The AF TENCAP Director is also a member of the Joint TENCAP Senior Officer Review Group (SORG).

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**
Previous President's Budget	11.643	11.648	11.796	-	11.796
Current President's Budget	11.594	11.648	20.727	-	20.727
Total Adjustments	-0.049	-	8.931	-	8.931
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.049	-	8.931	-	8.931

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207247F: *Air Force TENCAP*

Change Summary Explanation

FY 2010: -$0.049M FY10 Actuals Backout

FY 2011: No significant program changes.

FY 2012: $9.0M Additional funding added for Battlefield Airborne Command Node (BACN)Intra-flight Data Link System project.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207247F: *Air Force TENCAP*	PROJECT 670001: *Air Force TENCAP*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
670001: *Air Force TENCAP*	11.594	11.648	20.727	-	20.727	11.901	12.065	12.245	12.462	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Air Force TENCAP is executed by the Space Innovation and Development Center (SIDC) at Schriever Air Force Base, Colorado. Established by Congress in 1977 as one of a family of service Tactical Exploitation of National Capabilities (TENCAP) programs, AF TENCAP increases warfighter awareness of Space and National capabilities, and promotes cross-domain integration of these systems into military and intelligence, surveillance and reconnaissance (ISR) operations through:
1) Exploiting existing Space, National and global ISR, and Non-Traditional ISR (NTISR) for operational and tactical applications by rapidly prototyping projects and demonstrating resulting capabilities (for example Battlefield Airborne Command Node (BACN) Intra-flight Data Link System project). Capabilities will be transitioned to warfighters and/or National Intelligence Agencies for operational use, and/or appropriate acquisition organizations for further development.
2) Influencing the design and operation of future Space, National and global ISR, and NTISR systems for tactical users.
3) Providing education and training to warfighters and National Intelligence agencies.

The AF TENCAP Director administers and executes the AF TENCAP program. The Director coordinates and funds AF TENCAP efforts to provide robust capabilities that enhance support of Joint operations at the tactical level. The AF TENCAP Director is also a member of the Joint TENCAP Senior Officer Review Group (SORG).

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Exploitation Applications	10.878	10.903	19.953	-	19.953
Description: Exploiting existing Space, National, and Global ISR, and Non-Traditional ISR (NTISR) for tactical applications by rapidly prototyping projects and demonstrating resulting capabilities and influencing the design and operation of future Space, National and global ISR, and NTISR systems for tactical users.					
FY 2010 Accomplishments: Rapidly prototyping projects and demonstrating resulting capabilities and influencing the design and operation of future Space, National and global ISR, and NTISR systems for tactical users.					
FY 2011 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207247F: *Air Force TENCAP*	PROJECT 670001: *Air Force TENCAP*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Rapidly prototyping projects and demonstrating resulting capabilities and influencing the design and operation of future Space, National and global ISR, and NTISR systems for tactical users. ***FY 2012 Base Plans:*** Rapidly prototyping projects and demonstrating resulting capabilities and influencing the design and operation of future Space, National and global ISR, and NTISR systems, including the Battlefield Airborne Command Node (BACN) Intra-flight Data Link System project, for tactical users. ***FY 2012 OCO Plans:***					
Title: Program Support ***Description:*** Provide program support and other government support to the AFTENCAP program. ***FY 2010 Accomplishments:*** Provide program support and other government support to the AFTENCAP program. ***FY 2011 Plans:*** Provide program support and other government support to the AFTENCAP program. ***FY 2012 Base Plans:*** Provide program support and other government support to the AFTENCAP program. ***FY 2012 OCO Plans:***	0.716	0.745	0.774	-	0.774
Accomplishments/Planned Programs Subtotals	11.594	11.648	20.727	-	20.727

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A: *Not applicable*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207247F: *Air Force TENCAP*	PROJECT 670001: *Air Force TENCAP*

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207247F: *Air Force TENCAP*	PROJECT 670001: *Air Force TENCAP*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Exploiting existing systems through rapid-prototyping projects; influencing future systems; educating and training	Various	Various:Various,	253.045	10.903	Dec 2010	19.953	Dec 2011	-		19.953	Continuing	Continuing	TBD
		Subtotal	253.045	10.903		19.953		-		19.953			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Oversight	Various	Various:Various,	9.557	0.745	Dec 2010	0.774	Dec 2011	-		0.774	Continuing	Continuing	TBD
		Subtotal	9.557	0.745		0.774		-		0.774			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	262.602	11.648		20.727		-		20.727			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207247F: *Air Force TENCAP*	PROJECT 670001: *Air Force TENCAP*

Air Force TENCAP
Completed Projects

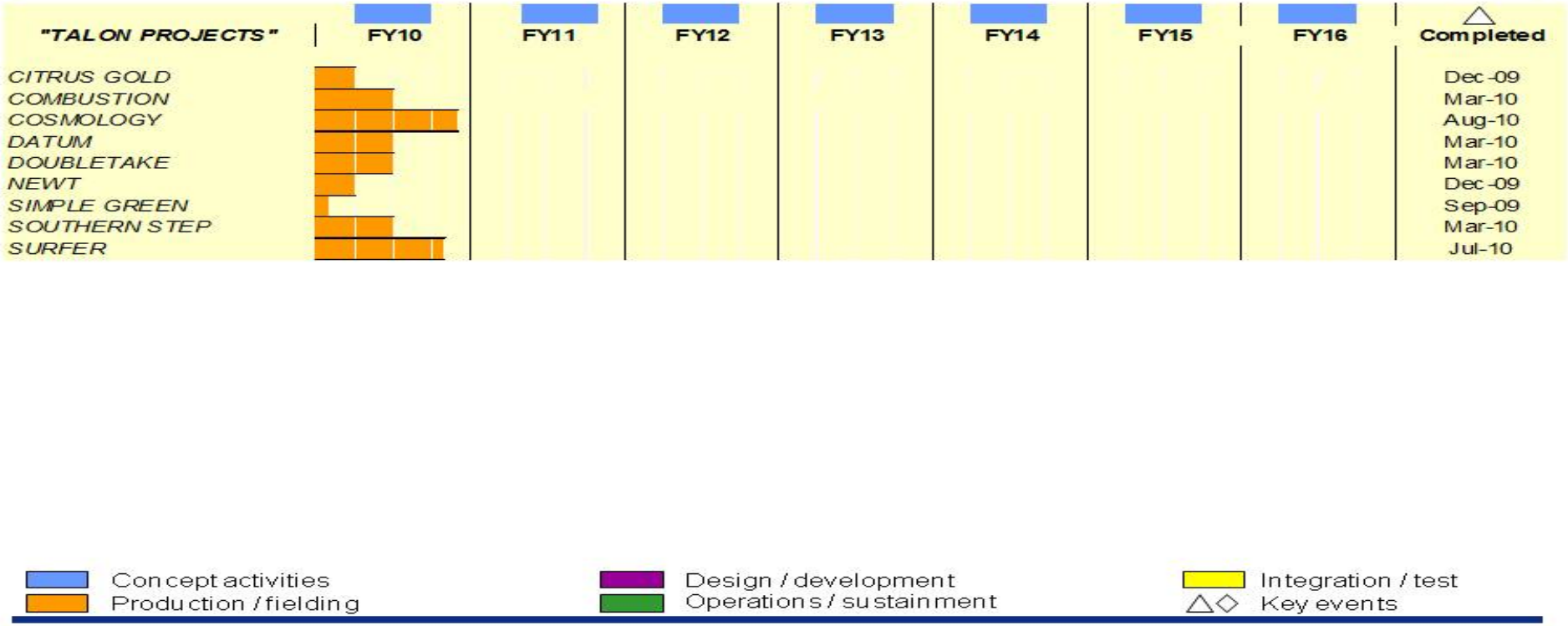

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207247F: *Air Force TENCAP*	PROJECT 670001: *Air Force TENCAP*

Air Force TENCAP Schedule

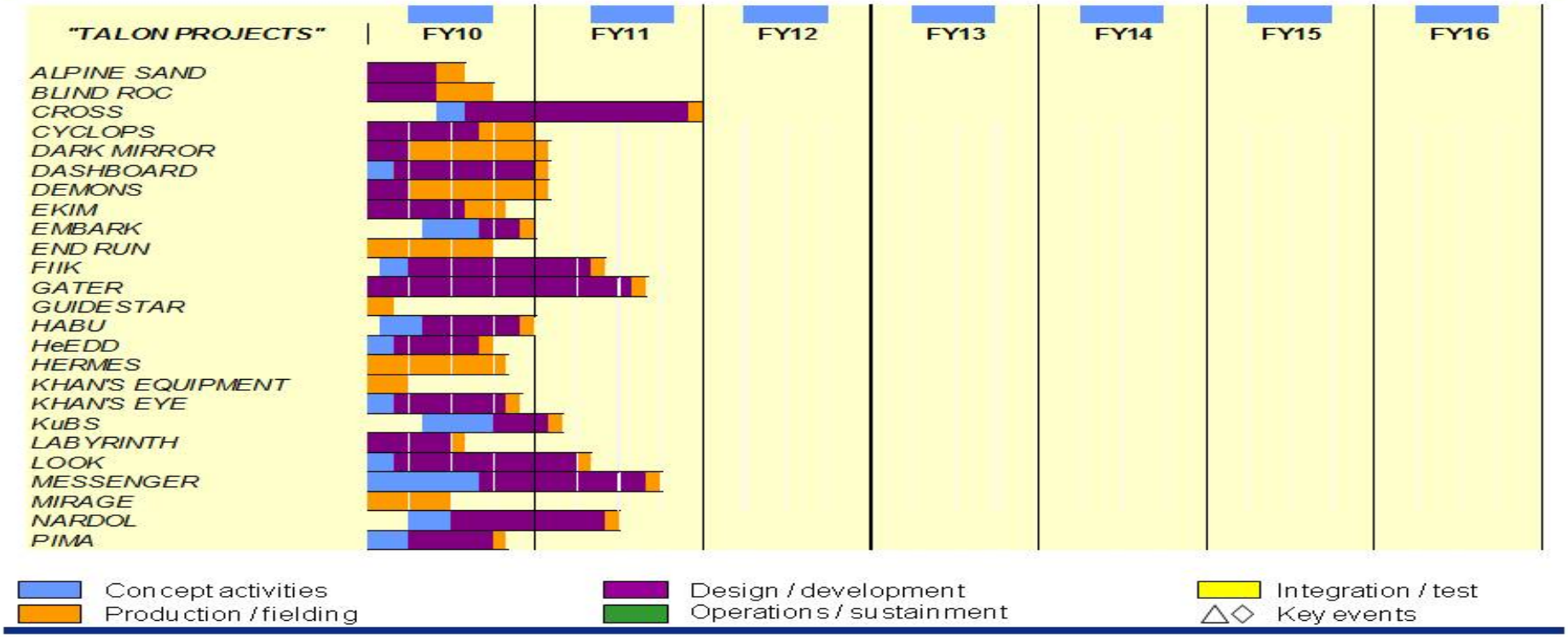

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207247F: *Air Force TENCAP*	PROJECT 670001: *Air Force TENCAP*

Air Force TENCAP Schedule

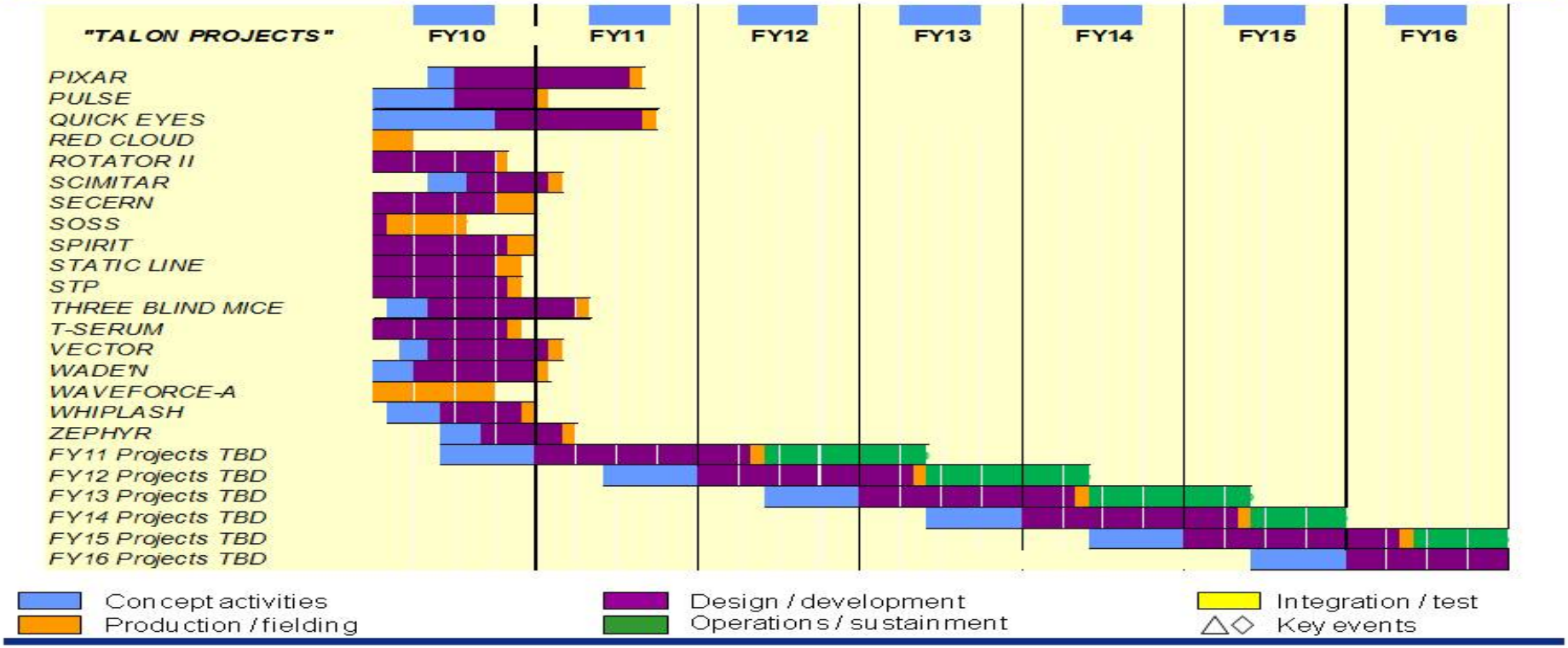

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207247F: *Air Force TENCAP*	PROJECT 670001: *Air Force TENCAP*

Schedule Details

	Start		End	
Events	Quarter	Year	Quarter	Year
FY 2010 projects contracted	2	2010	2	2010
FY 2011 project concepts identified and approved	3	2010	4	2010
FY 2011 project contractor proposals requested/reviewed	3	2010	1	2011
FY 2011 projects approved for implementation	1	2011	1	2011
FY 2011 projects contracted	2	2011	2	2011
FY 2012 project concepts identified and approved	3	2011	4	2011
FY 2012 project contrator proposals requested/reviewed	3	2011	1	2012
FY 2012 projects approved for implementation	1	2012	1	2012
FY 2012 projects contracted	2	2012	2	2012
FY 2013 project concepts identified and approved	3	2012	4	2012
FY 2013 project contractor proposals requested/reviewed	3	2012	1	2013
FY 2013 projects approved for implementation	1	2013	1	2013

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207249F: *Precision Attack Systems*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	2.788	3.017	3.128	-	3.128	3.335	3.292	3.372	3.431	Continuing	Continuing
675347: *Advanced Targeting Pod*	2.788	3.017	3.128	-	3.128	3.335	3.292	3.372	3.431	Continuing	Continuing

A. Mission Description and Budget Item Justification

Advanced Targeting Pods (ATPs) provide long-range target acquisition and expanded weapon delivery envelopes for greater aircraft survivability. ATPs feature an infrared (IR) sensor, charged coupled device television (CCD-TV), laser designator, eye-safe laser, laser spot tracker, infrared marker, and real-time video data link for connectivity with ground forces. As non-developmental items, the majority of improvements to ATPs are the result of investments made by industry Internal Research and Development (IRAD). In addition to operational flight program (OFP) development, this funding provides for the development and integration of capabilities which are either above the capabilities of the industrial base or that require accelerated development timelines in order to meet operational requirements. Data-linking is one such area where there is an identified gap between industrial capabilities and operational requirements. Additional development efforts will be structured to support the documented ATP requirements as well as urgent operational needs (UONs) as they became known.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	2.950	3.017	3.101	-	3.101
Current President's Budget	2.788	3.017	3.128	-	3.128
Total Adjustments	-0.162	-	0.027	-	0.027
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-0.064	-			
• SBIR/STTR Transfer	-0.086	-			
• Other Adjustments	-0.012	-	0.027	-	0.027

Change Summary Explanation

No significant changes.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207249F: *Precision Attack Systems*	PROJECT 675347: *Advanced Targeting Pod*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675347: *Advanced Targeting Pod*	2.788	3.017	3.128	-	3.128	3.335	3.292	3.372	3.431	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Advanced Targeting Pods (ATPs) provide long-range target acquisition and expanded weapon delivery envelopes for greater aircraft survivability. ATPs feature an infrared (IR) sensor, charged coupled device television (CCD-TV), laser designator, eye-safe laser, laser spot tracker, infrared marker, and real-time video data link for connectivity with ground forces. As non-developmental items, the majority of improvements to ATPs are the result of investments made by industry Internal Research and Development (IRAD). In addition to operational flight program (OFP) development, this funding provides for the development and integration of capabilities which are either above the capabilities of the industrial base or that require accelerated development timelines in order to meet operational requirements. Data-linking is one such area where there is an identified gap between industrial capabilities and operational requirements. Additional development efforts will be structured to support the documented ATP requirements as well as urgent operational needs (UONs) as they became known.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Requirements	2.788	3.017	3.128	-	3.128
Description: Technology Improvements, Operational Flight Program (OFP) Updates and Requirements Definition					
FY 2010 Accomplishments: Technology Improvements, Operational Flight Program (OFP) Updates and Requirements Definition					
FY 2011 Plans: Technology Improvements, Operational Flight Program (OFP) Updates and Requirements Definition					
FY 2012 Base Plans: Technology Improvements, Operational Flight Program (OFP) Updates and Requirements Definition					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	2.788	3.017	3.128	-	3.128

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207249F: *Precision Attack Systems*	PROJECT 675347: *Advanced Targeting Pod*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207249F: *Precision Attack Systems APAF, Procurement*	258.669	296.850	31.335	38.000	69.335	38.442	36.347	36.955	37.013	Continuing	Continuing

D. Acquisition Strategy

Funds will primarily be executed in developing improved capability and maintenance mods. Operational Flight Program (OFP) software will be continuously updated to complement mod development efforts.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207249F: *Precision Attack Systems*	PROJECT 675347: *Advanced Targeting Pod*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Improvement & OFP Updates	C/FFP	Multiple:,	1.622	2.817	Mar 2011	1.978		-		1.978	Continuing	Continuing	TBD
Technology Improvement	TBD	TBD:,	0.608	-		-		-		-	0.000	0.608	0.000
Radio Based Combat Identification (RBCI) Capability	TBD	TBD:,	0.558	-		-		-		-	0.000	0.558	0.000
		Subtotal	2.788	2.817		1.978		-		1.978			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Support	TBD	Multiple:,	-	0.100		0.400		-		0.400	Continuing	Continuing	TBD
		Subtotal	-	0.100		0.400		-		0.400			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test	TBD	AFFTC:Edwards AFB, CA	-	0.100		0.500		-		0.500	Continuing	Continuing	TBD
		Subtotal	-	0.100		0.500		-		0.500			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	TBD	Multiple:,	-	-		0.250		-		0.250	Continuing	Continuing	TBD
		Subtotal	-	-		0.250		-		0.250			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207249F: *Precision Attack Systems*	PROJECT 675347: *Advanced Targeting Pod*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.788	3.017		3.128		-		3.128			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207249F: *Precision Attack Systems*	PROJECT 675347: *Advanced Targeting Pod*

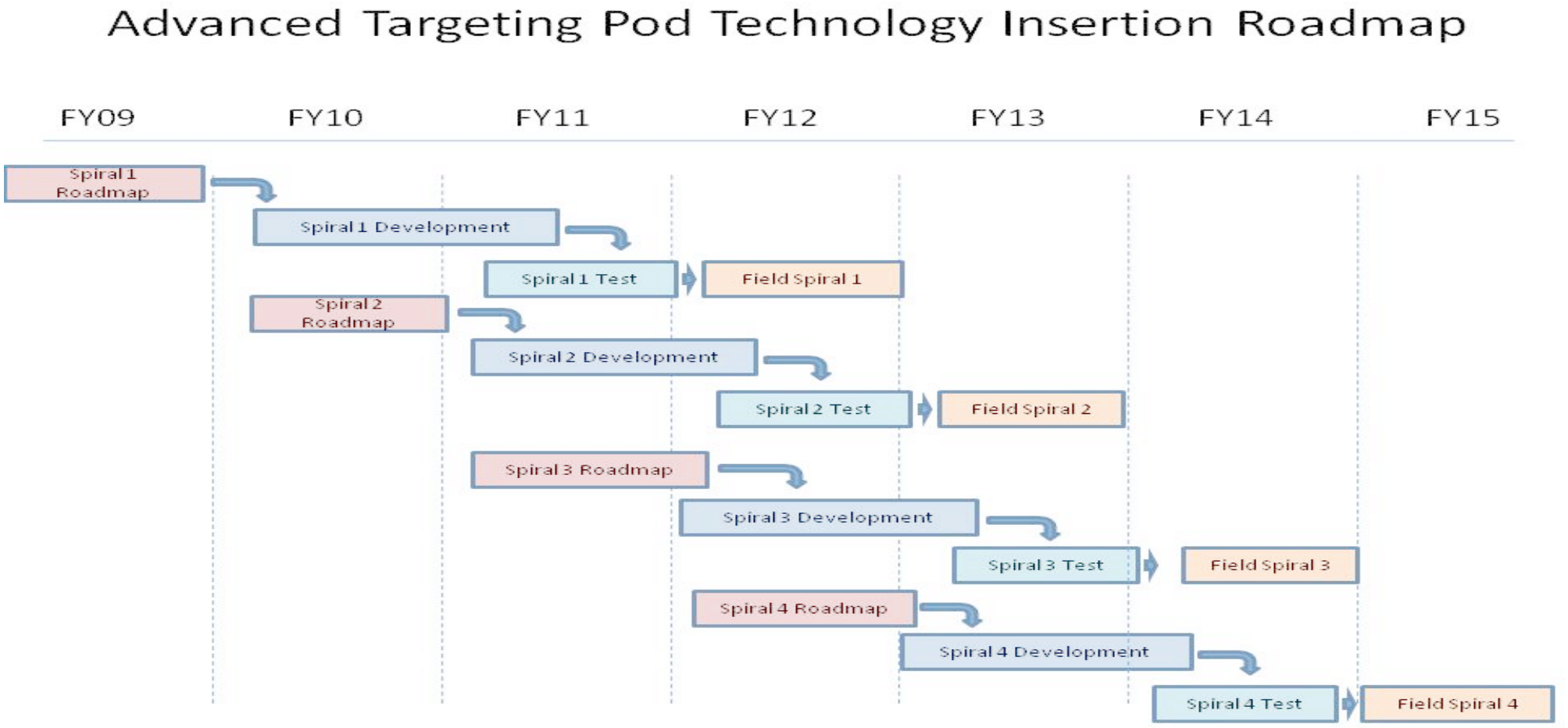

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207249F: *Precision Attack Systems*	**PROJECT** 675347: *Advanced Targeting Pod*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ATP-SE Spiral Development - Spiral 1 Development	1	2010	2	2011
ATP-SE Spiral 1 Test	1	2011	1	2012
ATP-SE Spiral 1 Fielding	2	2012	1	2013
Spiral 2 Development	1	2011	2	2012
Spiral 2 Testing	1	2012	1	2013
Spiral 2 Fielding	1	2013	4	2013
Spiral 3 Development	1	2012	2	2013
Spiral 3 Testing	2	2013	1	2014
Spiral 3 Fielding	2	2014	4	2014
Spiral 4 Development	1	2013	2	2014
Spiral 4 Testing	1	2014	4	2014
Spiral 4 Fielding	1	2015	4	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207253F: *Compass Call*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	13.019	20.652	18.509	-	18.509	12.042	12.222	12.399	12.617	Continuing	Continuing
674804: *Compass Call*	13.019	20.652	18.509	-	18.509	12.042	12.222	12.399	12.617	Continuing	Continuing

Note

The program funding includes reductions for economic efficiencies that are not intended to impact program content. The efficiencies reduction total $0.062M in FY12.

A. Mission Description and Budget Item Justification

The EC-130H COMPASS CALL is the USAF's wide-area, airborne Command and Control Warfare/Information Operations (C2W/IO) weapon system. The employment of this system interdicts our adversary's use of the electronic battlespace and is a key active component in the information battlespace and prosecution of overseas contingency operations. EC-130H COMPASS CALL's sophisticated electronic combat system is capable of surgical denial or disruption of adversary radio frequency (RF) communications systems and sensors. The system was fielded in 1983 and to date has evolved through the Block 35/Baseline 1 configuration. Due to the rapid advances in electronic attack technology, the EC-130H COMPASS CALL was designed to be easily modified and must continue to modernize and evolve to keep pace with adversary tactics and emerging technologies. Continuous system development is required to maintain battlespace superiority. The EC-130H COMPASS CALL program employs an incremental development and fielding strategy IAW AFPD 63-1 that puts capability into the warfighters hands as soon as practical and ensures each iteration of the weapon system is effective against the highest priority threats. To sustain that process requires a steady stream of system development funds. Development funds are required to accomplish subsystem additions and improvements such as the digital signal analysis and exciter subsystem (AXE), the Special Purpose Emitter Array (SPEAR), Integrated Modern Communication Receiver, the Human-to-Machine Interface (HMI), network centric operations, phased array transmit and receive apertures and other classified hardware and software developments necessary to counter military and commercial communications evolutions, command and control operations enhancements, and new/emerging sensor developments. Funding in FY12 is required to support RDT&E efforts for Baseline 3 (BL3) upgrades to the EC-130H COMPASS CALL fleet. The BL2 and BL3 programmed requirements have advanced significantly over the two previously fielded baselines. BL2 and BL3 upgrades will help cover the electronic attack shortfall in the coming years. Obsolescence and diminishing manufacturing sources (DMS) are addressed with each baseline upgrade as well as annually as part of the sustainment responsibilities. Activities also include studies and analysis to support both current and future program planning and execution. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207253F: *Compass Call*	

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	13.019	20.652	18.571	-	18.571
Current President's Budget	13.019	20.652	18.509	-	18.509
Total Adjustments	-	-	-0.062	-	-0.062
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	0.054	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.054	-	-0.062	-	-0.062

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207253F: *Compass Call*	PROJECT 674804: *Compass Call*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674804: *Compass Call*	13.019	20.652	18.509	-	18.509	12.042	12.222	12.399	12.617	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The EC-130H COMPASS CALL is the USAF's wide-area, airborne Command and Control Warfare/Information Operations (C2W/IO) weapon system. The employment of this system interdicts our adversary's use of the electronic battlespace and is a key active component in the information battlespace and prosecution of overseas contingency operations. EC-130H COMPASS CALL's sophisticated electronic combat system is capable of surgical denial or disruption of adversary radio frequency (RF) communications systems and sensors. The system was fielded in 1983 and to date has evolved through the Block 35/Baseline 1 configuration. Due to the rapid advances in electronic attack technology, the EC-130H COMPASS CALL was designed to be easily modified and must continue to modernize and evolve to keep pace with adversary tactics and emerging technologies. Continuous system development is required to maintain battlespace superiority. The EC-130H COMPASS CALL program employs an incremental development and fielding strategy IAW AFPD 63-1 that puts capability into the warfighters hands as soon as practical and ensures each iteration of the weapon system is effective against the highest priority threats. To sustain that process requires a steady stream of system development funds. Development funds are required to accomplish subsystem additions and improvements such as the digital signal analysis and exciter subsystem (AXE), the Special Purpose Emitter Array (SPEAR), Integrated Modern Communication Receiver, the Human-to-Machine Interface (HMI), network centric operations, phased array transmit and receive apertures and other classified hardware and software developments necessary to counter military and commercial communications evolutions, command and control operations enhancements, and new/emerging sensor developments. Funding in FY12 is required to support RDT&E efforts for Baseline 3 (BL3) upgrades to the EC-130H COMPASS CALL fleet. The BL2 and BL3 programmed requirements have advanced significantly over the two previously fielded baselines. BL2 and BL3 upgrades will help cover the electronic attack shortfall in the coming years. Obsolescence and diminishing manufacturing sources (DMS) are addressed with each baseline upgrade as well as annually as part of the sustainment responsibilities. Activities also include studies and analysis to support both current and future program planning and execution. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Baseline Upgrade Development	13.019	20.652	18.509	-	18.509
Description: Baseline 2 development, integration and test, and Baseline 3 non recurring engineering (NRE) and development					
FY 2010 Accomplishments: Baseline 2: Continued development, integration/ test and delivery of SPEAR classified techniques for new targets, Network Centric Operations and reach back capability. (Compass Call Operating System version 4.1,					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207253F: *Compass Call*	PROJECT 674804: *Compass Call*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
a.k.a. CCOS 4.1). Continue development of Electronic Attack Waveforms against Advanced Commercial and Military Communications and Radar targets. Baseline 2 and SPEAR Generation 3 design through Preliminary Design Review. ***FY 2011 Plans:*** Baseline 2: Continue development, integration/ test and delivery of SPEAR classified techniques for new targets. (CCOS 4.2/4.3). Continue development of Electronic Attack Waveforms against Advanced Commercial and Military Communications and Radar targets. Baseline 2 and SPEAR Generation 3 design through Critical Design Review. ***FY 2012 Base Plans:*** Will continue Baseline 2 development, integration, and test of SPEAR classified techniques and electronic attack infrastructure, Network Centric Operations and Reachback Connectivity Capability. Initiate Baseline 3 development of Digital Signal Acquisition and Analysis Subsystem and Digital Exciter Subsystem, Modern communications receiver technologies, Human Machine Interface, Commercial Band Phased Array New Target Development, Advanced Commercial and Military Communications, Counter Radar and Counter Satellite Navigation Techniques, and Target Development. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	13.019	20.652	18.509	-	18.509

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• APAF PE 0207253F: *COMPASS CALL*	44.968	230.357	320.822	12.000	332.822	66.627	180.456	74.620	72.902	Continuing	Continuing
• PE 0207253F: *COMPASS CALL O&M*	164.463	103.640	109.888	0.000	109.888	113.002	128.456	133.523	135.700	Continuing	Continuing

D. Acquisition Strategy

EC-130H COMPASS CALL capability is maintained and baseline / incremental upgrades plus any quick reaction capabilities (QRC) developments are acquired through the 645th Aeronautical Systems Group (BIG SAFARI Program Office) in accordance with the BIG SAFARI Program Management Directive (PMD) and the BIG SAFARI Class Justification and Approval (J&A) document for acquisition of supplies and services using other than full and open competition criteria. The procured supplies and services are supported by the BIG SAFARI Life Cycle Management Plan (LCMP) across the full spectrum of system life cycle management from developmental

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207253F: *Compass Call*	PROJECT 674804: *Compass Call*

engineering to system retirement ("craddle to grave" support). Due to the rapidly changing threat environment encountered during our prolonged commitment to Overseas Contingency Operations (OCO), the acquisition program manager has the authority to redirect funding as necessary to meet current stated and emerging Combatant Commander requirements.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207253F: *Compass Call*	PROJECT 674804: *Compass Call*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Mission Equipment	SS/CPFF	BAE Sytems:Nashua, NH	13.019	20.652	Nov 2010	18.509	Nov 2011	-		18.509	Continuing	Continuing	TBD
		Subtotal	13.019	20.652		18.509		-		18.509			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	13.019	20.652		18.509		-		18.509			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207253F: *Compass Call*	PROJECT 674804: *Compass Call*

EC-130H COMPASS CALL Schedule

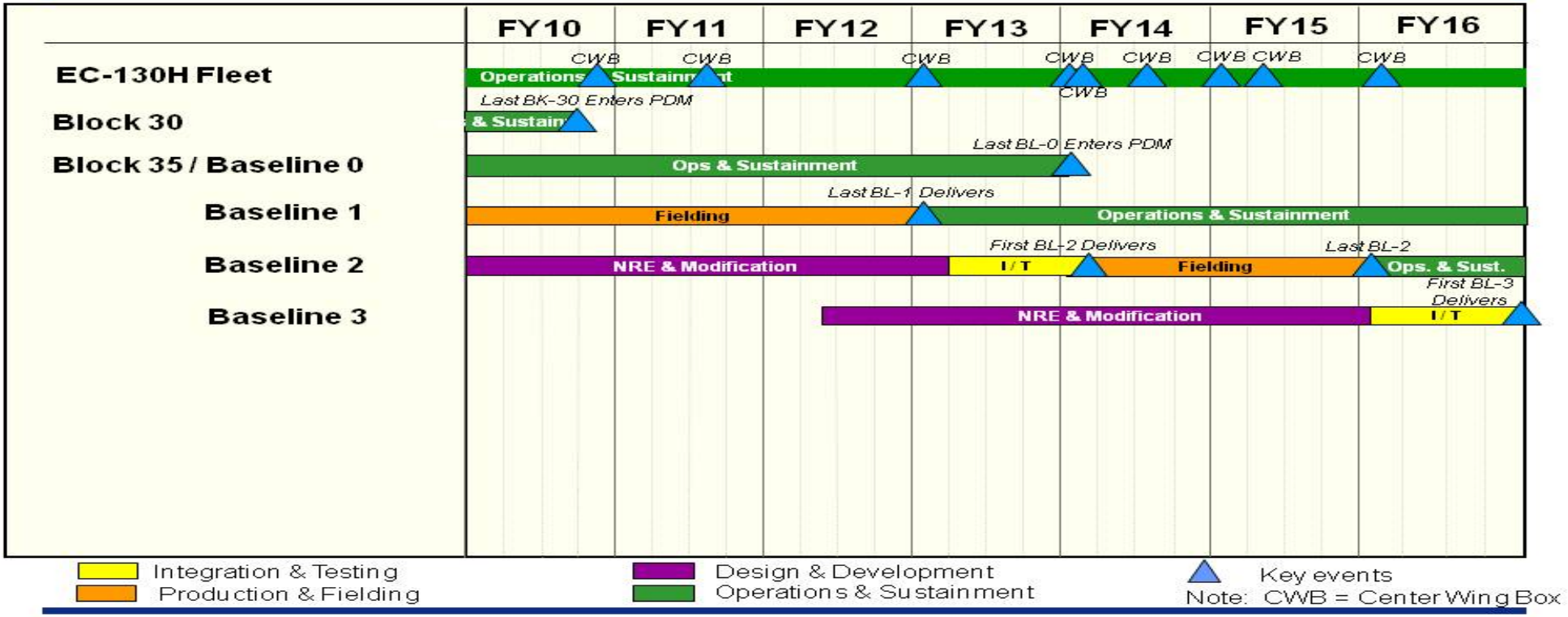

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207253F: *Compass Call*	**PROJECT** 674804: *Compass Call*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Baseline 2 Sub-System Additions and Emerging Technologies Enhanced Targeting Techniques Development, Integration and Test ending in the first BL 2 delivery	1	2010	1	2014
Baseline 3 Sub-System Additions and Emerging Technologies Enhanced Targeting Techniques Development, Integration and Test	2	2012	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207268F: *Aircraft Engine Component Improvement Program (CIP)*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	147.200	147.396	182.967	-	182.967	180.546	186.703	153.752	161.319	Continuing	Continuing
671012: *Aircraft Engine Component Improvement Program*	147.200	120.626	151.093	-	151.093	148.857	155.171	122.392	129.406	Continuing	Continuing
675365: *F-35*	-	26.770	31.874	-	31.874	31.689	31.532	31.360	31.913	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical sustaining engineering support for in-service Air Force engines to maintain flight safety (highest priority), to correct service revealed deficiencies, to improve system operational readiness (OR) and reliability & maintainability (R&M), to reduce engine Life Cycle Cost (LCC), and to sustain engines throughout their service life. Historically, aircraft systems change missions, tactics, and environments (including new fuels) to meet changing threats throughout their lives. New technical problems can develop in the engines through actual use and Engine CIP provides the means to develop fixes for these field problems. Engine CIP funding is driven by field events and types/maturity of engines, not by the total engine quantity. The program starts with government acceptance of the first procurement-funded engine and continues over the engine's life, gradually decreasing to a minimum level (safety/depot repairs) sufficient to keep older inventory engines operational. Engine CIP, through "Lead the Fleet" operational use and accelerated mission testing, identifies and fixes engine-related problems ahead of operational impacts. Engine CIP addresses out-of-warranty usage/life and enables the Air Force to obtain additional warranties when manufacturers incorporate Engine CIP improvements into production engines. Engine CIP ensures continued improvements in engine R&M, which reduce out year support costs. Historically, R&M related Engine CIP efforts significantly reduce out year Operations and Maintenance (O&M) and spares costs. Without Engine CIP, out year support funding would have to be significantly increased. This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	156.963	147.396	144.306	-	144.306
Current President's Budget	147.200	147.396	182.967	-	182.967
Total Adjustments	-9.763	-	38.661	-	38.661
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-4.400	-			
• SBIR/STTR Transfer	-4.708	-			
• Other Adjustments	-0.655	-	38.661	-	38.661

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207268F: *Aircraft Engine Component Improvement Program (CIP)*

Change Summary Explanation

FY 2010 - reprogramming for higher AF priorities.

FY 2012 - increase addresses additional Engine CIP R&M tasks

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207268F: *Aircraft Engine Component Improvement Program (CIP)*	PROJECT 671012: *Aircraft Engine Component Improvement Program*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
671012: *Aircraft Engine Component Improvement Program*	147.200	120.626	151.093	-	151.093	148.857	155.171	122.392	129.406	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical sustaining engineering support for in-service Air Force engines to maintain flight safety (highest priority), to correct service revealed deficiencies, to improve system operational readiness (OR) and reliability & maintainability (R&M), to reduce engine Life Cycle Cost (LCC), and to sustain engines throughout their service life. Historically, aircraft systems change missions, tactics, and environments (including new fuels) to meet changing threats throughout their lives. New technical problems can develop in the engines through actual use and Engine CIP provides the means to develop fixes for these field problems. Engine CIP funding is driven by field events and types/maturity of engines, not by the total engine quantity. The program starts with government acceptance of the first procurement-funded engine and continues over the engine's life, gradually decreasing to a minimum level (safety/depot repairs) sufficient to keep older inventory engines operational. Engine CIP, through "Lead the Fleet" operational use and accelerated mission testing, identifies and fixes engine-related problems ahead of operational impacts. Engine CIP addresses out-of-warranty usage/life and enables the Air Force to obtain additional warranties when manufacturers incorporate Engine CIP improvements into production engines. Engine CIP ensures continued improvements in engine R&M, which reduce out year support costs. Historically, R&M related Engine CIP efforts significantly reduce out year Operations and Maintenance (O&M) and spares costs. Without Engine CIP, out year support funding would have to be significantly increased.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Aircraft Engine Component Improvement Program	147.200	120.626	151.093	-	151.093
Description: Aircraft Engine Component Improvement Program (CIP) provides critical sustaining engineering support for approximately 22,500 in-service Air Force engines to maintain flight safety (highest priority), to address parts obsolescence, to improve system operational readiness (OR) and reliability & maintainability (R&M), to reduce engine Life Cycle Cost (LCC), and to sustain engines throughout their service life. ***FY 2010 Accomplishments:*** Funding enables Engine CIP to execute 250+ tasks across 13+ engine types. Majority of the budget addresses engine issues associated with the A-10, B-1, B-2, C-130, F-15, F-16, and F-22 aircraft. Engine CIP work effort addresses safety of flight, engine component redesign, repair/rework procedures, engine maturation					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207268F: *Aircraft Engine Component Improvement Program (CIP)*	PROJECT 671012: *Aircraft Engine Component Improvement Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
and life limit/mission analysis. In addition to engine maturation, ground and flight engine testing is used to validate redesigned parts and new repair procedures. Engine CIP maintains engine flight safety (highest priority), addresses obsolescence deficiencies, improves system operational readiness (OR) and reliability & maintainability (R&M), reduces engine life cycle costs (LCC), and sustains engines throughout their service life. ***FY 2011 Plans:*** Funding enables Engine CIP to execute 200+ tasks across 13+ engine types. Majority of the budget addresses engine issues associated with the A-10, B-1, B-2, C-130, F-15, F-16, and F-22 aircraft. Engine CIP work effort addresses safety of flight, engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. In addition to engine maturation, ground and flight engine testing is used to validate redesigned parts and new repair procedures. Engine CIP maintains engine flight safety (highest priority), addresses obsolescence deficiencies, improves system operational readiness (OR) and reliability & maintainability (R&M), reduces engine life cycle costs (LCC), and sustains engines throughout their service life. ***FY 2012 Base Plans:*** Funding enables Engine CIP to execute 250+ tasks across 13+ engine types. Majority of the budget addresses engine issues associated with the A-10, B-1, B-2, C-130, F-15, F-16, and F-22 aircraft. Engine CIP work effort addresses safety of flight, engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. In addition to engine maturation, ground and flight engine testing is used to validate redesigned parts and new repair procedures. Engine CIP maintains engine flight safety (highest priority), addresses obsolescence deficiencies, improves system operational readiness (OR) and reliability & maintainability (R&M), reduces engine life cycle costs (LCC), and sustains engines throughout their service life. ***FY 2012 OCO Plans:*** In FY 2012 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	147.200	120.626	151.093	-	151.093

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207268F: *Aircraft Engine Component Improvement Program (CIP)*	**PROJECT** 671012: *Aircraft Engine Component Improvement Program*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A: *Other APPN's*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Contracts within this Program Element are awarded sole source to engine manufacturers. Engine CIP tasks are generally assigned to original engine manufacturers based on available funding and prioritization of candidate tasks.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207268F: *Aircraft Engine Component Improvement Program (CIP)*	PROJECT 671012: *Aircraft Engine Component Improvement Program*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop General Electric aircraft engine improvements	SS/Various	GE:Evendale, OH	40.510	39.259	Jul 2011	46.023	Jan 2012	-		46.023	Continuing	Continuing	0.000
Develop Pratt & Whitney aircraft engine improvements	SS/Various	Pratt & Whitney:Hartford, CT	66.488	55.057	Apr 2011	67.371	Jan 2012	-		67.371	Continuing	Continuing	0.000
Develop GE aircraft engine improvements	SS/CPFF	GE:Lynn, MA	16.825	10.833	Jan 2011	13.012	Jan 2012	-		13.012	Continuing	Continuing	0.000
Develop Rolls Royce aircraft engine improvements	SS/CPFF	Rolls Royce:Indianapolis, IN	4.652	2.504	Jan 2011	3.008	Jan 2012	-		3.008	Continuing	Continuing	0.000
Develop aircraft auxiliary power unit improvements	SS/CPFF	Honeywell:Phoenix, AZ	1.107	0.847	Jan 2011	1.018	Jan 2012	-		1.018	Continuing	Continuing	0.000
Develop cruise missile engine improvements	SS/CPFF	Williams:Walled Lake, MI	0.056	0.061	Jan 2011	0.074	Jan 2012	-		0.074	Continuing	Continuing	0.000
		Subtotal	129.638	108.561		130.506		-		130.506			0.000

Remarks

Contract Type for GE-Evendale and Pratt & Whitney are Hybrid contracts, which include CPAF and FFP portions.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Ground test and validate engine improvements	TBD	AEDC:Arnold AFB, TN	14.048	7.000	Oct 2010	12.500	Oct 2011	-		12.500	Continuing	Continuing	0.000
Fuel	TBD	TBD:TBD,	1.119	3.000	Oct 2010	5.500	Oct 2011	-		5.500	Continuing	Continuing	0.000
		Subtotal	15.167	10.000		18.000		-		18.000			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207268F: *Aircraft Engine Component Improvement Program (CIP)*	PROJECT 671012: *Aircraft Engine Component Improvement Program*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Fuel cost includes only government-procured fuel for Test and Evaluation (T&E). Additional fuel costs for contractor-performed T&E are included in the applicable contract.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
In House Support/Misc	TBD	TBD:TBD,	2.395	2.065	Oct 2010	2.587	Oct 2011	-		2.587	Continuing	Continuing	0.000
		Subtotal	2.395	2.065		2.587		-		2.587			0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011	FY 2012 Base Cost	FY 2012 Base	FY 2012 OCO Cost	FY 2012 OCO	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	147.200	120.626		151.093		-		151.093			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207268F: *Aircraft Engine Component Improvement Program (CIP)*	**PROJECT** 671012: *Aircraft Engine Component Improvement Program*

Not applicable. Engine CIP is a continuing sustaining engineering support program that annually funds 250 plus separate tasks.

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207268F: *Aircraft Engine Component Improvement Program (CIP)*	**PROJECT** 671012: *Aircraft Engine Component Improvement Program*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Engine CIP activities	1	2010	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207268F: *Aircraft Engine Component Improvement Program (CIP)*	PROJECT 675365: *F-35*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675365: *F-35*	-	26.770	31.874	-	31.874	31.689	31.532	31.360	31.913	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The F135 Aircraft Engine Component Improvement Program (CIP) supports F-35 propulsion systems. It provides the only source of critical sustaining engineering support for in-service Air Force propulsion systems. Engine CIP maintains flight safety (highest priority), to correct service revealed deficiencies, to improve system Operational Readiness (OR) and Reliability & Maintainability (R&M), to reduce propulsion system Life Cycle Cost (LCC), and sustain the propulsion systems throughout the service life. Historically, aircraft systems change missions, tactics, and environment (including new fuels) and meet changing threats throughout their lives. New technical problems can develop in the propulsion system through actual use and the Engine CIP provides the means to develop fixes for these field problems. Engine CIP funding is driven by field events and type/maturity of the propulsion systems, not by the total quantity. The program starts with government acceptance of the first procurement-funded engine and continues over the propulsion system's life, gradually decreasing to a minimum level (safety/depot repairs) sufficient to keep older inventory propulsion systems operational. Engine CIP, through "Lead the Fleet" operational use and accelerated mission testing, identifies and fixes propulsion-related problems ahead of operational impacts. Engine CIP addresses out-of-warranty usage/life and enables the Air Force to obtain additional warranties when manufacturers incorporate Engine CIP improvements into production propulsion systems. Engine CIP ensures continued improvements in propulsion systems R&M, which reduce out year support costs. Historically, R&M related Engine CIP efforts significantly reduce out year O&M and spares costs. Without Engine CIP, out year support funding would have to be significantly increased. This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Aircraft Engine Component Improvement Program (F-135)	-	26.770	31.874	-	31.874
Description: The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical sustaining engineering support for F-35 propulsion systems to maintain flight safety (highest priority), to correct service revealed deficiencies, to improve system operational readiness (OR) and reliability & maintainability (R&M), to reduce engine Life Cycle Cost (LCC), and to sustain engines throughout their service life.					
FY 2010 Accomplishments: Not Applicable					
FY 2011 Plans: Initial priority will be to procure representative test engines and begin planning for engine maturation testing. JSF CIP will advance engine maturity 2x hours ahead of the fleet to identify any major safety or reliability issues					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207268F: *Aircraft Engine Component Improvement Program (CIP)*	PROJECT 675365: *F-35*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
before they can affect the field. In addition to accelerated maturation testing, several reliability degraders will also be addressed, including sensors, seals, disk life, and other component deficiencies. Funding to correct service revealed deficiencies, to improve system operational readiness (OR) and reliability & maintainability (R&M), to reduce engine life cycle cost (LCC), and to sustain engines throughout their service life. ***FY 2012 Base Plans:*** Funding enables JSF Engine CIP to execute approximately 30 tasks on F135. Engine CIP work effort addresses safety of flight, engine component redesign, repair/rework procedures, accelerated maturation testing and life limit/mission analysis. In addition, ground and flight engine testing will be used to validate redesigned parts and new repair procedures. Funding will enable JSF CIP to maintain/improve engine flight safety, address parts obsolescence, improve system operational readiness and reliability & maintainability, reduce engine life cycle cost, and sustain engines throughout their service life. ***FY 2012 OCO Plans:*** Not Applicable					
Accomplishments/Planned Programs Subtotals	-	26.770	31.874	-	31.874

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0205633N: *OTHER APPN*	0.000	27.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Contracts within this Program Element are awarded sole source to engine manufacturers. F-35 Engine CIP tasks are generally assigned to original engine manufacturers based on available funding and prioritization of candidate tasks.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207268F: *Aircraft Engine Component Improvement Program (CIP)*	PROJECT 675365: *F-35*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop Pratt & Whitney F-35 engine improvements	SS/CPAF	Pratt & Whitney:Hartford, CT	-	26.370		26.456	Jan 2012	-		26.456	Continuing	Continuing	0.000
		Subtotal	-	26.370		26.456		-		26.456			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Ground test and validate engine improvements	TBD	AEDC:Arnold AFB, TN	-	-		4.685	Oct 2011	-		4.685	Continuing	Continuing	0.000
Fuel	TBD	Not specified.:,	-	-		0.255	Oct 2011	-		0.255	Continuing	Continuing	0.000
		Subtotal	-	-		4.940		-		4.940			0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
In House Support/Misc	TBD	TBD:TBD,	-	0.400		0.478	Oct 2011	-		0.478	Continuing	Continuing	0.000
		Subtotal	-	0.400		0.478		-		0.478			0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	26.770		31.874		-		31.874			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207268F: *Aircraft Engine Component Improvement Program (CIP)*	PROJECT 675365: *F-35*	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207268F: *Aircraft Engine Component Improvement Program (CIP)*	PROJECT 675365: *F-35*

Not applicable. F-35 Engine CIP is a continuing sustaining engineering support program that funds approximately 10 tasks in FY2011 and 30 plus tasks annually beginning in FY2012.

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207268F: *Aircraft Engine Component Improvement Program (CIP)*	**PROJECT** 675365: *F-35*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
F-35 Engine CIP Tasks	3	2011	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207277F: *Chief's Innovation Program*

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	23.083	-	-	-	-	-	-	-	-	Continuing	Continuing
675373: *ISR Innovations Program*	23.083	-	-	-	-	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

A family of systems providing high-impact, quick-reaction capabilities to Warfighters for mission planning, rehearsal, visualization, and intelligence gathering purposes. Program components include: Eagle Vision, DoD's only world-wide deployable commercial imagery ground station capability, and ISR Innovations, rapid prototyping, operational evaluation and fielding of short-notice, high-payoff capabilities addressing immediate gaps and/or shortfalls identified by Warfighting activities. Program is in Budget Activity 7 because it provides for the development of technologies and capabilities in support of operational system development.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	11.261	-	-	-	-
Current President's Budget	23.083	-	-	-	-
Total Adjustments	11.822	-	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	11.822	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: 675373: *ISR Innovations Program*		
Congressional Add: *CONGRESSIONAL ADD*	1.840	-
Congressional Add Subtotals for Project: 675373	1.840	-
Congressional Add Totals for all Projects	1.840	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207277F: *Chief's Innovation Program*	PROJECT 675373: *ISR Innovations Program*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675373: *ISR Innovations Program*	23.083	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

FY10 funding for ROVER FMV encryption inadvertently reported in PE 0207423F, RDT&E, BA-07, Project 674931

A. Mission Description and Budget Item Justification

ISR Innovations program addresses immediate gaps and/or shortfalls identified by Warfighting activities. Develops material solutions through rapid prototyping, operational evaluation and fielding of short-notice, high-payoff capabilities. - FY10 funds supprt CENTCOM Urgent Need/Supports OSD (AT&L) Intelligence Surveillance Reconnaissance (ISR) Task Force full motion video (FMV) enhancements directed/intiated during FY09. Develops and integrates encryption capability on Remote Operated Video Enhanced Receivers (ROVER). Enhances line-of-sight (LOS) Type I encrypted FMV capability via point-to-point broadcast while securing FMV signal transmission. - FY10 $1.84M Congressional Add for Multiband Realtime Hyperspectral Targeting Sensor integration for ISR airborne capabilities. - Program is in Budget Activity 7 because it provides for the development of technologies and capabilities in support of operational system development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: ISR ***Description:*** Intelligence, Surveillance, Reconnaissance (ISR) Full Motion Video (FMV) Encryption Development and Integration. ***FY 2010 Accomplishments:*** Development of Intelligence, Surveillance, Reconnaissance (ISR) Full Motion Video (FMV) Encryption Development and Integration. ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***	21.243	-	-	-	-
Accomplishments/Planned Programs Subtotals	21.243	-	-	-	-

	FY 2010	FY 2011
Congressional Add: CONGRESSIONAL ADD	1.840	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207277F: *Chief's Innovation Program*	PROJECT 675373: *ISR Innovations Program*

	FY 2010	FY 2011
FY 2010 Accomplishments: Multiband Realtime Hyperspectral Targeting Sensor Development and Integration		
FY 2011 Plans:		
Congressional Adds Subtotals	1.840	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 0207277F - Chief's Innovation Pr...: *O&M, AF*	10.973	11.098	11.335	0.000	11.335	11.575	11.807	12.038	0.000	Continuing	Continuing
• 0207423F - Advanced Comm Systems: *RDT&E, AF*	9.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

- (FMV Encrytption) A Sole Source contract through 645 AESG, Wright-Patterson AFB Justification and Approval (J&A) utilizing and existing Basic Order Agreement (BOA) with L3 Communications West.
- (Multiband Realtime Hyperspectral Targeting Sensor) Developmental partnership with U.S. Naval Air Warfare Center-Weapons Division (NAWC-WD) and Sole Source Contract with Optical Alchemy Inc.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207277F: *Chief's Innovation Program*	PROJECT 675373: *ISR Innovations Program*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
(FMV Encrytption) Sys Engr., Planning & Development	SS/FFP	L3 Communications West:Salt Lake, Utah,	21.243	-		-		-		-	0.000	21.243	0.000
(Multiband Realtime Hyperspectral Targeting Sensor) Sys Engr., Planning & Development	SS/FFP	Optical Alchemy Inc:Nashua, New Hampshire	1.840	-		-		-		-	0.000	1.840	0.000
		Subtotal	23.083	-		-		-		-	0.000	23.083	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	23.083	-		-		-		-	0.000	23.083	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207277F: *Chief's Innovation Program*	**PROJECT** 675373: *ISR Innovations Program*

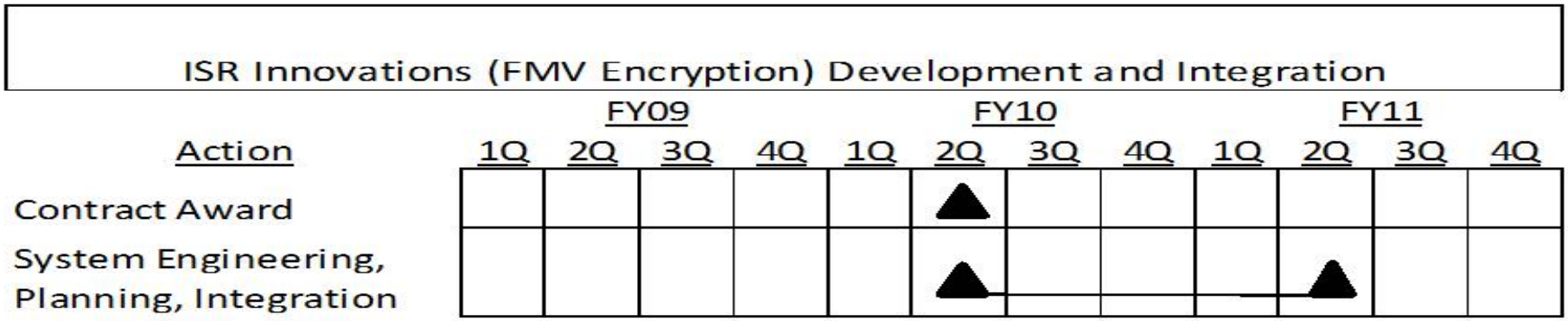

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207277F: *Chief's Innovation Program*	**PROJECT** 675373: *ISR Innovations Program*

ISR Innovations (Multiband Realtime Hyperspectral Targeting Sensor) Development and Integration

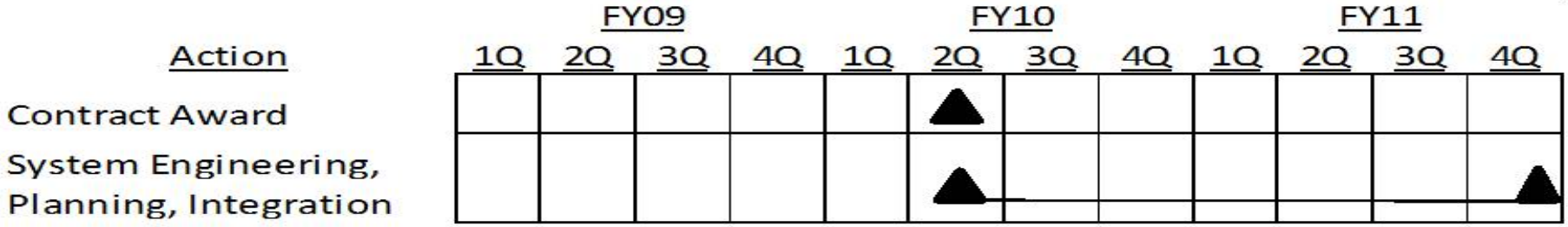

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207277F: *Chief's Innovation Program*	PROJECT 675373: *ISR Innovations Program*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
FMV Encrytion System Engineering Planning & Integration	2	2010	2	2011
Multiband Realtime Hypersprectral Targeting Sensor System Engineering Planning & Integration	2	2010	4	2011

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207325F: *Joint Air-to-Surface Standoff Missile (JASSM)*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	28.472	20.000	5.796	-	5.796	3.935	4.132	4.083	4.135	Continuing	Continuing
675356: *JASSM Extended Range (JASSM-ER)*	28.472	20.000	5.796	-	5.796	3.935	4.132	4.083	4.135	Continuing	Continuing

Note

Totals include funding for PRCP Program Number, 555, JASSM

A. Mission Description and Budget Item Justification

Totals include funding for PRCP Program Number (PNO) 555, JASSM.

The Joint Air-to-Surface Standoff Missile (JASSM) program provides a long range, conventional air-to-surface, autonomous, precision-guided, standoff cruise missile compatible with fighter and bomber aircraft able to attack a variety of fixed or relocatable targets. There are 2 variants of the JASSM missile: Baseline JASSM and an extended range JASSM (JASSM-ER). Aircraft integration of baseline JASSM is complete on the B-52H, F-16 (Block 50), B-1, and B-2. Objective aircraft include the F-15E, F-16 (Block 40), and F-35. Aircraft integration for JASSM-ER is the B-1B. Objective aircraft is the B-52H, F16C/D (Block 50/52), B-2, F-16C/D (Block25-42), F-15E, and F-35. In Jun 2007, the DAE designated the Joint Air-to-Surface Standoff Missile (JASSM) program an ACAT 1D program due to a Nunn-McCurdy unit cost breach. On 1 May, 2008, the Defense Acquisition Executive (DAE) completed its Nunn-McCurdy review of the JASSM program and certified a restructured program to consist of two separable increments, JASSM baseline and JASSM-Extended Range (JASSM-ER) - both with improved reliability(such as for Electronic Safe and Armed Fuze (ESAF) and Test Instrumentation Kit (TIK) improvements), separate milestone decision points and separate projects within a single program element.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207325F: *Joint Air-to-Surface Standoff Missile (JASSM)*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	29.494	20.000	4.790	-	4.790
Current President's Budget	28.472	20.000	5.796	-	5.796
Total Adjustments	-1.022	-	1.006	-	1.006
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.899	-			
• Other Adjustments	-0.123	-	1.006	-	1.006

Change Summary Explanation

None

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207325F: *Joint Air-to-Surface Standoff Missile (JASSM)*	PROJECT 675356: *JASSM Extended Range (JASSM-ER)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675356: *JASSM Extended Range (JASSM-ER)*	28.472	20.000	5.796	-	5.796	3.935	4.132	4.083	4.135	Continuing	Continuing
Quantity of RDT&E Articles	0	12	0	0	0	0	0	0	0		

Note

All funds in this PE are for JASSM-ER development activities, as described below.

The program funding includes reduction for overhead cost efficiencies that are not intended to impact program content. The efficiencies reductions total $0.721M in FY12.

A. Mission Description and Budget Item Justification

This project provides a long range (over twice the range of baseline JASSM), conventional air-to-surface, autonomous, precision-guided, low observable, standoff cruise missile compatible with fighter and bomber aircraft. The threshold integration platform for JASSM-ER is the B-1B. Objective aircraft include the B-52H, F-16 (Block 40/50), B-2, F-15E, and F-35. JASSM-ER provides the capability to attack a variety of high value fixed or relocatable targets with precision, through preplanned missions or target-of-opportunity, deeper into enemy territory than JASSM Baseline while minimizing the threat to launch aircraft. The Air Force is developing JASSM-ER based on a contractor-developed, government-approved System Performance Specification (SPS) Rev B dated February 28, 2007, which was updated under JASSM-ER development Phase II System Development and Demonstration in FY07. JASSM and JASSM-ER programs were designated ACAT 1D in June 2007 due to a Nunn-McCurdy unit cost breach. On 1 May, 2008, the DAE completed its Nunn-McCurdy review of the JASSM program and certified the program to Congress.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: OT Assets	18.979	18.968	3.345	-	3.345
Description: JASSM-ER Operational Test (OT) Assets Procurement. Purchases missiles to complete Initial Operational Test and Evaluation (IOT&E) required for full-rate production decision.					
FY 2010 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207325F: *Joint Air-to-Surface Standoff Missile (JASSM)*	PROJECT 675356: *JASSM Extended Range (JASSM-ER)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Incrementally funds procurement of OT missiles, including Test Instrumentation Kits, for JASSM-ER. This includes prime contractor purchase of long-lead missile subassemblies from lower-level suppliers, final assembly at prime contractor, as well as recurring engineering support. ***FY 2011 Plans:*** Incrementally funds procurement of OT missiles, including Test Instrumentation Kits, for JASSM-ER. This includes prime contractor purchase of long-lead missile subassemblies from lower-level suppliers, final assembly at prime contractor, as well as recurring engineering support. ***FY 2012 Base Plans:*** Last installment of incremental funding of OT&E assets for JASSM-ER: Final delivery of test missiles and Test Instrumantation Kits. ***FY 2012 OCO Plans:***					
Title: IT/OT Assets ***Description:*** Integrated Testing (IT - combined DT & OT) Asset Procurement. Purchases missiles to complete IT program for Milestone C decision (entry into Low-Rate Initial Production- LRIP) and IOT&E. ***FY 2010 Accomplishments:*** Incrementally funds final assembly of IT and OT missiles, integrated flight test support, and associated engineering activities to include, but not limited to failure analyses as program nears Milestone C decision. ***FY 2011 Plans:*** Not Applicable ***FY 2012 Base Plans:*** Not Applicable ***FY 2012 OCO Plans:***	6.256	-	-	-	-
Title: Test Support ***Description:*** Government Test Support and Other Development. Includes flight test equipment, targets, 46th Test Wing and Range support, and other ground/flight test support. ***FY 2010 Accomplishments:***	2.253	0.732	1.700	-	1.700

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207325F: *Joint Air-to-Surface Standoff Missile (JASSM)*	PROJECT 675356: *JASSM Extended Range (JASSM-ER)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continues to fund IT/OT flight test equipment, targets, 46th Test Wing and Range support, and other ground/ flight test support. ***FY 2011 Plans:*** Continues to fund OT flight test equipment, targets, 46th Test Wing and Range support, and other ground/flight test support. ***FY 2012 Base Plans:*** Continues to fund OT flight test equipment, targets, 46th Test Wing and Range support, and other ground/flight test support. ***FY 2012 OCO Plans:***					
Title: Program Management Administration (PMA) ***Description:*** Continue program office/mission support. Provide oversight of JASSM development/upgrade activities. ***FY 2010 Accomplishments:*** Supports JASSM-ER development prior to Milestone C. ***FY 2011 Plans:*** Supports JASSM-ER development during LRIP. ***FY 2012 Base Plans:*** Supports JASSM-ER development during LRIP. ***FY 2012 OCO Plans:***	0.984	0.300	0.751	-	0.751
Accomplishments/Planned Programs Subtotals	28.472	20.000	5.796	-	5.796

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207325F: *Joint Air-to-Surface Standoff Missile (JASSM)*	PROJECT 675356: *JASSM Extended Range (JASSM-ER)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207325F: *JASSM Missile Procurement, MPAF - JASSM-ER*	0.000	68.449	78.572	0.000	78.572	81.199	125.563	187.863	465.233	Continuing	Continuing

D. Acquisition Strategy

JASSM-ER is the extended range version of the JASSM baseline missile currently in full rate production. The initial JASSM-ER development contract, awarded in 2004, was Cost-Plus-Award-Fee. No additional funds were obligated to JASSM-ER efforts during the 2007 Nunn-McCurdy deliberations and development continued following the issuance of the 1 May 2008 Acquisition Decision Memorandum (ADM) that directed JASSM-ER to complete development. In 2008, the program office awarded a Cost-Plus-Incentive-Fee (CPIF) contract with performance incentives to complete the development effort. In January 2010, the program office awarded the remaining 12 JASSM-ER operational test assets with the JASSM Lot 8 production contract. Milestone C was approved on 10 Jan 11 and the JASSM-ER program will enter Low Rate Initial Production (LRIP) with the Lot 9 contract award in 2QFY11.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207325F: *Joint Air-to-Surface Standoff Missile (JASSM)*	PROJECT 675356: *JASSM Extended Range (JASSM-ER)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Missiles Procurement (for IT and OT) and Test Support	SS/CPIF	Lockheed Martin:Orlando, FL	44.489	18.968	May 2011	3.345	Jan 2012	-		3.345	0.000	66.802	66.802
Other ER Development, Parts Ugrade and Software Update (due to obsolescence); Reliability improvements (such as ESAF and TIKs)	Various	Lockheed Martin:Orlando, FL	-	-	Jan 2011	-	Jan 2012	-		-	21.000	21.000	21.000
		Subtotal	44.489	18.968		3.345		-		3.345	21.000	87.802	87.802

Remarks

Electronic Safe and Armed Fuze (ESAF) and Test Instrumentation Kits (TIK)

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Support: Program Management Administration (PMA)	Various	Corp. Bills:Eglin AFB, FL	0.984	0.300	Jan 2011	0.751	Jan 2012	-		0.751	15.000	17.035	17.035
		Subtotal	0.984	0.300		0.751		-		0.751	15.000	17.035	17.035

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
46 TW test support, flight test equipment, & targets	Various	46 TW:Eglin AFB, FL	3.570	0.732	Jan 2011	1.700	Jan 2012	-		1.700	15.000	21.002	21.002
		Subtotal	3.570	0.732		1.700		-		1.700	15.000	21.002	21.002

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207325F: *Joint Air-to-Surface Standoff Missile (JASSM)*	PROJECT 675356: *JASSM Extended Range (JASSM-ER)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	49.043	20.000		5.796		-		5.796	51.000	125.839	125.839

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207325F: *Joint Air-to-Surface Standoff Missile (JASSM)*	PROJECT 675356: *JASSM Extended Range (JASSM-ER)*

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JASSM-ER Top Level Schedule

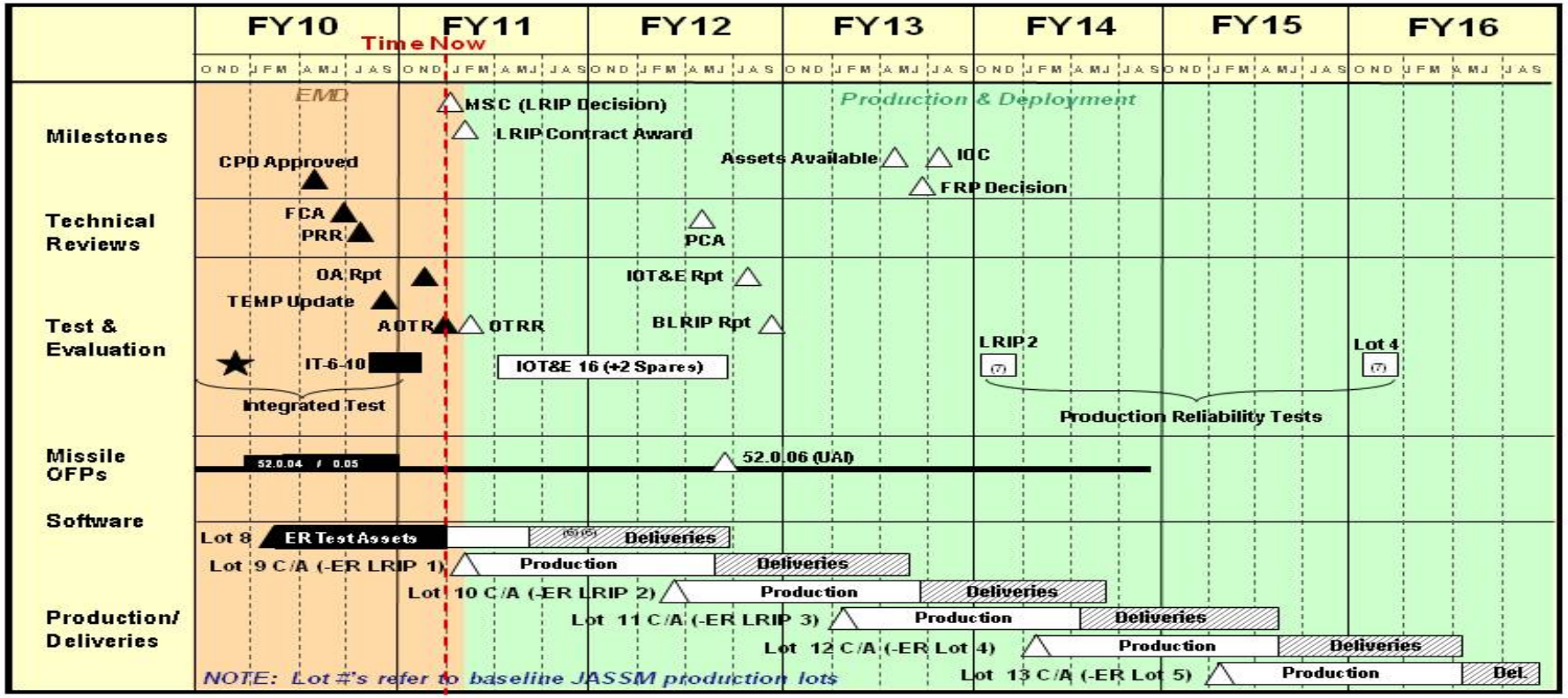

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207325F: *Joint Air-to-Surface Standoff Missile (JASSM)*	PROJECT 675356: *JASSM Extended Range (JASSM-ER)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Integrated Testing (IT is combined DT and OT)	3	2010	1	2011
Operational Test & Evaluation	3	2011	3	2012
Beyond LRIP Report	4	2012	4	2012
Milestone C	1	2011	1	2011
Start JASSM-ER Production (LRIP 1)	2	2011	3	2012
LRIP 2 JASSM-ER production	2	2012	3	2013

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	88.534	93.102	121.880	-	121.880	89.529	67.947	77.202	91.292	Continuing	Continuing
675117: *Integration Development*	73.175	74.720	98.873	-	98.873	72.885	50.693	59.239	73.063	Continuing	Continuing
675218: *Applications Development*	8.677	10.980	15.894	-	15.894	9.234	9.702	10.303	10.479	Continuing	Continuing
675220: *Unit Level*	6.682	7.402	7.113	-	7.113	7.410	7.552	7.660	7.750	Continuing	Continuing

Note

The program funding includes reductions for efficiencies that are not intended to impact program content. The efficiencies reductions total $8.703M in FY12.

A. Mission Description and Budget Item Justification

The Air and Space Operations Center Weapon System (AOC WS) program element provides development of Command and Control (C2) capabilities across the entire spectrum of air and space operations from the strategic to the tactical level. There are three funded projects within the AOC WS program element.

Integration Development supports the Air and Space Operations Center Weapon System (AOC WS), AN-USQ-163 Falconer, the senior element of the Theater Air Control System (TACS). AOC WS is the weapon system the Commander, Air Force Forces (COMAFFOR) provides the Combined/Joint Force Air Component Commander (C/JFACC) for planning, executing and assessing theater-wide air and space operations.

Applications Development provides worldwide operational capabilities which include core air battle planning, management, execution and personnel recovery for Air Force C2 in support of DoD, Coalition Partners, and other government agencies.

Unit Level (UL) supports two primary mission areas: UL Operations software systems provide both the scheduling and mission preparation activities at the wing and squadron level and the capabilities to report and track the success of each mission and influence decisions on future Air Battle Planning to refine future missions. UL Intel capabilities ensure detailed threat, target and imagery information are made available to mission commanders and aircrews planning current flight operations.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	102.605	93.102	121.880	-	121.880
Current President's Budget	88.534	93.102	121.880	-	121.880
Total Adjustments	-14.071	-	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-1.433	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-9.702	-			
• SBIR/STTR Transfer	-2.936	-			
• Other Adjustments	-	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: 675117: *Integration Development*		
Congressional Add: *Commercial Off The Shelf Technology for Space C2*	3.200	-
Congressional Add Subtotals for Project: 675117	3.200	-
Congressional Add Totals for all Projects	3.200	-

Change Summary Explanation

FY10 Congressional Rescissions includes a $415k reduction in accordance with Public Law 111-118 Section 8097, Economic Assumptions and a $1.018M reduction in accordance with Public Law 111-118 Section 8026(f), Federally Funded Research & Development Centers (FFRDCs).

FY10 Re-programmings include a $3.200M technical adjustment to move Congressional Add from AOC WS PE to PE 0305614F, Joint Space Operations Center (JSpOC) Mission Systems (JMS) to be executed in accordance with Congressional intent and a $6.502M Omnibus reprogramming.

FY10 SBIR/STTR Transfer of $2.936 for Small Business Innovation Research.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675117: *Integration Development*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675117: *Integration Development*	73.175	74.720	98.873	-	98.873	72.885	50.693	59.239	73.063	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

FY 2010 includes $3.2M FY10 Congressional Add for Commercial Off The Shelf (COTS) Technology for Space C2. This funding was reprogrammed in FY 2010 to PE 0305614F, Joint Space Operations Center (JSpOC) Mission Systems (JMS) to be executed in accordance with Congressional intent.

A. Mission Description and Budget Item Justification

The Air and Space Operations Center Weapons System (AOC WS), AN/USQ-163 Falconer, the senior element of the Theater Air Control System (TACS), is the weapon system the Commander, Air Force Forces (COMAFFOR) provides the Combined/Joint Force Air Component Commander (C/JFACC) for planning, executing and assessing theater-wide air and space operations. The C/JFACC provides air, space and cyber support to the Combined/Joint Forces Commander (C/JFC) by coordinating, deconflicting and assessing the progress of various weapon systems to advance the C/JFC's campaign. The AOC WS develops operations strategy and planning documents. The weapon system also disseminates tasking orders, executes day-to-day peacetime and combat air, space and cyber operations, and provides rapid reaction to immediate situations by exercising positive control of friendly forces.

The AOC Integration Development program keeps the AOC interoperable, certified, supportable, and compliant through the integration, testing and fielding of new capabilities and sustainment upgrades to the AOC WS baseline. The program supports mission requirements at Geographic and Functional AOCs as well as Support and Manpower Augmentation units. To keep the AOC current and interoperable with the COCOMs, cyber requirements, and fifth generation weapon system/weapons, the AOC WS program plans to evolve the AOC through the integration and test of progressively improving capabilities. Integrated Air and Missile Defense (IAMD) establishes critical IAMD improvements in the AOC WS to maximize the allocation, planning, and execution of the Integrated Defense Plan. The AOC 10.1 baseline is supported by the AOC WS Weapon System Integrator (WSI), ensuring a system of systems engineering perspective, and includes weapon system standardization activities as defined in the AOC WS requirements documents. In preparation for the September 2011 end of the WSI contract, the Program Office ramped-up an organic team to conduct upgrade, integration, and fielding activities as a bridge in the transition of AOC WSI activities to the Modernization contractor. AOC WS 10.2 program activities will begin immediately after Modernization contract award. AOC WS 10.1 baseline direct support under the Modernization contract will begin no earlier than 6-9 months after award; thus, the need for an organic bridge to avoid any lapse in support. In accordance with AOC 10.2 Milestone Decision Authority direction, the 10.2 program will conduct prototyping and Limited Early Install activities to reduce integration risk and improve user feedback in the acquisition process.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes developmental efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: AOC 10.1	19.348	18.573	3.789	-	3.789

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675117: *Integration Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: The AOC 10.1 baseline is supported by the AOC WS Weapon System Integrator (WSI), ensuring a systems of systems engineering perspective, and includes weapon system standardization activities as defined in the AOC WS requirements documents, as well as Certification and Accreditation (C&A) activities. Efforts consist of adding capabilities, including Trusted Thin Client (TTC), that will be utilized in the transition to 10.2. Program Office ramped-up an organic team to conduct upgrade and fielding activities as a bridge in the transition of AOC WSI activities to the Modernization contractor. ***FY 2010 Accomplishments:*** The AOC 10.1 baseline is supported by the AOC WS Weapon System Integrator (WSI), ensuring a systems of systems engineering perspective, and includes weapon system standardization activities as defined in the AOC WS requirements documents. Program Office ramped-up a Government led organic team to conduct integration and upgrade activities as a bridge in the transition of AOC WSI activities to the Modernization contractor. In order to reduce integration risk, multiple prototyping activities are on-going. The prototyping is focused on refining and demonstrating several of the critical Modernization design concepts to ensure their technical feasibility and operational employment. ***FY 2011 Plans:*** The AOC 10.1 baseline is supported by the AOC WS Weapon System Integrator (WSI), ensuring a systems of systems engineering perspective, and includes weapon system standardization activities as defined in the AOC WS requirements documents. Program Office continuing ramp-up of a Government led organic team to conduct integration and upgrade activities as a bridge in the transition of AOC WSI activities to the Modernization contractor. In order to reduce integration risks, multiple prototyping activities are on-going. The prototyping is focused on refining and demonstrating several of the critical Modernization design concepts to ensure their technical feasibility and operational employment. ***FY 2012 Base Plans:*** The AOC 10.1 baseline is supported by the continuation of the Government led organic team to conduct integration and upgrade activities as a bridge in the transition from AOC WSI activities to the Modernization contractor. In order to reduce the integration risks, multiple prototyping activities will be on-going. The prototyping will be focused on refining and demonstrating several of the critical Modernization design concepts to ensure their technical feasibility and operational employment. ***FY 2012 OCO Plans:***					
Title: Integrated Air and Missile Defense (IAMD)	-	-	18.600	-	18.600

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675117: *Integration Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Establish critical Integrated Air and Missile Defense (IAMD)improvements in the AOC WS to maximize the allocation, planning, and execution of the Integrated Defense Plan. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** Establish critical Integrated Air and Missile Defense improvements in the AOC WS to maximize the allocation, planning, and execution of the Integrated Defense Plan. ***FY 2012 OCO Plans:***					
Title: AOC 10.2 ***Description:*** AOC 10.2 WS infrastructure modernization and mission capability integration. Development and test of a robust, open, net-centric infrastructure with a services-oriented architecture. ***FY 2010 Accomplishments:*** Continued demonstration of preliminary integration of 10.2 infrastructure subsystems. Completed Preliminary Design Review and received ADM approval to proceed with further risk reduction and technology development activities. Began activities to support a full and open competition for AOC WS modernization including infrastructure development and mission capability integration. Continued risk reduction testing of candidate Service-Oriented Architectures (SOA) and completed technology readiness assessment. ***FY 2011 Plans:*** Complete selection of the Modernization contractor. Conduct System Requirement Review (SRR), prototyping and Limited Early Install activities to obtain operational feedback. ***FY 2012 Base Plans:*** Conduct Intermediate Design Review (IDR) and Delta Preliminary Design Review (PDR), continue prototyping and Limited Early Install Activities in accordance with Milestone Decision Authority (MDA) direction and plan for Milesone B in late FY12. ***FY 2012 OCO Plans:***	22.969	30.441	55.372	-	55.372
Title: Prototyping	10.380	7.000	0.500	-	0.500

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675117: *Integration Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Prototyping ***FY 2010 Accomplishments:*** In support of the Modernization effort and to reduce integration risk, conducted multiple prototyping activities. The prototyping focused on refining and demonstrating several of the critical Modernization design concepts to ensure their technical feasibility and operational employment. ***FY 2011 Plans:*** In support of the Modernization effort and to reduce integration risk, multiple prototyping activities are on-going. The prototyping is focused on refining and demonstrating several of the critical Modernization design concepts to ensure their technical feasibility and operational employment. ***FY 2012 Base Plans:*** In support of the Modernization effort and to reduce integration risk, multiple prototyping activities are planned. The prototyping will focus on refining and demonstrating several of the critical Modernization design concepts to ensure their technical feasibility and operational employment. ***FY 2012 OCO Plans:***					
Title: Training ***Description:*** Training ***FY 2010 Accomplishments:*** Training to include, but not limited to: Type 1, Part Task Trainer, Distributed Mission Operations, Logistics Management Support and Conversion of Courseware to Computer Based Training. ***FY 2011 Plans:*** Training to include, but not limited to: Type 1, Part Task Trainer, Distributed Mission Operations, Logistics Management Support and Conversion of Courseware to Computer Based Training. ***FY 2012 Base Plans:*** Training to include, but not limited to: Type 1, Part Task Trainer, Distributed Mission Operations, Logistics Management Support and Conversion of Courseware to Computer Based Training. ***FY 2012 OCO Plans:***	4.446	3.362	3.559	-	3.559
Title: Test and Evaluation	2.176	3.273	3.433	-	3.433

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675117: *Integration Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Test and Evaluation ***FY 2010 Accomplishments:*** Conducted Developmental Test and Evaluation (DT&E) and Operational Test and Evaluation (OT&E) on the AOC WS baseline through the Responsible Test Organization (RTO) and Operational Test Organization (OTO), procured needed HW/SW for test articles, provided operational testing through manpower and/or external operational feeds, provided test training for operators and ensured Joint Interoperability Command (JITC) interoperability. ***FY 2011 Plans:*** Conduct Developmental Test and Evaluation (DT&E) and Operational Test and Evaluation (OT&E) on the AOC WS baseline through the Responsible Test Organization (RTO) and Operational Test Organization (OTO), procure needed HW/SW for test articles, provide operational to testing through manpower and/or external operational feeds, provide test training for operators and ensure Joint Interoperability Command (JITC) interoperability. ***FY 2012 Base Plans:*** Conduct Developmental Test and Evaluation (DT&E) and Operational Test and Evaluation (OT&E) on the AOC WS baseline through the Responsible Test Organization (RTO) and Operational Test Organization (OTO), procure needed HW/SW for test articles, provide operational testing through manpower and/or external operational feeds, provide test training for operators and ensure Joint Interoperability (JITC) interoperability. ***FY 2012 OCO Plans:***					
Title: Systems Engineering ***Description:*** Systems Engineering ***FY 2010 Accomplishments:*** Systems engineering activities, including: requirements analysis, C2 integration studies, system development support and performance evaluation. ***FY 2011 Plans:***	5.156	5.517	5.970	-	5.970

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675117: *Integration Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Systems engineering activities, including: requirements analysis, C2 integration studies, system development support and performance evaluation. ***FY 2012 Base Plans:*** Systems engineering activies, including: requirements analysis, C2 integration studies, system development support and performance evaluation. ***FY 2012 OCO Plans:***					
Title: Program Management Support ***Description:*** Program Management Support ***FY 2010 Accomplishments:*** Support for Acquisition planning, execution, and reporting for AOC WS activities. ***FY 2011 Plans:*** Program Support: FY11 funding includes provisions for government contract oversight, technical expertise and program management office support associated with AOC WS activities. ***FY 2012 Base Plans:*** Program Support: FY12 funding includes provisions for government contract oversight, technical expertise and program management office support associated with AOC WS activities. ***FY 2012 OCO Plans:***	5.500	6.554	7.650	-	7.650
Accomplishments/Planned Programs Subtotals	69.975	74.720	98.873	-	98.873

	FY 2010	FY 2011
Congressional Add: Commercial Off The Shelf Technology for Space C2	3.200	-
FY 2010 Accomplishments: Congressional Add for Commercial Off the Shelf Technology for Space C2 was re-programmed to PE 0305614F, Joint Space Operations Center (JSpOC) Mission Systems (JMS) to be executed in accordance with Congressional intent. ***FY 2011 Plans:***		
Congressional Adds Subtotals	3.200	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675117: *Integration Development*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPAF: *PE 0207410F, Air and Space Operations Center Weapon System*	53.887	58.281	15.525	0.000	15.525	48.102	50.463	53.651	32.232	Continuing	Continuing

D. Acquisition Strategy

AOC modernization contractor will be selected via a full and open competition. The modernization contractor will continue to ensure system of systems perspective and systems engineering rigor to evolve AOC to a Net-Centric environment, compliant with DoD Services Oriented Architecture (SOA) standards. The acquisition strategy builds on existing capabilities using evolutionary acquisition to standardize, modernize and sustain the AOC.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675117: *Integration Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
10.1 Integration & Version Upgrades	C/CPAF	LM WSI:Colorado Springs, CO	51.243	18.573	Jan 2011	3.789	Feb 2012	-		3.789	Continuing	Continuing	TBD
IAMD	TBD	TBD:TBD,	-	-		18.600	Jan 2012	-		18.600	0.000	18.600	0.000
10.2 Integration	C/Various	Not specified.:,	9.966	-		-		-		-	0.000	9.966	0.000
10.2 Modernization	C/Various	TBD:TBD,	22.969	30.441	May 2011	55.372	May 2012	-		55.372	Continuing	Continuing	TBD
Training	C/Various	Various:Various,	6.646	3.362	Jan 2011	3.559	Nov 2011	-		3.559	Continuing	Continuing	TBD
Prototyping	C/CPFF	Jacobs:Hanscom, MA	10.380	7.000	Nov 2010	0.500	Dec 2011	-		0.500	Continuing	Continuing	TBD
Cong Add - COTS Tech for Space C2	Various	Not specified.:,	3.200	-		-		-		-	0.000	3.200	TBD
		Subtotal	104.404	59.376		81.820		-		81.820			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test	Various	Various:Various,	4.396	3.273	Oct 2010	3.433	Oct 2011	-		3.433	0.000	11.102	0.000
		Subtotal	4.396	3.273		3.433		-		3.433	0.000	11.102	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	SS/Various	MITRE:Hanscom, MA	10.368	5.517	Oct 2010	5.970	Oct 2011	-		5.970	Continuing	Continuing	TBD

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675117: *Integration Development*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	Various:Hanscom, MA	10.078	6.554	Oct 2010	7.650	Oct 2011	-		7.650	Continuing	Continuing	TBD
		Subtotal	20.446	12.071		13.620		-		13.620			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	129.246	74.720		98.873		-		98.873			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675117: *Integration Development*

AOC WS Integrated Master Schedule

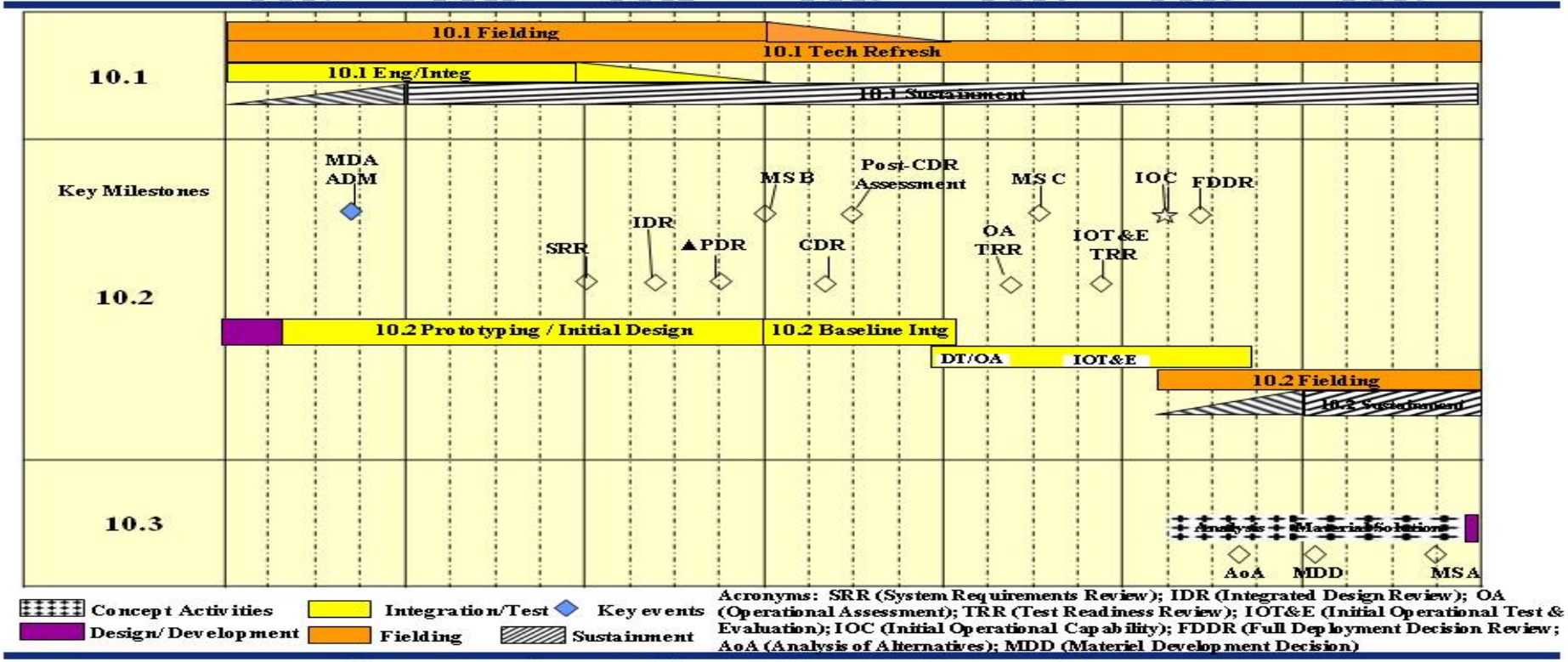


Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	**PROJECT** 675117: *Integration Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Increment 10.1 Fielding	1	2010	4	2013
Increment 10.2 Prototyping/Initial Design	2	2010	1	2013
Increment 10.2 Baseline Integration	1	2013	1	2014
Increment 10.2 ADM issued	3	2010	3	2010
Increment 10.2 MS B	4	2012	4	2012
Increment 10.3 MDD	1	2016	1	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675218: *Applications Development*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675218: *Applications Development*	8.677	10.980	15.894	-	15.894	9.234	9.702	10.303	10.479	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This budget activity funds operational development necessary to acquire, modify, and sustain segments of Air Force's Command and Control (C2) capabilities and services. Applications Development provides worldwide operational capabilities for AF C2 in support of DoD, Coalition Partners, and other government agencies. These efforts focus on, but are not limited to support of the Combined/Joint Force Air Component Commander (C/JFACC), which provides air, space and cyber support as presented to the Air and Space Operations Center (AOC) and to other C2 systems. Applications Development activities include but are not limited to the following: 1) Theater Battle Management Core System (TBMCS) Force Level (FL) program which delivers joint air battle planning, management and execution capabilities; 2) Command and Control Air Operations Suite (C2AOS) which develops, matures, fields and maintains next-generation net-centric C2 services and capabilities for air battle planning, execution and management functions; 3) Personnel Recovery Command and Control (PRC2) program which develops and delivers tools and services for planning and managing search and rescue efforts, and disseminating related information; and 4) Command and Control Information Services (C2IS) which creates web-enabled information services to expose air operations data using standardized schemas, such as those developed by the Air Operations Community of Interest (AO COI). The AO COI defines and develops air operations vocabulary and data models upon which net centric information services are built. Core activities include but are not limited to: 1) maintaining operational viability of the current Joint System of Record (TBMCS 1.1.3); 2) developing capabilities to support planning and replanning of the Air Battle Plan; generation and dissemination of the Air Tasking Order; air and space defensive planning and execution; targeting; weaponeering; personnel recovery tasks; other applications and services supporting C2 utilized in the joint environment and 3) providing support to and participating in the AO COI to improve air operations information interoperability among all joint and coalition systems within the AO domain; 4) developing and assessing C2 air, space, and cyber technologies that will improve joint and coalition warfighter interoperability, including participation in annual NATO Coalition Warrior Interoperability Demonstration (CWID) activities, and 5) transitioning existing C2 capabilities to a net-centric environment. Applications Development efforts include evaluation and maturation of future air, space, and cyber C2 concepts identified through research, risk reduction, prototyping, current operations, exercises and demonstrations. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: TBMCS FL ***Description:*** Theater Battle Management Core System (TBMCS) Force Level (FL) program delivers joint air battle planning, management and execution capabilities.	-	-	1.000	-	1.000

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675218: *Applications Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** Development efforts associated with Maintenance Release 3 needed to ensure continued viability, and interoperability with joint systems of record. ***FY 2012 OCO Plans:***					
Title: NATO ***Description:*** NATO International Cooperation Research and Development. Efforts to develop air, space, and cyber Information Exchange Requirements and capabilities between TBMCS and NATO systems to promote interoperability. ***FY 2010 Accomplishments:*** Continued development of technologies that will improve joint and coalition warfighter capability. ***FY 2011 Plans:*** Continued development of technologies that will improve joint and coalition warfighter capability. ***FY 2012 Base Plans:*** Continued development of technologies that will improve joint and coalition warfighter capability. ***FY 2012 OCO Plans:***	0.300	0.300	0.300	-	0.300
Title: C2IS ***Description:*** Command and Control Information Services (C2IS) creates web-enabled information services to expose air operations data in TBMCS applications and systems using standardized schemas. ***FY 2010 Accomplishments:*** Risk Reduction Efforts (RREs) for Air Space, Air Mission, and Air Request which support the development and refinement of program acquisition strategy. ***FY 2011 Plans:***	2.892	4.449	9.434	-	9.434

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675218: *Applications Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue Risk Reduction Efforts (RREs) for Air Space, Air Mission, and Air Request which support the development and refinement of program acquisition strategy. ***FY 2012 Base Plans:*** Start development for Air Space and Air Request capabilities. ***FY 2012 OCO Plans:***					
Title: PRC2 ***Description:*** Personnel Recovery Command and Control (PRC2) develops and delivers capabilities and services for planning and executing personnel recovery of isolated personnel, and disseminating related information. ***FY 2010 Accomplishments:*** Launched PRMS v2.1.5 at National PRC2 Center and developing acquisition strategy for mission management capabilities. ***FY 2011 Plans:*** Start prototype development on mission management capabilities. Stand up COOP site. ***FY 2012 Base Plans:*** Continue prototype development and field mission management capabilities. ***FY 2012 OCO Plans:***	1.995	2.059	2.068	-	2.068
Title: C2AOS ***Description:*** Command and Control Air Operations Suite (C2AOS) develops next-generation net-centric C2 services and capabilities for air battle planning, execution and management functions. ***FY 2010 Accomplishments:*** RREs for Air Space and Air Mission to support the development and refinement of program acquisition strategy. ***FY 2011 Plans:*** Continue RREs for Air Space and Air Mission to support the development and refinement of program acquisition strategy. ***FY 2012 Base Plans:***	3.490	4.172	3.092	-	3.092

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675218: *Applications Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Start development for Air Space capability.					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	8.677	10.980	15.894	-	15.894

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207410F: *Air and Space Operations Center Weapon System, OPAF*	16.946	15.772	18.270	0.000	18.270	5.590	5.567	5.623	5.724	Continuing	Continuing

D. Acquisition Strategy

Projects will be awarded following full and open competition and will use an evolutionary acquisition strategy based on incremental development.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675218: *Applications Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Training Development	C/FFP	Chinega Tech Services Corp:Alexandria, VA	0.065	-		-		-		-	Continuing	Continuing	TBD
C2IS	C/FFP	Solers Inc:Arlington, VA	0.830	1.665	Feb 2011	6.903	Feb 2012	-		6.903	Continuing	Continuing	TBD
PRC2	Various	Various:Various,	0.803	-		-		-		-	Continuing	Continuing	TBD
PRC2 Follow on Development	TBD	TBD:TBD,	-	1.037	May 2011	0.957	May 2012	-		0.957	Continuing	Continuing	TBD
C2AOS	C/CPFF	Northrop Grumman:Bethpage, NY	2.572	1.663	Apr 2011	1.310	Apr 2012	-		1.310	Continuing	Continuing	TBD
TBMCS FL	Various	Various:Various,	-	-		1.000	Jan 2012	-		1.000	Continuing	Continuing	TBD
		Subtotal	4.270	4.365		10.170		-		10.170			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation.	PO	46th Test Squadron:Eglin AFB, FL	0.252	0.200	Dec 2010	0.200	Dec 2011	-		0.200	Continuing	Continuing	TBD
Ops Test and Evaluation	PO	AFOTEC:Kirtland AFB, NM	-	0.600	Dec 2010	-		-		-	Continuing	Continuing	TBD
		Subtotal	0.252	0.800		0.200		-		0.200			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675218: *Applications Development*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	SS/Various	MITRE:Hanscom AFB, MA	3.459	1.835	Oct 2010	1.890	Oct 2011	-		1.890	Continuing	Continuing	TBD
A and AS	C/CPFF	Jacobs Technology:Hanscom AFB, MA	4.118	3.463	Dec 2010	-		-		-	Continuing	Continuing	TBD
A and AS.	C/TBD	TBD:TBD,	-	-		3.096	Dec 2011	-		3.096	0.000	3.096	0.000
Program Support	C/Various	Oasis:Hanscom AFB, MA	0.708	0.517	Jan 2011	-		-		-	Continuing	Continuing	TBD
Program Support.	C/TBD	TBD:TBD,	-	-		0.538	Jan 2012	-		0.538	0.000	0.538	0.000
		Subtotal	8.285	5.815		5.524		-		5.524			

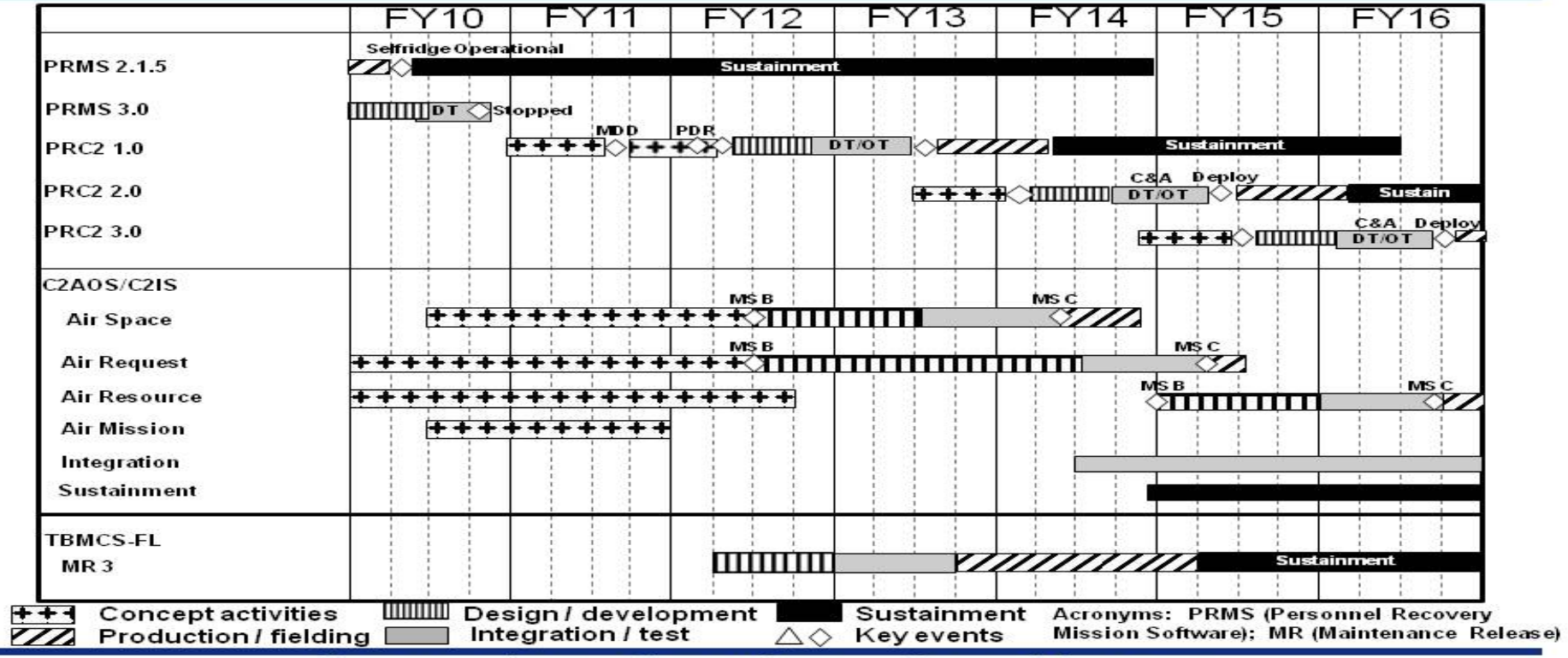
	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.807	10.980		15.894		-		15.894			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675218: *Applications Development*

C2 Applications Development Schedule

U.S. AIR FORCE



Integrity - Service - Excellence as of January 2011

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	**PROJECT** 675218: *Applications Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
PRMS 2.1.5 Sustainment	2	2010	4	2014
PRMS 3.0 Development and Test	1	2010	4	2010
PRC2 1.0 Concept Development and Risk Reduction Activities	1	2011	2	2012
PRC2 1.0 Development and Testing	2	2012	2	2013
PRC2 1.0 Deployment	3	2013	2	2014
PRC2 1.0 Sustainment	2	2014	2	2016
PRC2 2.0 Concept Development and Risk Reduction Activities	2	2013	1	2014
PRC2 2.0 Development and Testing	1	2014	2	2015
PRC2 2.0 Deployment	3	2015	1	2016
PRC2 2.0 Sustainment	1	2016	4	2016
PRC2 3.0 Concept Development and Risk Reduction Activities	4	2014	2	2015
PRC2 3.0 Development and Testing	3	2015	3	2016
C2AOS/C2IS - Air Space Pre-Milestone B Activities	2	2010	2	2012
C2AOS/C2IS - Air Request Pre-Milestone B Activities	1	2010	2	2012
C2AOS/C2IS - Air Resource Pre-Milestone B Activities	1	2010	3	2012
C2AOS/C2IS - Air Mission Pre-Milestone B Activities	3	2010	4	2011
C2AOS/C2IS - Air Space and Air Request Milestone B	3	2012	3	2012
C2AOS/C2IS - Air Space Post-Milestone B Development and Testing	3	2012	2	2014
C2AOS/C2IS - Air Request Post-Milestone B Development and Testing	3	2012	2	2015
C2AOS/C2IS - Air Space Milestone C	2	2014	2	2014
C2AOS/C2IS - Air Resource Milestone B	1	2015	1	2015
C2AOS/C2IS - Air Resource Post-Milestone B Development and Testing	1	2015	3	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675218: *Applications Development*

	Start		End	
Events	Quarter	Year	Quarter	Year
C2AOS/C2IS - Air Request Milestone C	2	2015	2	2015
TBMCS FL Maintenance Release 3 Design, Development, Integration and Test	2	2012	3	2013
TBMCS FL Maintenance Release 3 Deployment	3	2013	1	2015
TBMCS FL Maintenance Release 3 Sustainment	2	2015	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675220: *Unit Level*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675220: *Unit Level*	6.682	7.402	7.113	-	7.113	7.410	7.552	7.660	7.750	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Unit Level / Unit Command and Control (UL/UC2) program develops, integrates, fields, and maintains an evolving sequence of increasing software capabilities that support the execution of the air battle plan and the air tasking order message received from the force level systems. UL/UC2 Operations software systems provide both the scheduling and mission preparation activities at the wing, group and squadron level, and the capabilities to report and track the success of each mission and influence decisions on future Air Battle Planning. UL/UC2 Intelligence capabilities ensure detailed threat, target and imagery information are made available to mission commanders and aircrews planning current flight operations. At many bases, UL/UC2 is fielded to the Wing Operations Center (WOC), the Maintenance Operations Center (MOC), the Squadron Operations Center (SOC), and many other work-centers.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Software Development	5.598	5.150	4.762	-	4.762
Description: UL/UC2 operations and intelligence capabilities development/integration. ***FY 2010 Accomplishments:*** Continued development and integration of Integrated Information Management System (IIMS) for UL/UC2 Increment 1, and further development/integration of Situational Awareness Portlets. Enhanced Incident Management capabilities delivered in Increment 1. ***FY 2011 Plans:*** UL/UC2 Increment 2 provides new Emergency Response and Incident management capabilities; new external interfaces to eliminate duplicate data entry; expanded Situation Awareness Portlets; and improved tasking, management, and execution monitoring. Modernization of the host hardware and operating system will facilitate hosting the UL/UC2 in a regional virtual server environment. ***FY 2012 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675220: *Unit Level*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Pre-Milestone B development of UC2 Block 10 which will provide migration of UL/UC2 into a service oriented infrastructure capable of meeting the Net-Ready key performance parameter; implements elements of the Installation Control Center (ICC) Enabling Concept, combining unit level intelligence, operations and other functional areas into a single installation wide C2 capability. Continues to add external interfaces to eliminate duplicate data entry. ***FY 2012 OCO Plans:***					
Title: Testing and Test Support ***Description:*** Testing and test support activities. ***FY 2010 Accomplishments:*** Testing and test support activities for UL/UC2 Ops Increment 2. ***FY 2011 Plans:*** Testing and test support activities for UL/UC2 Ops. ***FY 2012 Base Plans:*** Testing and test support activities for UC2 Block 10. ***FY 2012 OCO Plans:***	0.460	0.679	0.776	-	0.776
Title: System Engineering ***Description:*** System Engineering ***FY 2010 Accomplishments:*** System engineering and technical support, including requirements analysis, for UL/UC2 Ops Increment 2. ***FY 2011 Plans:*** System engineering and technical support, including requirements analysis, for UL/UC2 Ops Increment 3. ***FY 2012 Base Plans:*** System engineering and technical support, including requirements analysis, for UC2 Block 10. ***FY 2012 OCO Plans:***	0.312	0.340	0.350	-	0.350
Title: Program Support and Travel	0.312	1.233	1.225	-	1.225

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675220: *Unit Level*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Program support and travel for UL/UC2 Ops Inctrement 2 and UC2 Block 10. ***FY 2010 Accomplishments:*** Program support and travel for UL/UC2 Ops Increment 2 and UC2 Block 10. ***FY 2011 Plans:*** Program support and travel for UL/UC2 efforts. ***FY 2012 Base Plans:*** Program support and travel for UC2 efforts. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	6.682	7.402	7.113	-	7.113

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207410F: *Air and Space Operations Center, OPAF*	12.632	4.753	4.031	0.000	4.031	4.024	4.016	4.004	4.109	Continuing	Continuing

D. Acquisition Strategy

Projects will be awarded following full and open competition and will use an evolutionary acquisition strategy based on incremental development.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675220: *Unit Level*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Increment Development	C/CPIF	Lockheed Martin:Hampton, VA	10.459	4.251	Feb 2011	-		-		-	0.000	14.710	0.000
Block Development	C/Various	TBD:,	-	-		4.108	Oct 2011	-		4.108	Continuing	Continuing	0.000
Third Party Integration	Various	Various:,	1.488	0.900	Apr 2011	0.710	Apr 2012	-		0.710	Continuing	Continuing	0.000
		Subtotal	11.947	5.151		4.818		-		4.818			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	PO	46TS:Eglin AFB, FL	0.955	0.679	Oct 2010	0.752	Oct 2011	-		0.752	Continuing	Continuing	TBD
		Subtotal	0.955	0.679		0.752		-		0.752			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPAF	MITRE:Bedford, MA	0.951	0.340	Oct 2010	0.350	Oct 2011	-		0.350	Continuing	Continuing	TBD
Program Office Support and Travel	Various	Various:Bedford, MA	0.970	1.232	Oct 2010	1.193	Oct 2011	-		1.193	Continuing	Continuing	TBD
		Subtotal	1.921	1.572		1.543		-		1.543			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	PROJECT 675220: *Unit Level*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.823	7.402		7.113		-		7.113			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	**PROJECT** 675220: *Unit Level*

Unit Level

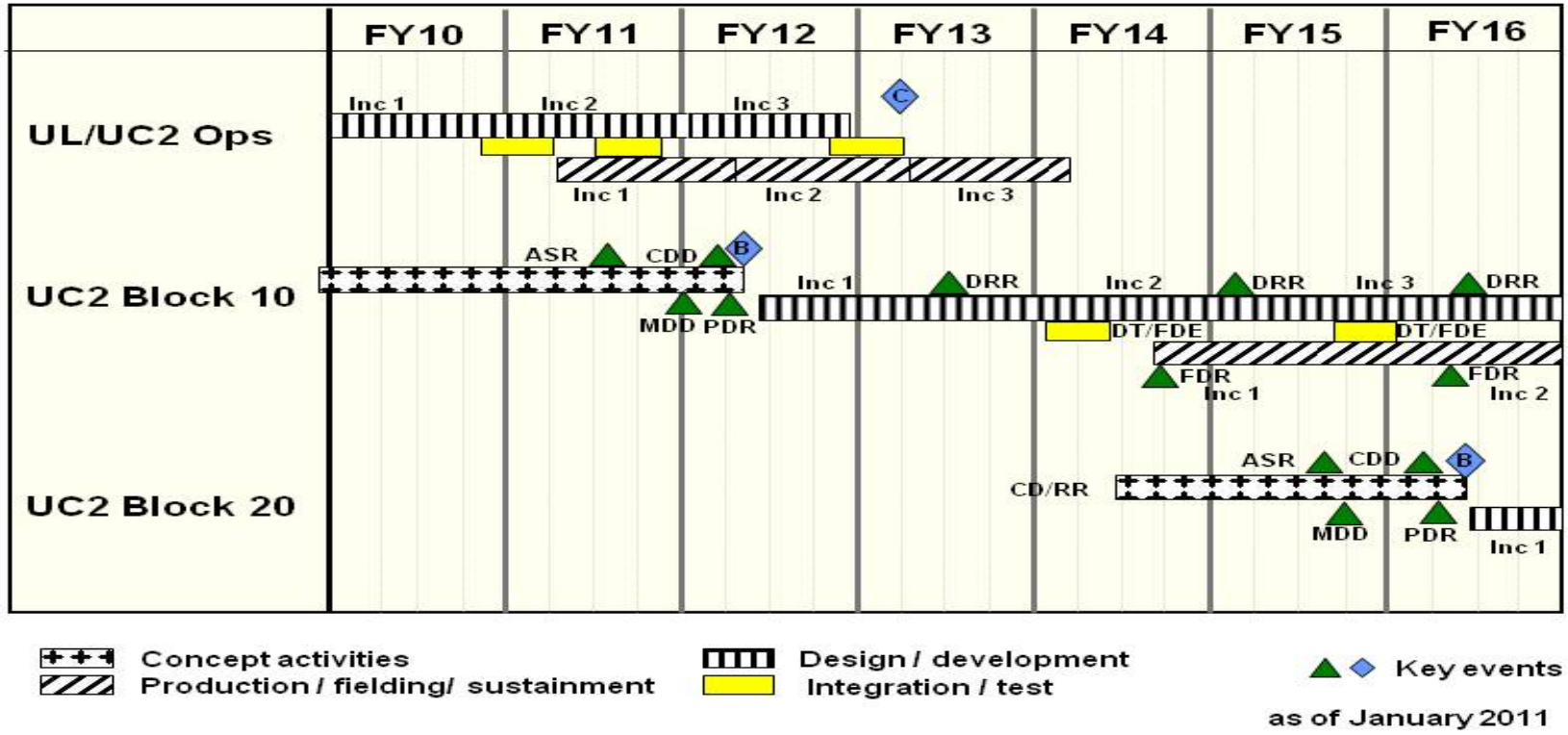


Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207410F: *Air and Space Operations Center - Weapon System (AOC-WS)*	**PROJECT** 675220: *Unit Level*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
UL/UC2 Ops Post-Milestone B Development and Testing Continued	1	2010	1	2013
UL/UC2 Ops Milestone C	1	2013	1	2013
UL/UC2 Ops Post-Milestone C Production and Fielding	2	2013	1	2014
UC2 Block 10 Pre-Milestone B Activities Continued	1	2010	2	2012
UC2 Block 10 Milestone B	2	2012	2	2012
UC2 Block 10 Post-Milestone B Development and Testing	2	2012	4	2016
UC2 Block 20 Pre-Milestone B Activities	2	2014	2	2016
UC2 Block 20 Milestone B	2	2016	2	2016
UC2 Block 20 Post-Milestone B Development and Testing	2	2016	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207412F: *Control and Reporting Center (CRC)*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	48.616	58.313	3.954	-	3.954	7.212	3.129	0.559	0.569	Continuing	Continuing
67485L: *Theater Air Control System Imp (TACSI)*	3.697	9.614	3.954	-	3.954	7.212	3.129	0.559	0.569	Continuing	Continuing
675294: *Theater Air Control System Improvement - Radar (TACSI-R)*	44.919	48.699	-	-	-	-	-	-	-	Continuing	Continuing

Note

In FY 2012, BPAC 675294, Theater Control System Improvement-Radar (TACSI-R) efforts transfer to PE 0604283F, Battle Management Command & Control (BMC2) Sensor Development, BPAC 646002, Three Dimensional Expeditionary Long Range Radar in order to provide this pre-Major Defense Acquisition Program its own Program Element.

A. Mission Description and Budget Item Justification

This budget activity funds development of mobile ground-based command and control (C2) capabilities of the Control and Reporting Center (CRC) program. The CRC is identified as a component of the Integrated Air Missile Defense Family of Systems that defends the Homeland and US national interests at home and abroad by negating an adversary's ability to achieve adverse effects from their air and missile capabilities. The CRC mission is to provide battlespace awareness and tactical battle management command and control (BMC2) in an assigned area. It is a ground-based theater air control system (TACS) surveillance and BMC2 element. It consists of facilities, equipment, and people and is a tailorable, modular, transportable, sustainable and persistent weapon system employed at the tactical level to support air and surface operations. Currently, the CRCs are fully employed in Operations IRAQI FREEDOM, ENDURING FREEDOM, and NOBLE EAGLE. The CRC projects include development and modernization of Theater Air Control Systems Improvement (TACSI) capabilities and the Three-Dimensional Expeditionary Long-Range Radar (3DELRR). TACSI efforts include, but are not limited to the AN/TYQ-23 Operations Module (OM), AN/TPS-75 Long-Range Surveillance Radar and the AN/TRC-215 Remote Radio Secure Voice System (RRSVS) that may be tasked across the full range of military operations. AN/TYQ-23 OM is a low source/high demand (LS/HD) deployable ground-based C2 asset. This automated, computer-based information system provides operators the real-time battlespace visualization necessary to plan, direct, and control tactical air operations and airspace management tasks. AN/TRC-215 RRSVS is a mobile, vehicle-mounted voice radio and OM-interface unit. The RRSVS allows real-time, secure voice communication between aircraft operating in the battlespace and ground-based BMC2 operators located in the OM of the CRC. The AN/TRC-215 is typically deployed to a remote area which can extend the CRCs radio coverage beyond line of sight (BLOS) using organic SATCOM capabilities. The 3DELRR program is developing a replacement for the current legacy AN/TPS-75 radar. 3DELRR will be the principal USAF long-range, ground-based sensor for detecting, identifying, tracking, and reporting aircraft and missiles in support of the Joint Forces Air Component Commander (JFACC) through the Ground Theater Air Control System (GTACS). The primary mission of the 3DELRR will be to provide long-range surveillance, control of aircraft, theater ballistic missile detection and Combat Identification (CID). The 3DELRR will respond to the operational need to detect and report highly maneuverable, small radar cross section targets to enable battlespace awareness while at the same time mitigating the reliability, maintainability, and sustainability issues plaguing the AN/TPS-75 radar system. Ongoing planning and associated activities will take place to prevent and overcome diminishing manufacturing sources and obsolescence issues as required.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207412F: *Control and Reporting Center (CRC)*

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	52.177	58.313	64.815	-	64.815
Current President's Budget	48.616	58.313	3.954	-	3.954
Total Adjustments	-3.561	-	-60.861	-	-60.861
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.342	-			
• Other Adjustments	-0.219	-	-60.861	-	-60.861

Change Summary Explanation

The FY12 funding decrease is due to the 3DELRR program funding being moved into PE 0604283F, Battle Management Command & Control Sensor Development.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207412F: *Control and Reporting Center (CRC)*	PROJECT 67485L: *Theater Air Control System Imp (TACSI)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
67485L: *Theater Air Control System Imp (TACSI)*	3.697	9.614	3.954	-	3.954	7.212	3.129	0.559	0.569	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Control and Reporting Center (CRC) program element provides development and modernization of mobile ground-based command and control (C2) capabilities. The CRC is a ground-based theater air control system (TACS) surveillance and battle management command and control (BMC2) element. It consists of facilities, equipment, and people. It is a tailorable, modular, transportable, sustainable, and persistent weapon system employed at the tactical level to support air and surface operations. The CRC projects include development of Theater Air Control Systems Improvement (TACSI) capabilities and the Three-Dimensional Expeditionary Long-Range Radar (3DELRR). Currently USAF CRCs are fully employed in Operations IRAQI FREEDOM, ENDURING FREEDOM, and NOBLE EAGLE. The TACSI project develops and modernizes software and hardware to make the CRC a viable BMC2 element. These efforts include, but are not limited to, the development and modernization of the AN/TYQ-23 Operations Module (OM) and the AN/TRC-215 Remote Radio Secure Voice System (RRSVS). AN/TYQ-23 OM is a low source/high demand (LS/HD) rapidly deployable ground-based C2 asset. This automated, computer-based information system provides operators the real-time battlespace picture necessary to plan, direct, and control tactical air operations and airspace management tasks. AN/TRC-215 RRSVS is a mobile, vehicle-mounted voice radio and OM-interface unit. The RRSVS allows real-time, secure voice communication between aircraft operating in the battlespace and ground-based battle management C2 operators located in the OM of the CRC. OMs and RRSVS units are currently deployed world-wide in support of ongoing operations. In the absence of a replacement C2 system, Service Life Extension Program (SLEP) efforts to provide capability upgrades/improvements such as associated Mode 5 passive and/or active Identify Friend or Foe (IFF), are being developed for the CRC. Beginning in FY12, activities will include, but not be limited to, studies, analysis, design and prototype, documentation, testing, and production to support both current program planning and execution and future program planning. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Continue upgrades to CRC	2.756	8.502	3.137	-	3.137
Description: Continue upgrades to CRC to include advanced planning, Modular Control System (MCS) upgrades, enhanced radio/radar/data link remoting, integrating upgrades into CRC, and AN/TPS-75 sensor replacement/upgrade.					
FY 2010 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207412F: *Control and Reporting Center (CRC)*	PROJECT 67485L: *Theater Air Control System Imp (TACSI)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continued development of remote HF and SATCOM radio software to provide operators ability to remotely control radios in RRSVS; conducted Radio Replacement Study; continued development of AN/TYQ-23 V5 SLEP Prototype, initial integration & drawing package. ***FY 2011 Plans:*** Continuing development & delivery of software upgrades to RRSVS to include, but not limited to, develop designs for next increment of RRSVS & redesign remote control terminal and server software to operate on a Linux based operating system; continuing development & delivery of AN/TYQ-23 V5 SLEP Prototype and redline drawing package; developing initial Mode 5 prototype to include, but not limited to, design of implementation of UPX-41C interrogator replacement to AN/TPS-75 Radar. ***FY 2012 Base Plans:*** Will upgrade AN/TPS-75 to Mode 5 Design: will prepare design to incorporate upgraded UPX-41C interrogator to AN/TPS-75. ***FY 2012 OCO Plans:***					
Title: Test Planning ***Description:*** Test and evaluation support ***FY 2010 Accomplishments:*** Test and evaluation included, but was not limited to, formal information assurance (IA) and lab acceptance test, formal acceptance test, developmental testing of Remote HF and SATCOM radio software. ***FY 2011 Plans:*** Test and evaluation includes, but not limited to, prototype and feasibility testing of changes associated with new radios and transport technology upgrades for RRSVS; test activities for AN/TYQ-23 V5 SLEP Prototype. ***FY 2012 Base Plans:*** Test and evaluation will include, but not be limited to, testing changes of new radios and transport technology upgrades for RRSVS; test activities for radio interface with TYQ-23 Mode 5 or suitable CRC C2 Prototype. ***FY 2012 OCO Plans:***	0.466	0.496	0.397	-	0.397
Title: Sys Eng/Tech Support ***Description:*** Continue Systems Engineering/Technical Support	0.475	0.616	0.420	-	0.420

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207412F: *Control and Reporting Center (CRC)*	PROJECT 67485L: *Theater Air Control System Imp (TACSI)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Continued Systems Engineering/Technical Support ***FY 2011 Plans:*** Coninuing Systems Engineering/Technical Support. ***FY 2012 Base Plans:*** Will continue Systems Engineering/Technical Support. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	3.697	9.614	3.954	-	3.954

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207412F: *Control and Reporting Center, (OPAF)*	22.459	20.231	22.813	0.000	22.813	31.383	27.385	21.953	22.345	Continuing	Continuing

D. Acquisition Strategy

The CRC program is utilizing spiral development to modernize and further advance current and future battlespace awareness and tactical BMC2 capabilities.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207412F: *Control and Reporting Center (CRC)*	PROJECT 67485L: *Theater Air Control System Imp (TACSI)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Remote Radio Spiral 3	MIPR	AFRL:Rome, NY	0.525	0.550	Dec 2010	-		-		-	Continuing	Continuing	TBD
Remote Radio Spiral 3.2	MIPR	SPAWARSYSCEN Atlantic:North Charleston, SC	-	5.952	Dec 2010	-		-		-	0.000	5.952	0.000
Remote Radio Replacement Study	MIPR	SPAWARSYSCEN Atlantic:North Charleston, SC	0.188	-		-		-		-	0.000	0.188	0.000
Mode 5 Upgrade - A	TBD	ESC:Hanscom AFB, MA	-	0.300	Dec 2010	-		-		-	Continuing	Continuing	TBD
Mode 5 Upgrade - B	MIPR	NAWCAD:St Inigoes, MD	-	-		3.137	Dec 2011	-		3.137	0.000	3.137	0.000
Operations Modules (OMs) V5 Service Life Extension Program (SLEP) - A	SS/FFP	CSC:Falls Church, VA	0.198	-		-		-		-	0.000	0.198	0.000
Operations Modules (OMs) V5 Service Life Extension Program (SLEP) - B	PO	309th Maintenance Wing:Ogden ALC, UT	1.644	1.700	Feb 2011	-		-		-	0.000	3.344	0.000
CRC Technology Opportunities & Resource Study (TORS)	SS/TBD	Booz Allen Hamilton, Inc.:McLean, VA	0.201	-		-		-		-	0.000	0.201	0.300
		Subtotal	2.756	8.502		3.137		-		3.137			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Support	TBD	Various:Various,	0.475	0.616	Dec 2010	0.420	Dec 2011	-		0.420	Continuing	Continuing	TBD
		Subtotal	0.475	0.616		0.420		-		0.420			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207412F: *Control and Reporting Center (CRC)*	PROJECT 67485L: *Theater Air Control System Imp (TACSI)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
46th Test Wing/Other Test Activity	Various	Various:Various,	0.466	0.496	Dec 2010	0.397	Nov 2011	-		0.397	0.000	1.359	0.591
		Subtotal	0.466	0.496		0.397		-		0.397	0.000	1.359	0.591

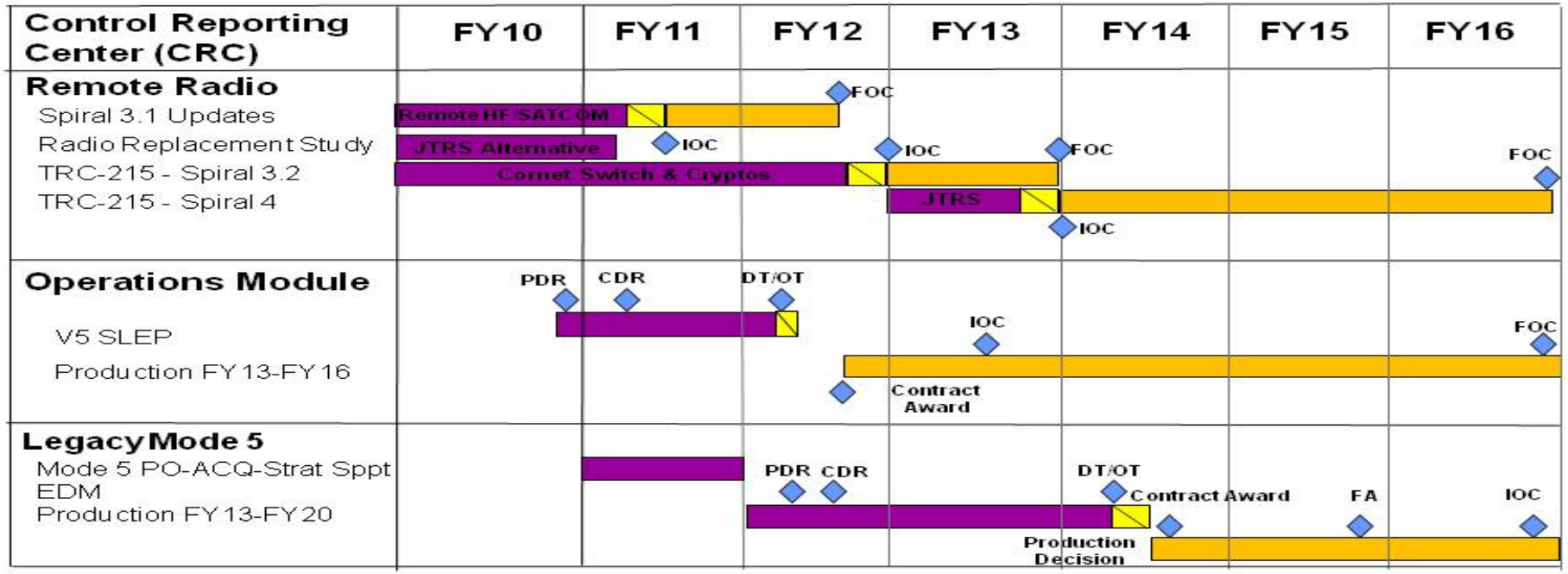
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.697	9.614		3.954		-		3.954			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207412F: *Control and Reporting Center (CRC)*	**PROJECT** 67485L: *Theater Air Control System Imp (TACSI)*



Major Event/Milestone
Design/Development
Production/Fielding
Development Test/Operational Test (DT/OT)

C2: Command and Control
CDR: Critical Design Review
FOC: Full Operational Capability
HF: High Frequency
IFF: Identification Friend or Foe
EDM: Engineering Design Model
IOC: Initial Operational Capability
JTRS: Joint Tactical Radio System
PDR: Preliminary Design Review
SLEP: Service Life Extension Program
SATCOM: Satellite Communication

As of 17 Dec 2010

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207412F: *Control and Reporting Center (CRC)*	**PROJECT** 67485L: *Theater Air Control System Imp (TACSI)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Remote Radio Spiral 3 Design/Development/Test	1	2010	2	2011
Remote Radio Spiral 3 Updates Fielding	3	2011	2	2012
Remote Radio - Radio Replacement Study	1	2010	1	2010
TRC 214 Spiral 4 Concept/Design/Development	1	2013	3	2013
TRC 214 Spiral 4 Developmental Testing	4	2013	4	2013
TRC 214 Spiral 4 Fielding	1	2014	4	2016
TRC 213 Spiral 3.2 Concept/Design/Development	1	2010	3	2012
TRC 213 Spiral 3.2 Developmental Testing	4	2012	4	2012
TRC 213 Spiral 3.2 Fielding	1	2013	4	2013
Mode 5 Acquisition Strategy Support	1	2011	4	2011
Mode 5 PDR	2	2012	2	2012
Mode 5 CDR	3	2012	3	2012
Mode 5 Developmental/Operational Testing	2	2014	3	2014
OM v(5) SLEP PDR	4	2010	4	2010
OM v(5) SLEP CDR	2	2011	2	2011
OM v(5) SLEP Developmental/Operational Testing	2	2012	2	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207412F: *Control and Reporting Center (CRC)*	PROJECT 675294: *Theater Air Control System Improvement - Radar (TACSI-R)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675294: *Theater Air Control System Improvement - Radar (TACSI-R)*	44.919	48.699	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2012, BPAC 675294, Theater Control System Improvement-Radar (TACSI-R) efforts transferred to PE 0604283F, Battle Management Command & Control (BMC2) Sensor Development, BPAC 646002, Three Dimensional Expeditionary Long Range Radar in order to provide this pre-Major Defense Acquisition Program its own Program Element.

A. Mission Description and Budget Item Justification

The Three-Dimensional Expeditionary Long-Range Radar (3DELRR) program is developing a replacement for the current legacy AN/TPS-75 radar. 3DELRR will be the principal USAF long-range, ground-based sensor for detecting, identifying, tracking, and reporting aircraft and missiles in support of the Joint Forces Air Component Commander (JFACC) through the Ground Theater Air Control System (GTACS). The primary mission of the 3DELRR will be to provide long-range surveillance, control of aircraft, and theater ballistic missile detection and Combat Identification (CID). The 3DELRR will respond to the operational need to detect and report highly maneuverable, small radar cross section targets to enable battlespace awareness while at the same time mitigating the reliability, maintainability, and sustainability issues plaguing the AN/TPS-75 radar system. The 3DELRR will provide air controllers with a precise, real-time air picture of sufficient quality to conduct close control of individual aircraft under a wide range of environmental and operational conditions. In the case of theater missile defense operations, the 3DELRR will have the capability to detect, track, and disseminate target information to respective command and control nodes such as the Control and Reporting Center (CRC) to disseminate for warning and engagement. Similarly, the joint targeting process will benefit from trajectory information provided by the 3DELRR, which will include launch and impact location.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Technology Development (TD) and Program Definition and Risk Reduction (PDRR) ***Description:*** Technology development (TD) phase and Program Definition and Risk Reduction (PDRR) efforts associated with delivering a new long-range, ground-based sensor. ***FY 2010 Accomplishments:*** Continue the Technology Development (TD) Phase and risk reduction efforts of 3DELRR. Technical requirements will be baselined, and emphasis will shift to development and risk reduction work leading toward a mature system design. 3DELRR acquisition activities during this phase include, but are not limited to,	35.055	33.955	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207412F: *Control and Reporting Center (CRC)*	PROJECT 675294: *Theater Air Control System Improvement - Radar (TACSI-R)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
maturation of Critical Technology Elements (CTEs) to Technology Readiness Level (TRL) 6, performance-based trade studies, refinement of the Life Cycle Cost Estimate, test planning, modeling and simulation for requirements refinement, development of Milestone B documentation, analysis and identification of program risks, development and implementation of the program protection plan, adaptation and implementation of Open Technology Development (OTD) standards, and support of an independent 3DELRR Technology Readiness Assessment (TRA). ***FY 2011 Plans:*** Continue the Technology Development (TD) Phase and risk reduction efforts of 3DELRR. Activities include demonstration of Critical Technology Elements (CTEs) to Technology Readiness Level (TRL) 6, design options analyses, requirements refinement, identification and analyses of existing and emerging system threats, (including cyber warfare) and capturing those results in appropriate technical requirements, life-cycle cost estimate revision, test planning, and Milestone B documentation development. Initiate PDRR activities after completing a full and open competitive source selection. PDRR activities include, but are not limited to, conducting preliminary design development, development of system functional modeling and simulation, and execution of the program protection plan. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***					
Title: Test and Evaluation Support ***Description:*** Continue Program Support (i.e., travel, supplies, equipment, miscellaneous) ***FY 2010 Accomplishments:*** Test and evaluation to include, but not limited to, development of the test strategy and test-related documentation, planning of future developmental test and evaluation events, information assurance planning, and participation in technical and test-related working groups. ***FY 2011 Plans:*** Test and evaluation to include, but not limited to, development of the test strategy and test-related documentation, planning of future developmental test and evaluation events, information assurance planning, and participation in technical and test-related working groups. ***FY 2012 Base Plans:***	0.268	0.329	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207412F: *Control and Reporting Center (CRC)*	PROJECT 675294: *Theater Air Control System Improvement - Radar (TACSI-R)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2012 OCO Plans:					
Title: Systems Engineering/Technical Support	9.596	14.415	-	-	-
Description: Continue Systems Engineering/Technical Support ***FY 2010 Accomplishments:*** Continue Systems Engineering/Technical Support ***FY 2011 Plans:*** Continue Systems Engineering/Technical Support ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	44.919	48.699	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0604283F: *RDT&E*	0.000	0.000	60.250	0.000	60.250	117.713	95.432	98.842	81.727	Continuing	Continuing

D. Acquisition Strategy

The Three-Dimensional Expeditionary Long-Range Radar (3DELRR) Project is taking a single-step-to-full-capability acquisition approach via full and open competition to further advance C2 capabilities supporting battlefield command and control.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207412F: *Control and Reporting Center (CRC)*	PROJECT 675294: *Theater Air Control System Improvement - Radar (TACSI-R)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Analysis of Alternatives Update	MIPR	DTIC-R:Ft Belvoir, VA	1.401	-		-		-		-	0.000	1.401	0.000
Risk Reduction - A	TBD	TBD:TBD,	1.568	-		-		-		-	Continuing	Continuing	TBD
Risk Reduction - B	SS/CPFF	MIT/Lincoln Laboratory:Lexington, MA	2.566	-		-		-		-	Continuing	Continuing	TBD
Risk Reduction - C	SS/CPFF	Carnegie Mellon University:Pittsburgh, PA	0.234	-		-		-		-	0.000	0.234	0.000
Modeling & Simulation	SS/CPFF	MIT/Lincoln Laboratory:Lexington, MA	1.613	4.268	Mar 2011	-		-		-	0.000	5.881	0.000
CDD Update	MIPR	DTIC:Ft Belvoir, VA	0.300	-		-		-		-	0.000	0.300	0.000
System Threat Assessment	SS/CPFF	MITRE:Bedford, MA	0.300	0.687	Nov 2010	-		-		-	0.000	0.987	0.000
Capability Demonstration	MIPR	728 ACS:Eglin AFB, FL	0.005	-		-		-		-	0.000	0.005	0.000
Technology Demonstration (TD) - A	C/FFP	Lockheed Martin Corp, MS2 Radar Systems:Liverpool, NY	14.993	-		-		-		-	0.000	14.993	24.851
Technology Demonstration (TD) - B	C/FFP	Sensis Corp:East Syracuse, NY	12.075	-		-		-		-	0.000	12.075	21.933
Program Definition & Risk Reduction	C/CPIF	TBD:TBD,	-	29.000	Aug 2011	-		-		-	0.000	29.000	TBD
		Subtotal	35.055	33.955		-		-		-			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering - A	SS/CPFF	MITRE:Bedford, MA	2.374	3.306	Oct 2010	-		-		-	0.000	5.680	0.000
Systems Engineering - B	SS/CPFF	MIT/Lincoln Laboratory:Lexington, MA	2.697	4.015	Jan 2011	-		-		-	0.000	6.712	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207412F: *Control and Reporting Center (CRC)*	PROJECT 675294: *Theater Air Control System Improvement - Radar (TACSI-R)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering - C	MIPR	Naval Research Laboratory:Washington, DC	0.460	0.617	Nov 2010	-		-		-	0.000	1.077	0.000
Systems Engineering - D	SS/CPFF	Carnegie Mellon University:Pittsburgh, PA	0.455	0.502	Dec 2010	-		-		-	0.000	0.957	0.000
Technical Support	C/CPFF	Various:Various,	3.610	5.975	Dec 2010	-		-		-	0.000	9.585	0.000
		Subtotal	9.596	14.415		-		-		-	0.000	24.011	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
46th Test Wing/Other Test Activity	Various	Various:Various,	0.268	0.329	Oct 2010	-		-		-	0.000	0.597	0.000
		Subtotal	0.268	0.329		-		-		-	0.000	0.597	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	44.919	48.699		-		-		-			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207412F: *Control and Reporting Center (CRC)*	PROJECT 675294: *Theater Air Control System Improvement - Radar (TACSI-R)*

3DELRR Program Schedule

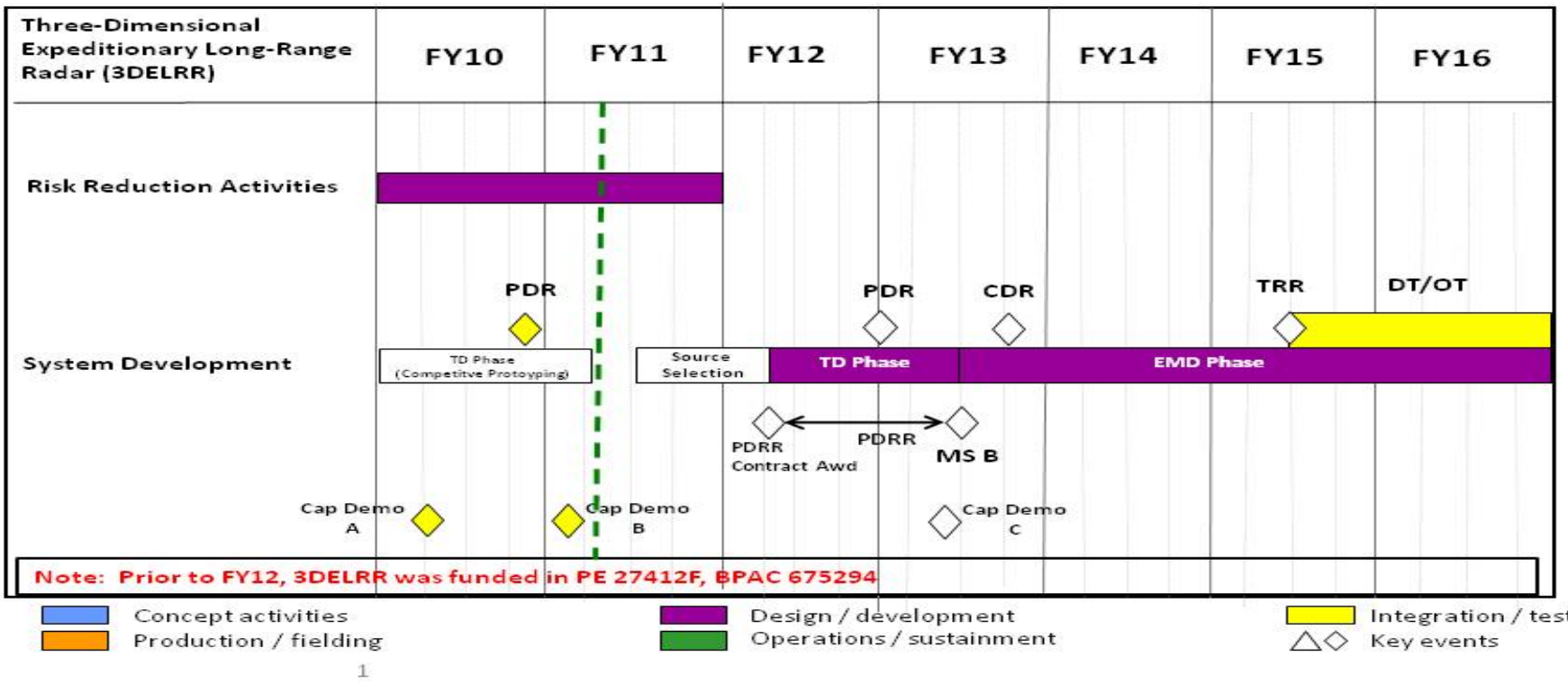


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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207412F: *Control and Reporting Center (CRC)*	**PROJECT** 675294: *Theater Air Control System Improvement - Radar (TACSI-R)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
3DELRR On-going Risk Reduction (continued from Project 485L)	1	2010	2	2011
3DELRR On-going System Development (continued from Project 485L)	1	2010	4	2016
3DELRR TD Phase Capability Demo A	2	2010	2	2010
3DELRR Preliminary Design Review (TD Phase - Prototyping)	4	2010	4	2010
3DELRR TD Phase Capability Demo B	1	2011	1	2011
3DELRR PDRR Contract Award	4	2011	4	2011

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207417F: *Airborne Warning and Control System (AWACS)*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	138.053	239.755	135.961	-	135.961	150.120	149.540	152.028	100.436	Continuing	Continuing
67411L: *Airborne Warning & Control System (AWACS)*	138.053	239.755	135.961	-	135.961	150.120	149.540	152.028	100.436	Continuing	Continuing

Note

1. Totals include funding for Program Resources Collection Process (PRCP) Program Number, 277, AWACS Upgrade (for Block 40/45 Upgrade).
2. The program funding includes reduction for Overhead Reduction, Service Support Contractors, and Reports/Studies/Boards efficiencies that are not intended to impact program content. The efficiencies reductions total $17.565M in FY12.

A. Mission Description and Budget Item Justification

Mission: AWACS is the premier airborne platform providing command and control (C2)/battle management (BM) to Commander In Chief and combatant commander tasking for Joint, Allied, and Coalition operations, Humanitarian Relief, and Homeland Defense. AWACS provides a real-time picture of friendly, neutral, and hostile air activity. Its capabilities include all-altitude/all-weather surveillance of the battle space; early warning of enemy actions; a real-time ability to find, fix, track, and assess airborne or maritime threats; and detection, location, and identification of electronic emitters.

This program element funds three areas in support of the AWACS program; Modernization, Material Solutions Development and Analysis, and Infrastructure and Support Systems.

This program element funds the following AWACS modernization efforts (RDT&E, AF):

1. Block 40/45 is replacing AWACS 1970's vintage mission systems that are experiencing Diminishing Manufacturing Sources (DMS) issues, are difficult and expensive to upgrade, and limit overall AWACS system performance. The Block 40/45 upgrade will improve integration, quality and timeliness of sensor data to the shooter, improve Combat Identification (CID), improve AWACS contribution to Time Critical Targeting via Data Link Infrastructure (DLI), improve electronic support measures processing and enable more effective, faster upgrades via an open-system, Ethernet-based architecture. The upgrade will also update the ground support infrastructure including training systems.

2. The Next Generation Identification Friend or Foe (NGIFF) Program provides AWACS with enhanced IFF interrogator operation to add a more secure Mode 5 capability. NSA declared IFF Mode 4 unsecure and obsolete on 5 Nov 2003. Joint Requirements Oversight Council Memo 047-07 requires IFF Mode 5 interrogation capability by FY14. The new Mode 5 interrogation capability extends the effective range of the AWACS interrogator, while helping discriminate against closely spaced cooperative targets. NGIFF developed and integrated a basic Mode 5 capability on Block 30/35 starting in FY09 and full Mode 5 on Block 40/45 in FY10. Hardware will be common between the platforms. NGIFF will also integrate Mode S, a civilian air traffic control capability residing in the NGIFF hardware, as funding allows.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207417F: *Airborne Warning and Control System (AWACS)*

3. Diminishing Manufacturing Sources (DMS) Replacement of Avionics for Global Operations and Navigation (DRAGON) completes the FAA/International Civil Aviation Organization (ICAO)/ EUROCONTROL air traffic control mandated safety of flight capabilities. This program will provide the E-3 fleet with the flight instruments and other avionics for the Required Navigation Performance (RNP), and the surveillance and communication capabilities necessary to maintain continued critical unrestricted access to global airspace. Non-compliance will result in airspace restrictions and denials that will impact AWACS ability to support worldwide responses to situations requiring immediate on-scene command and control (C2) battle management. The DRAGON modifications replace the existing DMS GPS Integrated Navigation System (GINS) with a modern Flight Management System (FMS) that will accommodate new capabilities including Mode-5 IFF and Joint Mission Planning System (JMPS). Also included as part of the modification is the addition of data link communications, voice and data link digital radios, and improved visual displays. Emphasis on employment of COTS avionics is expected to lower cost, reduce the tech refresh cycle, and enhance life cycle management. Replacement of critical avionics subsystems that will become unsustainable beginning in 2010 are included in the DRAGON program. The Engineering and Manufacturing Development (EMD) phase of DRAGON is planned to be executed cooperatively between US and NATO. The US and NATO are currently pursuing a cooperative risk reduction effort and working towards award of a cooperative EMD contract in FY11.

4. Support the War Fighter (STWF): STWF efforts support AWACS capability to create and sustain the force. Examples of these activities include, but are not limited to: Designing, developing, and modernizing equipment and systems to ensure AWACS can respond to urgent wartime/contingency acquisition requirements (e.g. Urgent Operational Needs (UONs) and Wartime Urgent & Compelling Needs (WUCNs). Upgrading key capabilities to meet contingency needs, modernizing test systems, integrating battle management and data link enhancements, and supporting Reliability, Maintainability, and Availability (RM&A) initiatives which:

a. Improve the Mission Capable (MC) rate through RM&A analysis and development projects to provide system improvements that help meet or exceed the required MC rate. These efforts focus on increasing reliability of the air vehicle, command and control systems, voice and data communications systems, computer, sensor systems and infrastructure improvements.
b. Solve diminishing manufacturing sources (DMS) logistics problems.
c. Insert new technologies with the aim of reducing maintenance man-hours along with programmed depot maintenance (PDM) improvements to increase aircraft availability.

5. The Data Link Enhancements (DLE) program provides the warfighter with improved Link 16 capabilities aimed at increasing the target location accuracy, situational awareness, and the reduced potential for fratricide and collateral damage. This program is essential to maintaining and improving Tactical Data Links (TDL) interoperability and compatibility.

6. The Flight Performance Software (FPS) program automates calculations currently performed manually by the pilot and flight engineer in accordance with E-3B and C flight manual. Phase I, automates the Takeoff and Landing (TOLD) calculations; Phase II automates the High Speed calculation. Automated calculations, using the original source data used to create the flight manual charts increases safety, improves on time departure/arrival, improves crew efficiency, and reduces tanker support.

This program element funds the following AWACS Infrastructure and Support Systems. These efforts synchronize modernization requirements and infrastructure support across the entire weapon system from depot and field test equipment, to maintenance trainers, to simulators, to integration labs, to the TS-3 Developmental Test and Evaluation Aircraft (RDT&E, AF):

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207417F: *Airborne Warning and Control System (AWACS)*

1. Test System-3/AWACS Integration Test Support (AITS): The E-3 AWACS Developmental Test and Evaluation (DT&E) aircraft, Test System 3 (TS-3, tail number 73-1674) and the Avionics Integration Laboratory (AIL) are Government owned/contractor managed, maintained and operated system level DT&E assets. These test-ready assets support AWACS modernization, with already imbedded test points to support sub-system and system level developmental testing, per Boeing,'s TS-3 design specifications. This level of DT&E testing supports our advanced and sustainment projects, which allow AWACS to participate in live-fly Exercises (e.g., Joint Expeditionary Force Experiment/JEFX; Empire Challenge/EC) and ground-based interoperability testing. These assets also support multiple international Airborne Early Warning and Control (AEW&C) projects on a fee basis, including projects for the French, RSAF, UK, Japan, and NATO AEW&C efforts.

TS-3, as one of the first AWACS production aircraft and its subsystems are qualified to Boeing (OEM) design specifications, unlike fleet aircraft, which are qualified to TCTO. In FY12, the Air Force will begin the conversion of an operational E-3 aircraft to a test configuration and will divest TS-3.

2. The Training, Support, and Infrastructure (TSI) programs cover required cross cutting programs and activities in support of AWACS modernization and enhancement efforts. These include managing the AWACS developmental infrastructure, support for equipment concurrency, modernization planning/analysis, and trainer/simulator integration and concurrency. The E-3 Radar Systems Integration Lab/Software Development Facility (SIL/SDF) is maintained, operated and supported by contract to provide customers with a functioning E-3 radar configuration in support of AWACS US, FMS and International radar development, production, and sustainment programs. New support equipment technologies and test strategies need to be analyzed to ensure concurrent capability to sustain existing, modified, and upgraded E-3 equipment. Trainer/simulator concurrency analysis and definition is required to ensure trainers and simulators are kept current with the AWACS baseline. Associate contractor agreements are used to integrate and concurrency planning and execution between the prime integrator and training service providers.

This program element funds the following Material Solutions Development & Analysis. These efforts look toward the future, investigating enhanced capabilities and exploring new mission areas (RDT&E, AF):

1. Command & Control, Intelligence, Surveillance and Reconnaissance(C2ISR) system improvements investigate and develop future capabilities of the AWACS weapon system, or next C2ISR platform. These efforts also include investigation, analysis and development to ensure that AWACS successfully integrates with Joint and Coalition forces in a net-centric environment. C2ISR primarily supports Pre-Systems Acquisition in the areas of Material Solution Analysis and Technology Development. This is accomplished by prototyping and demonstrating capabilities required by the warfighter but also includes working with ACC to develop an E-3 Modernization & Sustainment Roadmap that projects user capability needs, as well as material solutions for the user needs. Examples of supporting activities include, but are not limited to: Evaluating emerging operational needs, concepts, and technologies to enable integration of AWACS' capabilities to align with integrated C2ISR network architectures as defined in Joint Vision 2020, C2 Constellation CONOPS, and Air Force CONOPS.

Additionally: Improving sensors and identifying new sensor technologies and netted sensor architectures to meet evolving threats; communications including development of communication roadmaps and assessing related technologies e.g.: All forms of Internet Protocol (IP) communications, and multi-sensor integration such as the ability to send, receive, and fuse the air (and ground) picture via data link to fighter aircraft, through rapid prototyping, modeling, simulation, and participation in Joint exercises (e.g., Joint Expeditionary Forces Experiment (JEFX) and Empire Challenge (EC). Improving the timeliness and accuracy of information passed to/from fighter aircraft in the engagement zone by providing consistent and re-playable post-mission data to provide quicker reaction capabilities to support the

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207417F: *Airborne Warning and Control System (AWACS)*

air war. Exploring concepts, investigating emerging and developing technologies, and demonstrating efforts that support continuous improvements and self-protection for C2ISR capabilities of manned & unmanned platforms, space, data links, and advanced Battle Management decision tools.

2. Net-Centric Capability (NCC) provides Command and Control (C2) Applications access to Beyond-Line-of-Sight - Internet Protocol (BLOS-IP) SATCOM for the E-3 AWACS platform. BLOS-IP leverages the AWACS DRAGON acquisition of INMARSAT-BLOS IP for the flight deck, as well as Transitional Networking Capability (TNC) communications capabilities to specifically provide E-3 AWACS mission crew (back end) with enhanced capability to support a net-centric airborne battlespace, as well as, connect/interact with C2 battle managers (on the ground and in other airborne platforms). NCC modifications such as BLOS-IP enhance expedient off-board distribution of the AWACS air picture and other critical mission data, and give mission crews timely and accurate C2 data via access to enhanced battle-management tools including a robust chat capability and Airborne Web Services providing friendly forces tracking, Air Tasking Order (ATO) updates, and other netcentric C2 data while supporting simultaneous multi-level security domains. The program will begin risk reduction and technology development under the Material Solutions Development and Analysis. Major thrust in FY12, with a Milestone B projected in FY14.

Budget Justification: This program is in Budget Activity 7, Operational Systems Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	175.514	239.755	181.718	-	181.718
Current President's Budget	138.053	239.755	135.961	-	135.961
Total Adjustments	-37.461	-	-45.757	-	-45.757
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-30.780	-			
• SBIR/STTR Transfer	-5.947	-			
• Other Adjustments	-0.734	-	-45.757	-	-45.757

Change Summary Explanation

1. The increase in the Current PBR/President's Budget from FY 2010 to FY 2011 is due to previously scheduled TS-3 aircraft programmed depot maintenance cycle, NGIFF starting EMD for the Block 40/45 software configuration, and DRAGON's ramp up for the EMD effort.
2. The decrease between the Previous President's Budget and the Current President's Budget in FY12 is due to a re-phasing of the co-operative RDT&E effort to keep the USAF DRAGON activity/funding synchronized with the NATO modernization efforts.
3. The decrease in FY10 is due to higher Air Force priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207417F: *Airborne Warning and Control System (AWACS)*	PROJECT 67411L: *Airborne Warning & Control System (AWACS)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
67411L: *Airborne Warning & Control System (AWACS)*	138.053	239.755	135.961	-	135.961	150.120	149.540	152.028	100.436	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Mission: AWACS is the premier airborne platform providing command and control (C2)/battle management (BM) to Commander In Chief and combatant commander tasking for Joint, Allied, and Coalition operations, Humanitarian Relief, and Homeland Defense. AWACS provides a real-time picture of friendly, neutral, and hostile air activity. Its capabilities include all-altitude/all-weather surveillance of the battle space; early warning of enemy actions; a real-time ability to find, fix, track, and assess airborne or maritime threats; and detection, location, and identification of electronic emitters.

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2. The Next Generation Identification Friend or Foe (NGIFF) Program provides AWACS with enhanced IFF interrogator operation to add a more secure Mode 5 capability. NSA declared IFF Mode 4 unsecure and obsolete on 5 Nov 2003. Joint Requirements Oversight Council Memo 047-07 requires IFF Mode 5 interrogation capability by FY14. The new Mode 5 interrogation capability extends the effective range of the AWACS interrogator, while helping discriminate against closely spaced cooperative targets. NGIFF developed and integrated a basic Mode 5 capability on Block 30/35 starting in FY09 and full Mode 5 on Block 40/45 in FY10. Hardware will be common between the platforms. NGIFF will also integrate Mode S, a civilian air traffic control capability residing in the NGIFF hardware, as funding allows.

3. Diminishing Manufacturing Sources (DMS) Replacement of Avionics for Global Operations and Navigation (DRAGON) completes the FAA/International Civil Aviation Organization (ICAO)/ EUROCONTROL air traffic control mandated safety of flight capabilities. This program will provide the E-3 fleet with the flight instruments and other avionics for the Required Navigation Performance (RNP), and the surveillance and communication capabilities necessary to maintain continued critical unrestricted access to global airspace. Non-compliance will result in airspace restrictions and denials that will impact AWACS ability to support worldwide responses to situations requiring immediate on-scene command and control (C2) battle management. The DRAGON modifications replace the existing DMS GPS Integrated Navigation System (GINS) with a modern Flight Management System (FMS) that will accommodate new capabilities including Mode-5 IFF and Joint Mission Planning

System (JMPS). Also included as part of the modification is the addition of data link communications, voice and data link digital radios, and improved visual displays. Emphasis on employment of COTS avionics is expected to lower cost, reduce the tech refresh cycle, and enhance life cycle management. Replacement of critical avionics subsystems that will become unsustainable beginning in 2010 are included in the DRAGON program. The Engineering and Manufacturing Development (EMD) phase of DRAGON is planned to be executed cooperatively between US and NATO. The US and NATO are currently pursuing a cooperative risk reduction effort and working towards award of a cooperative EMD contract in FY11.

4. Support the War Fighter (STWF): STWF efforts support AWACS capability to create and sustain the force. Examples of these activities include, but are not limited to: Designing, developing, and modernizing equipment and systems to ensure AWACS can respond to urgent wartime/contingency acquisition requirements (e.g. Urgent Operational Needs (UONs) and Wartime Urgent & Compelling Needs (WUCNs). Upgrading key capabilities to meet contingency needs, modernizing test systems, integrating battle management and data link enhancements, and supporting Reliability, Maintainability, and Availability (RM&A) initiatives which:

a. Improve the Mission Capable (MC) rate through RM&A analysis and development projects to provide system improvements that help meet or exceed the required MC rate. These efforts focus on increasing reliability of the air vehicle, command and control systems, voice and data communications systems, computer, sensor systems and infrastructure improvements.
b. Solve diminishing manufacturing sources (DMS) logistics problems.
c. Insert new technologies with the aim of reducing maintenance man-hours along with programmed depot maintenance (PDM) improvements to increase aircraft availability.

5. The Data Link Enhancements (DLE) program provides the warfighter with improved Link 16 capabilities aimed at increasing the target location accuracy, situational awareness, and the reduced potential for fratricide and collateral damage. This program is essential to maintaining and improving Tactical Data Links (TDL) interoperability and compatibility.

6. The Flight Performance Software (FPS) program automates calculations currently performed manually by the pilot and flight engineer in accordance with E-3B and C flight manual. Phase I, automates the Takeoff and Landing (TOLD) calculations; Phase II automates the High Speed calculation. Automated calculations, using the original source data used to create the flight manual charts increases safety, improves on time departure/arrival, improves crew efficiency, and reduces tanker support.

This program element funds the following AWACS Infrastructure and Support Systems. These efforts synchronize modernization requirements and infrastructure support across the entire weapon system from depot and field test equipment, to maintenance trainers, to simulators, to integration labs, to the TS-3 Developmental Test and Evaluation Aircraft (RDT&E, AF):

1. Test System-3/AWACS Integration Test Support (AITS): The E-3 AWACS Developmental Test and Evaluation (DT&E) aircraft, Test System 3 (TS-3, tail number 73-1674) and the Avionics Integration Laboratory (AIL) are Government owned/contractor managed, maintained and operated system level DT&E assets. These test-ready assets support AWACS modernization, with already imbedded test points to support sub-system and system level developmental testing, per Boeing,'s TS-3 design specifications. This level of DT&E testing supports our advanced and sustainment projects, which allow AWACS to participate in live-fly Exercises (e.g., Joint

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207417F: *Airborne Warning and Control System (AWACS)*	PROJECT 67411L: *Airborne Warning & Control System (AWACS)*

Expeditionary Force Experiment/JEFX; Empire Challenge/EC) and ground-based interoperability testing. These assets also support multiple international Airborne Early Warning and Control (AEW&C) projects on a fee basis, including projects for the French, RSAF, UK, Japan, and NATO AEW&C efforts.

TS-3, as one of the first AWACS production aircraft and its subsystems are qualified to Boeing (OEM) design specifications, unlike fleet aircraft, which are qualified to TCTO. In FY12, the Air Force will begin the conversion of an operational E-3 aircraft to a test configuration and will divest TS-3.

2. The Training, Support, and Infrastructure (TSI) programs cover required cross cutting programs and activities in support of AWACS modernization and enhancement efforts. These include managing the AWACS developmental infrastructure, support for equipment concurrency, modernization planning/analysis, and trainer/simulator integration and concurrency. The E-3 Radar Systems Integration Lab/Software Development Facility (SIL/SDF) is maintained, operated and supported by contract to provide customers with a functioning E-3 radar configuration in support of AWACS US, FMS and International radar development, production, and sustainment programs. New support equipment technologies and test strategies need to be analyzed to ensure concurrent capability to sustain existing, modified, and upgraded E-3 equipment. Trainer/simulator concurrency analysis and definition is required to ensure trainers and simulators are kept current with the AWACS baseline. Associate contractor agreements are used to integrate and concurrency planning and execution between the prime integrator and training service providers.

This program element funds the following Material Solutions Development & Analysis. These efforts look toward the future, investigating enhanced capabilities and exploring new mission areas (RDT&E, AF):

1. Command & Control, Intelligence, Surveillance and Reconnaissance(C2ISR) system improvements investigate and develop future capabilities of the AWACS weapon system, or next C2ISR platform. These efforts also include investigation, analysis and development to ensure that AWACS successfully integrates with Joint and Coalition forces in a net-centric environment. C2ISR primarily supports Pre-Systems Acquisition in the areas of Material Solution Analysis and Technology Development. This is accomplished by prototyping and demonstrating capabilities required by the warfighter but also includes working with ACC to develop an E-3 Modernization & Sustainment Roadmap that projects user capability needs, as well as material solutions for the user needs. Examples of supporting activities include, but are not limited to: Evaluating emerging operational needs, concepts, and technologies to enable integration of AWACS' capabilities to align with integrated C2ISR network architectures as defined in Joint Vision 2020, C2 Constellation CONOPS, and Air Force CONOPS.

Additionally: Improving sensors and identifying new sensor technologies and netted sensor architectures to meet evolving threats; communications including development of communication roadmaps and assessing related technologies e.g.: All forms of Internet Protocol (IP) communications, and multi-sensor integration such as the ability to send, receive, and fuse the air (and ground) picture via data link to fighter aircraft, through rapid prototyping, modeling, simulation, and participation in Joint exercises (e.g., Joint Expeditionary Forces Experiment (JEFX) and Empire Challenge (EC). Improving the timeliness and accuracy of information passed to/from fighter aircraft in the engagement zone by providing consistent and re-playable post-mission data to provide quicker reaction capabilities to support the air war. Exploring concepts, investigating emerging and developing technologies, and demonstrating efforts that support continuous improvements and self-protection for C2ISR capabilities of manned & unmanned platforms, space, data links, and advanced Battle Management decision tools.

2. Net-Centric Capability (NCC) provides Command and Control (C2) Applications access to Beyond-Line-of-Sight - Internet Protocol (BLOS-IP) SATCOM for the E-3 AWACS platform. BLOS-IP leverages the AWACS DRAGON acquisition of INMARSAT-BLOS IP for the flight deck, as well as Transitional Networking Capability

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207417F: *Airborne Warning and Control System (AWACS)*	PROJECT 67411L: *Airborne Warning & Control System (AWACS)*

(TNC) communications capabilities to specifically provide E-3 AWACS mission crew (back end) with enhanced capability to support a net-centric airborne battlespace, as well as, connect/interact with C2 battle managers (on the ground and in other airborne platforms). NCC modifications such as BLOS-IP enhance expedient off-board distribution of the AWACS air picture and other critical mission data, and give mission crews timely and accurate C2 data via access to enhanced battle-management tools including a robust chat capability and Airborne Web Services providing friendly forces tracking, Air Tasking Order (ATO) updates, and other netcentric C2 data while supporting simultaneous multi-level security domains. The program will begin risk reduction and technology development under the Material Solutions Development and Analysis. Major thrust in FY12, with a Milestone B projected in FY14.

Budget Justification: This program is in Budget Activity 7, Operational Systems Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Material Solutions Development and Analysis	20.228	12.664	6.565	-	6.565
Description: Focuses on emerging requirements by investigating enhanced capabilities and exploring new mission areas. ***FY 2010 Accomplishments:*** Completed intial development of Flight Performance Software Phase I. Proposed Radar Modernization Program (RMP) upgrades being reviewed by major contractors. Conducted flight test to assess potential sensor vulnerabilities to Electronic Attack. Executed Joint Expeditionary Force Exercise (JEFX) 2010 & Coalition Warfare Interoperability Demonstration (CWID) 2010. Updated the Experiment Long Range Plan. ***FY 2011 Plans:*** Transitioning to Flight Performance Software Phase II. Conducting engineering/integration study to determine required modifications and associated costs to upgrade the radar system with more robust signal processing prior to mission computing, and incorporating classified Electronic Protection measures. Planning and executing International Cooperative Research & Development (ICR&D). ***FY 2012 Base Plans:*** Will continue to execute International Cooperative Research & Development (ICR&D). Will conduct engineering / integration studies to determine required modifications and associated costs to upgrade and support Risk Reduction activities for program planning. Will continue NCC risk reduction efforts for BLOS IP SATCOM development that was begun as part of the DRAGON modification effort. ***FY 2012 OCO Plans:*** Not Applicable.					
Title: AWACS Modernization	85.486	173.568	103.356	-	103.356

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207417F: *Airborne Warning and Control System (AWACS)*	PROJECT 67411L: *Airborne Warning & Control System (AWACS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Focuses on development activities associated with modification efforts. ***FY 2010 Accomplishments:*** Block 40/45: Continued Pre-Prod and ground infrastructure activities prior to first aircraft modification. Continued development of training plans for air crew/maintenance personnel for the mission system. Continued development of Data Link Infrastructure (DLI) enhancements for seamless transition from Block 30/35. Addressed DMS issues for future buys. Completed modification job plans and final drawings, reliability improvements, and Airworthiness Testing. NGIFF: Block 30/35 software development, prepared for flight test and DT/OT, Began Block 40/45 development. DRAGON: On-going risk reduction efforts. Addressed DMS issues and global airspace accessibility. Released EMD Request for Proposal and executed International Project Agreement with NATO. STWF: Prototype and test E-3 with Situation Awareness Data Link (SADL). Closed Link 16 ICP gap between platforms. Studied Single Channel Ground and Airborne Radio System (SINCGARS) capable radio. ***FY 2011 Plans:*** Block 40/45: Beginning Mission Crew Trainer Set (MCTS), Avionics Integration Software Facility (AISF) and Mission Computing Maintenance Trainer (MCMT) development efforts. Finishing Pre-Prod activities to synchronize with first aircraft install. Completing ground infrastructure and training plans. Continuing development of DLI improvements for seamless transition from Block 30/35. Continuing to administer DMS and COTS hardware tech refresh for future aircraft buys. NGIFF: Conducting Block 30/35 flight test and DT/OT. Reviewing requirements, interfaces, and manufacturing plans for UPX-40. Conducting Block 40/45 software functionality and system verification on Mission Computing. Completing Installation and Checkout of hardware equipment. Beginning software system integration. Demonstrating software and hardware interfaces in Lab. DRAGON: Continuing Risk Reduction efforts with the assessment of the DRAGON design on all system-level legacy requirements and mitigating Explosive Atmosphere (EA) risks. Awarding EMD contract. Beginning development activities for System Requirements Review and Integrated Baseline Review.					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207417F: *Airborne Warning and Control System (AWACS)*	PROJECT 67411L: *Airborne Warning & Control System (AWACS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
STWF: Continuing closing Link 16 gap between Block 30/35 and Block 40/45. Investigating impacts of crypto modification projects on the E-3. Continuing to address emerging issues. ***FY 2012 Base Plans:*** Block 40/45: Will continue development of MCTS, AISF, and MCMT. NGIFF: Will review requirements, interfaces, and manufacturing plans. Will certify software functionality and complete system verification on Mission Computing. Will complete Installation and Checkout of hardware equipment. Will begin software system integration. Will demonstrate software and hardware interfaces in Lab. DRAGON: Will complete System Requirements Review and Integrated Baseline Review. Will complete government review of major subcontractor's Preliminary Design Reviews (PDR) and the Prime Contractor's own PDR. Will complete a PDR Assessment review with the Milestone Decision Authority. STWF: Will continue closing Link 16 gap between Block 30/35 and Block 40/45. Will investigate impacts of crypto modification projects on the E-3. Continue working emerging issues. DLE: Will begin IFF Mode 5 data exchange and software testing for functionality and system verification on Mission Computing. Will deliver delta change package to 552 ACW/ACG to install and perform operational testing on software. FPS: Will begin Phase II automation of High Speed Takeoff and Landing (TOLD) calculations. ***FY 2012 OCO Plans:*** Not Applicable.					
Title: AWACS Infrastructure and Systems Support ***Description:*** Focuses on system engineering to synchronize all modernization requirements and infrastructure support across the entire weapon system--from depot and field test equipment, to maintenance trainers, to simulators, to integration labs, to test aircraft development and support. ***FY 2010 Accomplishments:*** Supported AWACS modernization and sustainmented programs, including advanced C2ISR projects. Participated in live-fly events (JEFX) and ground-based kill chain simulation exercises (Joint Distributed	32.339	53.523	26.040	-	26.040

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207417F: *Airborne Warning and Control System (AWACS)*	PROJECT 67411L: *Airborne Warning & Control System (AWACS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Engineering Plan (JDEP)). Continued to mature emerging technologies, net-centric operations and next generation C2/BM activities. Provided system lab support to Block 40/45, Next Generation IFF, NCC, and Japan and Saudi radar improvement integration and test. Supported AEW&C OSD mandated interoperability testing. Supported mandatory E-3 Operational, Safety, Suitability and Effectiveness program; Single Manager's modification responsibilities; and the AWACS System Engineering program. Provided E-3 Training Concurrency engineering which included maintaining the Associate Contractor Agreements between the prime integrator and the individual trainer vendors. Provided the radar system labs to support U.S., International and FMS radar improvement programs and radar sustainment efforts--major activities include Japan and RSAF radar improvement programs. Maintained TS-3 test asset. ***FY 2011 Plans:*** Supporting DRAGON lab integration efforts. Continuing to mature emerging technologies, net-centric operations and next generation C2/BM activities. Providing system lab support to Block 40/45, Next Generation IFF, NCC, and Japan and RSAF radar improvement integration and test. Supporting AEW&C OSD mandated interoperability testing. Supporting mandatory E-3 Operational, Safety, Suitability and Effectiveness program; Single Manager's modification responsibilities; and the AWACS System Engineering program by providing E-3 Training Concurrency engineering which includes maintaining the Associate Contractor Agreements between the prime integrator and the individual trainer vendors. Providing the radar system labs to support U.S., International and FMS radar improvement programs and radar sustainment efforts--major activities include Japan and RSAF Radar improvement programs. Maintaining/divesting TS-3 test asset. ***FY 2012 Base Plans:*** Will support DRAGON lab integration efforts. Will continue to mature emerging technologies, net-centric operations and next generation C2/BM activities. Will provide system lab support to Block 40/45, Next Generation IFF, NCC, and Japan and RSAF radar improvement integration and test. Will support AEW&C OSD mandated interoperability testing. Will support mandatory E-3 Operational, Safety, Suitability and Effectiveness program; Single Manager's modification responsibilities; and the AWACS System Engineering program by providing E-3 Training Concurrency engineering which includes maintaining the Associate Contractor Agreements between the prime integrator and the individual trainer vendors. Will provide the radar system labs to support U.S., International and FMS radar improvement programs and radar sustainment efforts--major activities include Japan and RSAF Radar improvement programs. Will begin conversion of operational aircraft to test configuration. ***FY 2012 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207417F: *Airborne Warning and Control System (AWACS)*	**PROJECT** 67411L: *Airborne Warning & Control System (AWACS)*

B. Accomplishments/Planned Programs ($ in Millions)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Not Applicable.					
Accomplishments/Planned Programs Subtotals	138.053	239.755	135.961	-	135.961

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207417F: *E-3 Mods, APAF*	76.488	192.681	135.031	0.000	135.031	186.631	212.944	180.999	272.511	Continuing	Continuing
• PE 0809731F: *Training Support (E-3 Aircraft), APAF*	2.448	2.482	0.000	0.000	0.000	0.000	2.609	2.661	2.708	Continuing	Continuing
• PE 0207417F (2): *E-3 Initial Spares, APAF*	5.500	18.248	17.136	0.000	17.136	18.343	18.744	19.201	19.661	Continuing	Continuing

D. Acquisition Strategy

Most major programs (Block 40/45, DRAGON, TS-3 and lab support) will be sole source to the Boeing Corporation, Seattle, WA.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207417F: *Airborne Warning and Control System (AWACS)*	PROJECT 67411L: *Airborne Warning & Control System (AWACS)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
(U) AWACS Modernization - Block 40/45 EMD and Pre-Production	SS/CPAF	Boeing:Seattle, WA	1,023.712	94.851	Jan 2011	17.112	Jan 2012	-		17.112	Continuing	Continuing	TBD
(U) AWACS Modernization - Next Generation Identification Friend or Foe (IFF)	SS/CPIF	Boeing:Seattle, WA	34.776	34.269	Feb 2011	23.083	Feb 2012	-		23.083	Continuing	Continuing	TBD
(U) AWACS Modernization - DRAGON	SS/TBD	Boeing:Seattle, WA	9.335	23.279	Aug 2011	44.744	Jan 2012	-		44.744	Continuing	Continuing	TBD
(U) AWACS Modernization - Support the War Fighter (STWF)	Various	Various:Various, NA	9.018	8.686	Jan 2011	4.351	Jan 2012	-		4.351	Continuing	Continuing	TBD
(U) Material Solutions Development and Analysis - C2ISR System Improvement	SS/Various	Boeing:Seattle, WA	109.906	8.620	Oct 2010	5.366	Oct 2011	-		5.366	Continuing	Continuing	TBD
(U) Prior Platform Modifications	Various	Various:Various, NA	1,603.751	-		-		-		-	0.000	1,603.751	0.000
		Subtotal	2,790.498	169.705		94.656		-		94.656			

Remarks

Note: Total Program does not include NATO funds.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
(U) Support/ITSPMITRE, travel, other	Various	AWACS Program Office:Hanscom AFB, MA	377.486	21.708	Oct 2010	20.548	Oct 2011	-		20.548	Continuing	Continuing	TBD
		Subtotal	377.486	21.708		20.548		-		20.548			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207417F: *Airborne Warning and Control System (AWACS)*	PROJECT 67411L: *Airborne Warning & Control System (AWACS)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
(U) AWACS Infrastructure and Systems Support - AWACS Test System & Aircraft Conversion / AWACS Integration Test Support (AITS) Contract / Other test activities	SS/Various	Boeing:Seattle, WA	206.287	43.512	Oct 2010	13.932	Oct 2011	-		13.932	Continuing	Continuing	TBD
(U) AWACS Infrastructure and Systems Support - Training, Support & Infrastructure (TSI)	SS/Various	Boeing:Seattle, WA	26.135	4.830	Jan 2011	6.825	Jan 2012	-		6.825	Continuing	Continuing	TBD
		Subtotal	232.422	48.342		20.757		-		20.757			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3,400.406	239.755		135.961		-		135.961			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207417F: *Airborne Warning and Control System (AWACS)*	PROJECT 67411L: *Airborne Warning & Control System (AWACS)*

AWACS Schedule

U.S. AIR FORCE

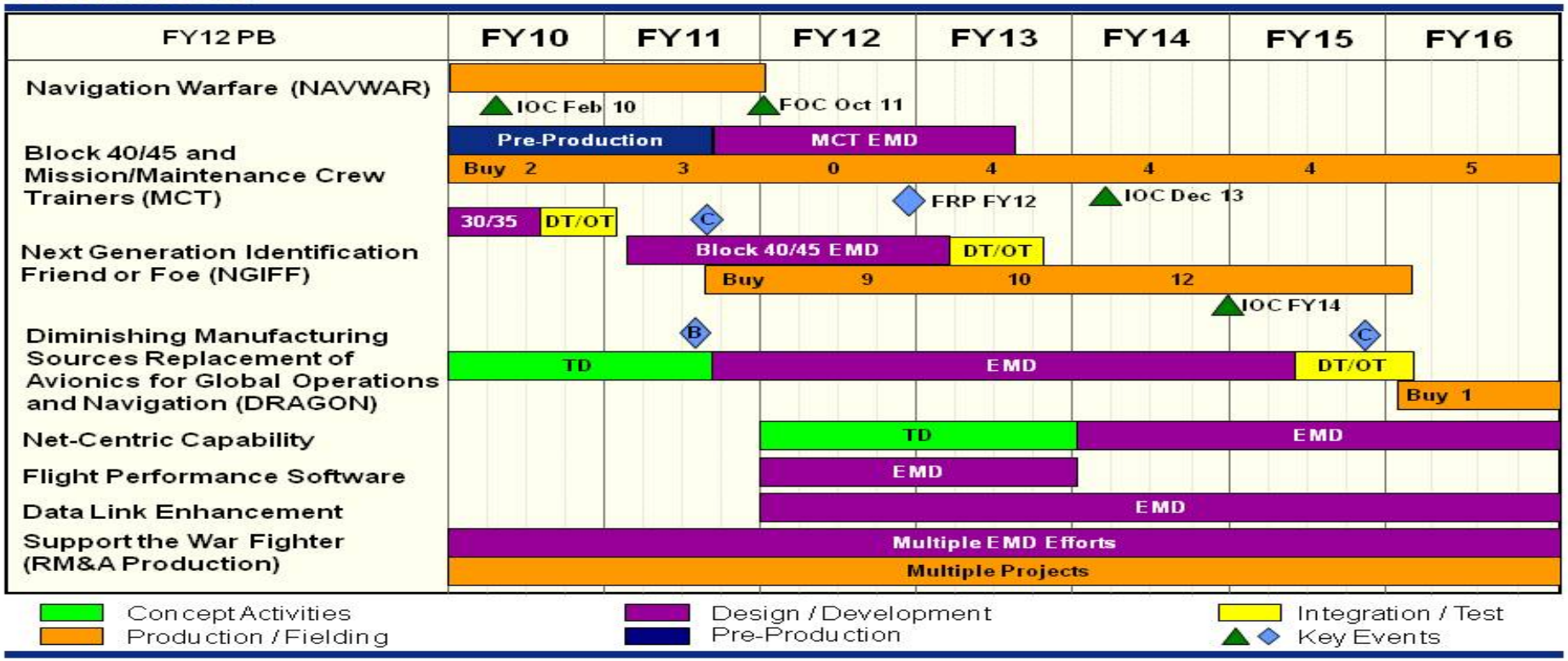

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207417F: *Airborne Warning and Control System (AWACS)*	**PROJECT** 67411L: *Airborne Warning & Control System (AWACS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
NAVWAR IOC	2	2010	2	2010
NAVWAR FOC	1	2012	1	2012
40/45 Mission/Maintenance Crew Trainers EMD	3	2011	3	2013
40/45 FRP Decision	4	2012	4	2012
40/45 Milestone C	1	2014	1	2014
NGIFF EMD (Software developed on 30/35)	1	2010	1	2011
NGIFF EMD (Hardware development on 40/45)	1	2011	4	2013
NGIFF Milestone C	3	2011	3	2011
DRAGON Technology Development	1	2010	3	2011
DRAGON Milestone B	3	2011	3	2011
DRAGON EMD	3	2011	1	2016
DRAGON Milestone C	4	2015	4	2015
Net Centric Capability Technology Development	1	2012	4	2013
Net Centric Capability EMD	1	2014	4	2016
Flight Performance Software EMD	1	2012	4	2013
Data Link Enhancement EMD	1	2012	4	2016
Support the War Fighter (STWF) EMD	1	2010	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*						R-1 ITEM NOMENCLATURE PE 0207418F: *TAC AIRBORNE CONTROL SYSTEM*					
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	8.309	-	8.309	5.786	4.467	3.362	3.612	Continuing	Continuing
675234: *TACP Support*	-	-	8.309	-	8.309	5.786	4.467	3.362	3.612	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Joint Terminal Control Training and Rehearsal System (JTC TRS) project, under the Tactical Airborne Control System, funds development necessary to provide a Distributed Mission Operations (DMO) capable, high-fidelity simulator for the Joint Terminal Attack Controller (JTAC), Combat Control Team (CCT) and Air Support Operations Center (ASOC). JTC TRS provides incremental development to network aircrew full mission trainers and mission training centers in Increment 1. Increment 2 integrates the ASOCs and Special Operations Forces (SOF) Command and Control (C2) Simulation System (ASC2S2) trainer for Joint Fires. ASC2S2 is a continuation of the Joint Theater Air Ground Simulation System initially funded in 2009. It complements the JTC TRS trainer by providing persistent simulated C2 echelons supporting a total air-ground virtual environment for networked air- ground training and mission rehearsal capability that will develop both JTAC/CCT skills and ASOC/SOF C2 battlestaff skills. The JTC TRS Project provides research and development to facilitate interoperability with joint/sister Service air ground simulation using industry standards. ASC2S2 will provide the ASOC, SOF, and TACP with the vertical and horizontal C2 communications and coordination required for training and mission rehearsal. It will be designed to meet the needs and training requirements for personnel conducting Joint Theater Air Ground C2. The Enhanced operational training in support of conventional and special operations forces during irregular and traditional warfare will result in better efficiency and effectiveness in real-world contigencies. The system will be designed to incorporate live, virtual, and constructive training environments using the DMO and Joint National Training Capability network to connect to other Theater Air Ground System C2 elements or simulate those elements using intelligent agent technology. ASC2S2 will have full tactical datalink capability to replicate real-world digital communications. The system will be composed of a secure network connection, a constructive simulation environment generator with sharable databases, computer work stations (using assigned C2 mission systems/applications) for every ASOC/SOF crew position, and an instructor/operator station.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	-	8.337	-	8.337
Current President's Budget	-	-	8.309	-	8.309
Total Adjustments	-	-	-0.028	-	-0.028
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.028	-	-0.028

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207418F: *TAC AIRBORNE CONTROL SYSTEM*	PROJECT 675234: *TACP Support*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675234: *TACP Support*	-	-	8.309	-	8.309	5.786	4.467	3.362	3.612	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Joint Terminal Control Training and Rehearsal System (JTC TRS) project, under the Tactical Airborne Control System, funds development necessary to provide a Distributed Mission Operations (DMO) capable, high-fidelity simulator for the Joint Terminal Attack Controller (JTAC), Combat Control Team (CCT) and Air Support Operations Center (ASOC). JTC TRS provides incremental development to network aircrew full mission trainers and mission training centers in Increment 1. Increment 2 integrates the ASOCs and Special Operations Forces (SOF) Command and Control (C2) Simulation System (ASC2S2) trainer for Joint Fires. ASC2S2 is a continuation of the Joint Theater Air Ground Simulation System initially funded in 2009. It complements the JTC TRS trainer by providing persistent simulated C2 echelons supporting a total air-ground virtual environment for networked air- ground training and mission rehearsal capability that will develop both JTAC/CCT skills and ASOC/SOF C2 battlestaff skills. The JTC TRS Project provides research and development to facilitate interoperability with joint/sister Service air ground simulation using industry standards. ASC2S2 will provide the ASOC, SOF, and TACP with the vertical and horizontal C2 communications and coordination required for training and mission rehearsal. It will be designed to meet the needs and training requirements for personnel conducting Joint Theater Air Ground C2. The Enhanced operational training in support of conventional and special operations forces during irregular and traditional warfare will result in better efficiency and effectiveness in real-world contigencies. The system will be designed to incorporate live, virtual, and constructive training environments using the DMO and Joint National Training Capability network to connect to other Theater Air Ground System C2 elements or simulate those elements using intelligent agent technology. ASC2S2 will have full tactical datalink capability to replicate real-world digital communications. The system will be composed of a secure network connection, a constructive simulation environment generator with sharable databases, computer work stations (using assigned C2 mission systems/applications) for every ASOC/SOF crew position, and an instructor/operator station.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: JTAC/CCT Trainer Development	-	-	0.876	-	0.876
Description: Continue development of high-fidelity simulation system for JTAC/CCT Training					
FY 2010 Accomplishments:					
FY 2011 Plans:					
FY 2012 Base Plans: Begin development of portable configuration for the JTAC Trainer.					
FY 2012 OCO Plans:					
Title: ASC2S2 Trainer Development	-	-	6.933	-	6.933

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207418F: *TAC AIRBORNE CONTROL SYSTEM*	PROJECT 675234: *TACP Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Develops high fidelity simulation system for ASOC/SOF Command and Control System that supports JTAC training. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** Begin development of ASC2S2 simulator configuration. ***FY 2012 OCO Plans:***					
Title: Program Office Support ***Description:*** Program Office Support ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** Continue Program Office Support ***FY 2012 OCO Plans:***	-	-	0.500	-	0.500
Accomplishments/Planned Programs Subtotals	-	-	8.309	-	8.309

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207418F: *TAC Airborne Control System, Fixed Configuration, Other Procurement , AF*	7.810	24.916	15.778	0.000	15.778	7.674	5.116	5.116	5.116	Continuing	Continuing
• PE 0207418F (1): *TAC Airborne Control System, JTAC Portable Configuration, Other Procurement, AF*	0.000	0.000	0.822	0.000	0.822	2.144	0.822	2.053	2.013	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207418F: *TAC AIRBORNE CONTROL SYSTEM*	PROJECT 675234: *TACP Support*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207418F (2): *TAC Airborne Control System ASC2S2, Other Procurement, AF*	0.000	0.000	0.540	0.000	0.540	0.550	1.121	1.138	1.122	Continuing	Continuing

D. Acquisition Strategy

The acquisition strategy for production of the fixed configuration of the JTC TRS will be based on full and open competition with an evolutionary acquisition approach using incremental development. The portable version of the JTAC trainer is planned to be an option on the production contract for JTC TRS. The acquisition strategy for the ASC2S2 trainer has not been determined.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207418F: *TAC AIRBORNE CONTROL SYSTEM*	PROJECT 675234: *TACP Support*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ASC/WNS, AFMC, Fixed and Portable Develoment	C/CPIF	ASC/WNS, AFMC:Wright Patterson AFB, OH	3.366	-		0.876	Nov 2012	-		0.876	Continuing	Continuing	TBD
ASC/WNS, AFMC, ASC2S2 Development	C/CPIF	ASC/WNS, AFMC:Wright Patterson AFB, OH	-	-		6.933	May 2013	-		6.933	Continuing	Continuing	TBD
		Subtotal	3.366	-		7.809		-		7.809			

Remarks

Funding prior to FY10 supported Fixed/In-Garrison configuration.
Funding in FY12 supports portable configuration.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
605 TES ACC	MIPR	605 TES/TXT ACC:Eglin AFB FL, FL	0.467	-		-		-		-	0.000	0.467	TBD
		Subtotal	0.467	-		-		-		-	0.000	0.467	

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207418F: *TAC AIRBORNE CONTROL SYSTEM*	PROJECT 675234: *TACP Support*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office Support	Various	ASC/WNS, AFMC:Wright Patterson AFB, OH	2.424	-		0.500		-		0.500	Continuing	Continuing	TBD
		Subtotal	2.424	-		0.500		-		0.500			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	6.257	-		8.309		-		8.309			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207418F: *TAC AIRBORNE CONTROL SYSTEM*	PROJECT 675234: *TACP Support*

JTC TRS Schedule

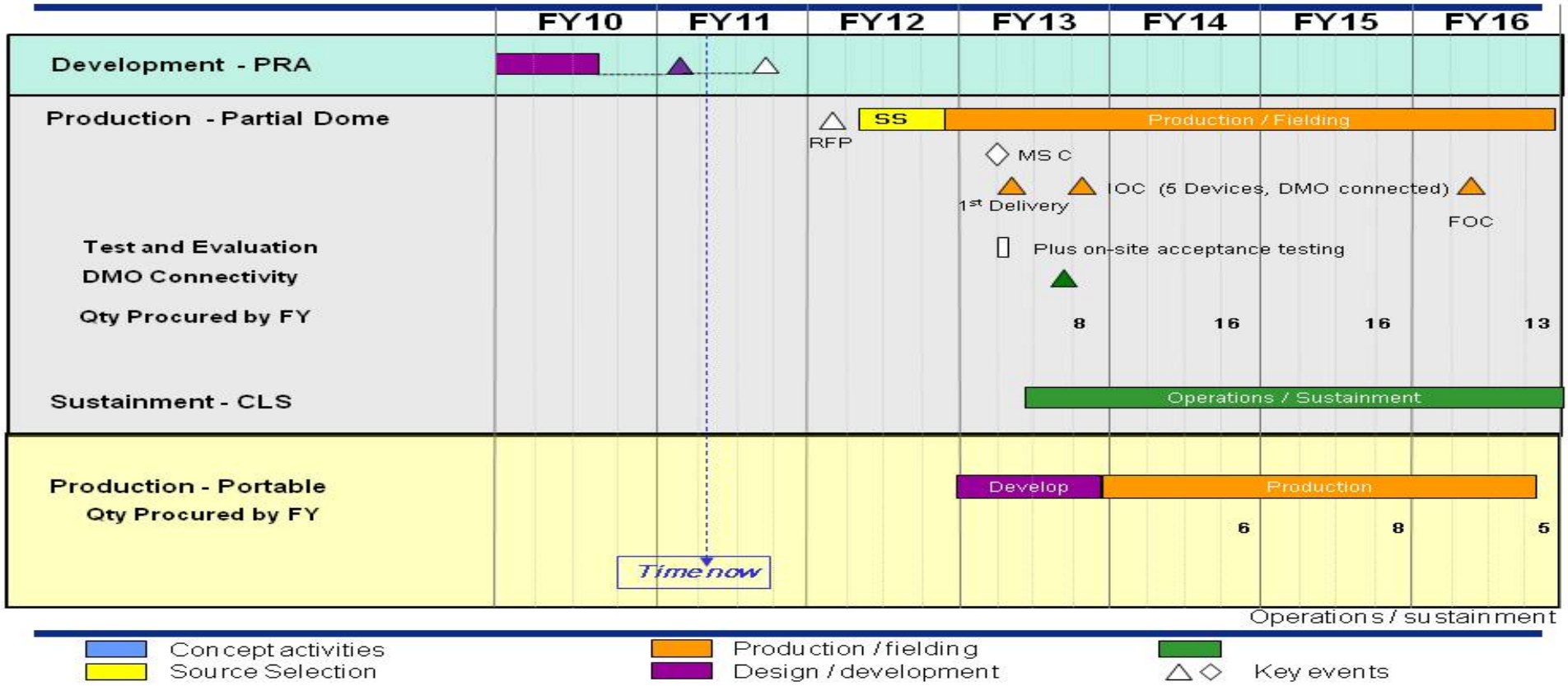

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207418F: *TAC AIRBORNE CONTROL SYSTEM*	PROJECT 675234: *TACP Support*

ASC2S2 Schedule

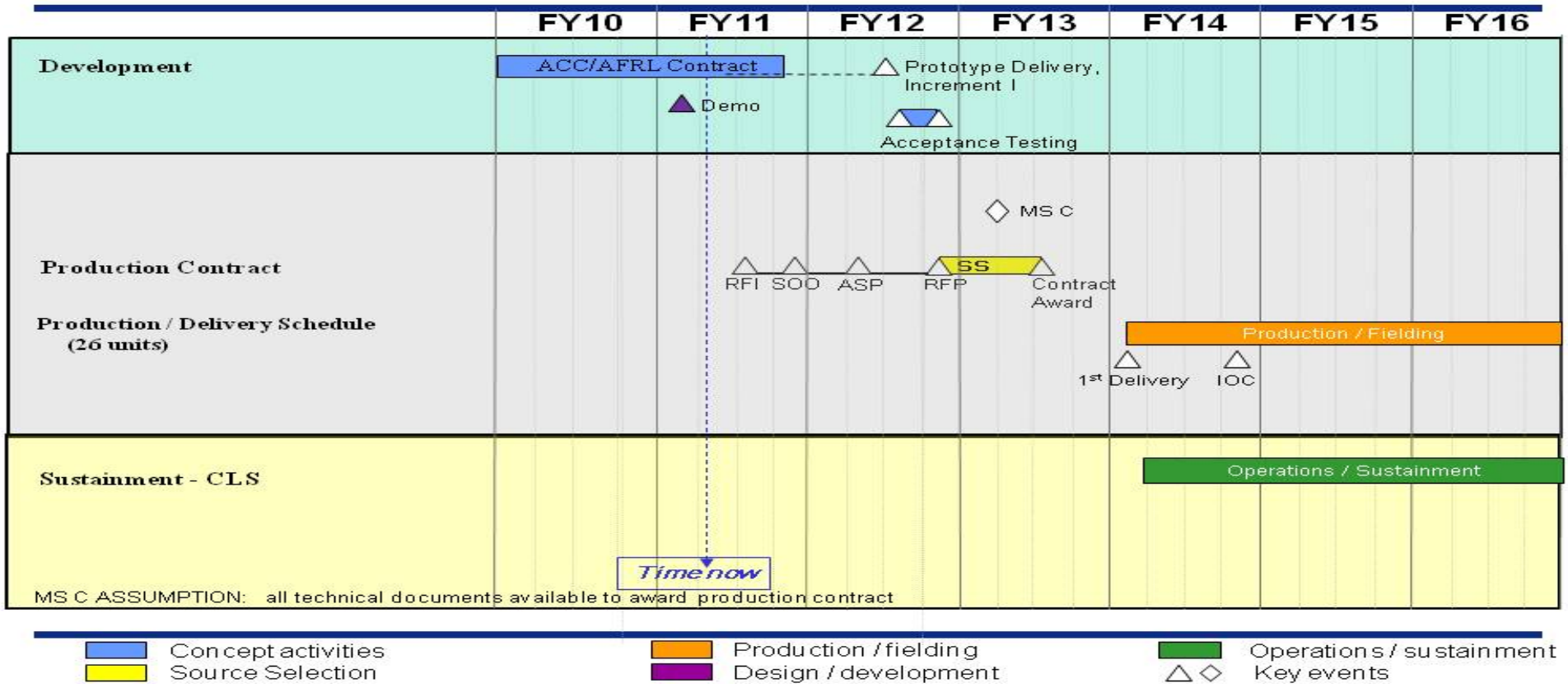

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207418F: *TAC AIRBORNE CONTROL SYSTEM*	**PROJECT** 675234: *TACP Support*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JTC TRS In-garrison/Fixed Development	1	2010	3	2011
JTC In-garrison/Fixed I/OT& E	3	2011	3	2011
JTC TRS In-garrison/Fixed Development Delivery	3	2011	3	2011
JTC TRS In-garrison/Fixed Production Contract Award	4	2012	4	2012
JTC TRS In-garrison/Fixed Production Installs Begin	2	2013	2	2013
JTC TRS In-garrison/Fixed Production IOC	4	2013	4	2013
JTC TRS Portable configuration Development	1	2013	4	2013
JTC TRS Portable configuration Production Installs Begin	4	2013	4	2016
ASC2S2 Development	1	2010	4	2011
ASC2S2 Acceptance Test	3	2012	4	2012
ASC2S2 Production Contract Award	3	2013	3	2013
ASC2S2 First Prduction Delivery	1	2014	1	2014
ASC2S2 IOC	4	2014	4	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207423F: *Advanced Communications Systems*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	61.430	67.532	90.083	-	90.083	194.387	249.469	494.156	610.430	Continuing	Continuing
674934: *Tactical Air Control Party (TACP)*	16.558	17.298	-	-	-	-	-	-	-	Continuing	Continuing
675189: *C2ISR JTRS Integration*	44.872	50.234	90.083	-	90.083	194.387	249.469	494.156	610.430	Continuing	Continuing

Note

In FY2012, Project 674934, Tactical Air Control Party,efforts transferred to PE 0207444F, Tactical Air Control Party, Project 676013, Equipment Modernization, in order to better identify and delineate efforts for Tactical Air Control Party Modernization.

A. Mission Description and Budget Item Justification

The TACP-Modernization (TACP-M) program is acquiring new equipment to give TACPs the capability to detect targets and compute precise target coordinates for employment of GPS aided weapons, reduce the potential for fratricide, and reduce the potential for collateral damage in civilian-occupied areas. This new equipment shortens the kill chain by reducing the time required to submit air support requests, provide target information to aircraft, and ensure pilots are tracking the correct target. By reducing the time required to execute close air support missions in "troops-in-contact" situations, the TACP-M program helps reduce the number of U.S. and coalition casualties due to enemy action. TACPs deploy with Army maneuver units and provide a Command and Control (C2) link for Close Air Support (CAS), airlift and AF surveillance/reconnaissance missions. TACPs are equipped with various targeting and communications equipment needed to interface with ground maneuver forces, aircraft conducting CAS operations, other Joint Fires assets, aerospace C2 aircraft/agencies, and Intelligence, Surveillance and Reconnaissance (ISR) platforms/agencies. The TACP-M program provides TACP, Air Support Operations Centers (ASOCs), and Tactical Operations Center (TOCs) personnel with the capability to precisely locate and target enemy ground forces by integrating various Laser Targeting Devices (LTD) and ultra high frequency satellite communications (UHF SATCOM) for beyond-line-of-sight (BLOS) Air Force Air Request Net operations. The purpose of the TACP-M program is to reduce reliance on voice transmission and replace analog equipment with the latest digital, data link and streaming video (e.g. Streaming Video Receiver) technology. Upgraded digital communications enable machine-to- machine interface between TACPs and Close Air Support (CAS) aircraft, Army units and other TACP units. Machine-to-machine communication provides reliable, high speed digital communications, ultimately supports joint and multinational interoperability, improves battlefield Situational Awareness (SA), increases targeting accuracy, reduces kill chain decision time, improves data flows/information exchange, and reduces potential fratricide. The TACP-M program supports the Overseas Contingency Operations (OCO) and significantly increased the mission effectiveness of the TACPs and ASOCs during Operation Enduring Freedom and Operation New Dawn. The TACP-M program continues to be instrumental in providing ground communications for TACPs during federal emergency relief operations and Homeland Defense initiatives.

TACP-M is divided into three segments: Dismounted, Mounted, and Software. The TACP provides modernized, modular, re-locatable and man portable capabilities via streamlined acquisition using non-developmental, off-the-shelf (OTS) Manpack Radios (MPR) or Handheld Radios (HHR), laser targeting devices (LTDs) (including Laser Range Finder (LRFs), Joint Effects Targeting System (JETS) laser designators and imagers), tactical computers, and ancillary equipment combined with Close Air Support System (CASS) software for dismounted, ASOC, and TOC use. TACP mounted segment upgrades existing TACP communications systems with new Software Communication Architecture (SCA)-CERTIFIED, Joint Tactical Radio System (JTRS) or available software programmable radios, legacy radios, and ancillary

components, which provide reliable communications for CAS and other air support operations. TACP-M will integrate Internet Protocol (IP)-capable, SCA radios for voice & data UHF SATCOM and LOS UHF /VHF communications. TACP-M funds will continue to develop systems integration software (for dismounted and mounted) for multiple air/ground platforms (e.g. JETS (TECS software development), Small Diameter Bomb II (SDBII), F-35, Mine Resistant Ambush Protected (MRAP) vehicle, Gateway Lite, and ASOC Gateway vehicle) and will provide interoperability datalinks such as Situational Awareness Data Link (SADL), Link-16 and other transformational communications capabilities.

Mounted overseas contingency operations also require new digital communications/network enabled capabilities integrated in armored vehicle platforms including High Mobility, Multi-Wheeled Vehicles (HMMWV), Stryker, Mine Resistant Ambush Protected (MRAP) and other vehicle platforms used in times of conflict. The Air Force has requested acceleration of a vehicular communications capability into TACP Stryker Light Armored Vehicle (LAV) and other tactical vehicles.

Joint Tactical Radio System (JTRS) is the Department of Defense (DoD) family of interoperable, modular, software-defined radios that will form the foundation of radio frequency information transmission for Joint Vision 2020. Joint Tactical Radio Systems (JTRS) will link the power of the Global Information Grid (GIG) to the warfighter in applying fire effects and achieving overall battlefield superiority. By developing and implementing an open architecture of cutting-edge radio waveform technology, multiple radio types (e.g., handheld, ground-mobile, airborne, maritime, etc.) are now capable of communicating with one another. JTRS radios are intended to interoperate with existing radio systems and improve Joint warfighting through a series of new, joint networking waveforms enabling communication via voice, data, and video over mobile, ad-hoc, internet protocol (IP) based networks. Each radio will operate as a node in the network to ensure secure wireless communication and networking services for airborne, mobile and fixed forces. These goals extend to U.S. allies, joint and coalition partners, and, in time, disaster response personnel. JTRS will make the Air Force more effective in Joint warfighting through a series of new, joint networking waveforms. These waveforms included the Mobile User Objective System (MUOS), which provides next generation SATCOM beyond-line-of-sight (BLOS)communications, as well as the Wideband Networking Waveform (WNW) and the Soldier Radio Waveform(SRW) which provide interoperability with Army ground forces from the bridade level down to the dismounted soldier. Together these waveforms enable Joint Close Air Support (JCAS), Combat Search and Rescue (CSAR) and other Joint missions. The JTRS program is built around an open Software Communications Architecture (SCA), allowing common software waveform applications to be implemented across the family of radios to provide joint-service, allied, and coalition interoperability. The Enterprise Business Model, incorporating a common set of shared open system standards, promotes competition and reduces procurement costs for the DoD.

Air Force JTRS will support the development of a common integration solution and acquisition plan across multiple AF platforms as well as unique integration solutions to meet platform specific requirements. Non-recurring engineering investment in JTRS integration hardware, software, and risk reduction efforts is required to successfully integrate these digital radios on Air Force platforms, display information received and transmitted over these radios for operator use, and integrate JTRS information with information from other aircraft systems. This hardware and software includes racks, cabling, digital processors and data displays necessary to integrate JTRS radio sets, onto multiple Air Force platforms. Development activities support the close coordination with the JTRS JPEO, industry, and the platform program offices to ensure successful and efficient integration of JTRS radios onto a wide variety of unique AF platforms.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207423F: *Advanced Communications Systems*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	73.009	67.532	112.409	-	112.409
Current President's Budget	61.430	67.532	90.083	-	90.083
Total Adjustments	-11.579	-	-22.326	-	-22.326
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-0.266	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-9.375	-			
• SBIR/STTR Transfer	-1.938	-			
• Other Adjustments	-	-	-22.326	-	-22.326

Change Summary Explanation

Reprogramming action moved $9.375M of OCO funding for ROVER that was inadvertently added to this PE to its proper location, PE 0207277F.

Funding increases over the FY11 level beginning in FY12 support the development of JTRS radio integration solutions. Challenges indentified in integrating the Airborne and Maritime/Fixed Station(AMF)Small Airborne (SA) radio onto 22 unique AF platforms (approximately 2400 aircraft) prompted an increase to the non-recurring engineering (NRE) required. This funding supports the development and risk reduction of a common integration solution to support multiple platforms as well as the hardware/software development and testing required by each unique platform. The funding ramp supports an increased numbers of platforms that will begin integration outside the FYDP.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207423F: *Advanced Communications Systems*	PROJECT 674934: *Tactical Air Control Party (TACP)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674934: *Tactical Air Control Party (TACP)*	16.558	17.298	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2012, PE 0207423F, Advanced Communications Systems, Project 674934, Tactical Air Control Party (TACP), efforts were transferred to PE 0207444F, Project 676013, Equipment Modernization, in order to better identify and deliniate efforts for Tactical Air Control Party Modernization.

A. Mission Description and Budget Item Justification

The TACP-Modernization (TACP-M) program is acquiring new equipment to give TACPs the capability to detect targets and compute precise target coordinates for employment of GPS aided weapons, reduce the potential for fratricide, and reduce the potential for collateral damage in civilian-occupied areas. This new equipment shortens the kill chain by reducing the time required to submit air support requests, provide target information to aircraft, and ensure pilots are tracking the correct target. By reducing the time required to execute close air support missions in "troops-in-contact" situations, the TACP-M program helps reduce the number of U.S. and coalition casualties due to enemy action. TACPs deploy with Army maneuver units and provide a Command and Control (C2) link for Close Air Support (CAS), airlift and AF surveillance/reconnaissance missions. TACPs are equipped with various targeting and communications equipment needed to interface with ground maneuver forces, aircraft conducting CAS operations, other Joint Fires assets, aerospace C2 aircraft/agencies, and Intelligence, Surveillance and Reconnaissance (ISR) platforms/agencies. The TACP-M program provides TACP, Air Support Operations Centers (ASOCs), and Tactical Operations Center (TOCs) personnel with the capability to precisely locate and target enemy ground forces by integrating various Laser Targeting Devices (LTD) and ultra high frequency satellite communications (UHF SATCOM) for beyond-line-of-sight (BLOS) Air Force Air Request Net operations. The purpose of the TACP-M program is to reduce reliance on voice transmission and replace analog equipment with the latest digital, data link and streaming video (e.g. Streaming Video Receiver) technology. Upgraded digital communications enable machine-to- machine interface between TACPs and Close Air Support (CAS) aircraft, Army units and other TACP units. Machine-to-machine communication provides reliable, high speed digital communications, ultimately supports joint and multinational interoperability, improves battlefield Situational Awareness (SA), increases targeting accuracy, reduces kill chain decision time, improves data flows/information exchange, and reduces potential fratricide. The TACP-M program supports the Overseas Contingency Operations (OCO) and significantly increased the mission effectiveness of the TACPs and ASOCs during Operation Enduring Freedom and Operation New Dawn. The TACP-M program continues to be instrumental in providing ground communications for TACPs during federal emergency relief operations and Homeland Defense initiatives.

TACP-M is divided into three segments: Dismounted, Mounted, and Software. The TACP provides modernized, modular, re-locatable and man portable capabilities via streamlined acquisition using non-developmental, off-the-shelf (OTS) Manpack Radios (MPR) or Handheld Radios (HHR), laser targeting devices (LTDs) (including Laser Range Finder (LRFs), Joint Effects Targeting System (JETS)laser designators and imagers), tactical computers, and ancillary equipment combined with Close Air Support System (CASS) software for dismounted, ASOC, and TOC use. TACP mounted segment upgrades existing TACP communications systems with new Software Communication Architecture (SCA)-CERTIFIED, Joint Tactical Radio System (JTRS) or available software programmable radios, legacy radios, and ancillary components, which provide reliable communications for CAS and other air support operations. TACP-M will integrate Internet Protocol (IP)-capable, SCA radios

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207423F: *Advanced Communications Systems*	PROJECT 674934: *Tactical Air Control Party (TACP)*

for voice & data UHF SATCOM and LOS UHF /VHF communications. TACP-M funds will continue to develop systems integration software (for dismounted and mounted) for multiple air/ground platforms (e.g. JETS (TECS software development), Small Diameter Bomb II (SDBII), F-35, Mine Resistant Ambush Protected (MRAP) vehicle, Gateway Lite, and ASOC Gateway vehicle) and will provide interoperability datalinks such as Situational Awareness Data Link (SADL), Link-16 and other transformational communications capabilities.

Mounted overseas contingency operations also require new digital communications/network enabled capabilities integrated in armored vehicle platforms including High Mobility, Multi-Wheeled Vehicles (HMMWV), Stryker, Mine Resistant Ambush Protected (MRAP) and other vehicle platforms used in times of conflict. The Air Force has requested acceleration of a vehicular communications capability into TACP Stryker Light Armored Vehicles (LAV) and other tactical vehicles.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have recieved approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Vehicle Communications System	3.922	3.037	-	-	-
Description: Vehicle Communications System (VCS) - Design, develop, fabricate, integrate , test, provide associated documentation (e.g. technical manuals) in support of delivering a digital multiple-channel, mobile VCS to replace the aging analog GRC-206 communications pallet. ***FY 2010 Accomplishments:*** Complete the design/development/documentation of the VCS for integration into High Mobility Multi-Wheeled Vehicles (HMMWVs). Fabricate and integrate VCS developmental units into HMMWVs for contractor, qualification, and operational testing and evaluation of the VCS. Complete all contractor and qualification testing. Start detailed operational test planning and activities. Initiate study and development effort to integrate VCS into an additional TACP vehicle type (e.g. Stryker). Initiation of a capability development effort for VCS capabilities integration into future tactical vehicles. ***FY 2011 Plans:*** Continue development effort to integrate VCS into additional TACP vehicle type (e.g. Stryker). Continue investigating additional vehicle types for integration of VCS. This effort requires contractor and engineering support to accomplish the engineering, management, and test planning activities. ***FY 2012 Base Plans:*** TACP RDT&E efforts have moved to PE 0207444F, BPAC 676013 effective FY2012. ***FY 2012 OCO Plans:***					
Title: Close Air Support System	6.136	7.298	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207423F: *Advanced Communications Systems*	PROJECT 674934: *Tactical Air Control Party (TACP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Close Air Support System (CASS) Software - Upgrade TACP digital communications mission software to enable machine-to-machine (MTM) interfaces between TACPs and multiple systems (e.g. CAS aircraft, Command and Control (C2) nodes, etc). Develop new capabilities to satisfy ORD requirements to improve battlefield Situational Awareness, increase targeting accuracy, reduce the kill chain, and improve data flow/information exchange and reduce fratricide. ***FY 2010 Accomplishments:*** Develop new MTM interfaces to Small Diameter Bomb II and Joint Strike Fighter (F35). Develop new MTM interfaces with C2 nodes and aircraft across the USAF, Joint, and Coalition environment and as well as developing new capabilities to satisfy ORD requirements. Develop, integrate, and test CASS mission software to be hosted on VCS. This effort will include contractor support, engineering support, test and evaluation. This effort also continues support to the Joint Digital Aided Close Air Support (DACAS) initiative to drive all major players in the Close CAS arena to a common standard. ***FY 2011 Plans:*** Continue to develop new MTM interfaces to Small Diameter Bomb II and Joint Strike Fighter (F35). Develop new interfaces with Joint Air Ground Integration Cell, C2 nodes, and aircraft across the USAF, Joint, and Coalition environment as well as developing new capabilities to satisfy ORD requirements. This effort will include contractor support, engineering support, test and evaluation. This effort also continues support to the Joint Digital Aided Close Air Support (DACAS) initiative to drive all major players in the Close CAS arena to a common standard. ***FY 2012 Base Plans:*** TACP RDT&E efforts have moved to PE 0207444F, BPAC 676013 effective FY2012. ***FY 2012 OCO Plans:***					
Title: Joint Effect Targeting System ***Description:*** Joint Effect Targeting System (JETS) - An Army-led program to develop, integrate, and test an integrated CAS targeting system that is smaller, lighter, and more accurate than current systems. JETS consists of two sub-systems: the Target Location and Designation System (TLDS) that provides target acquisition, high-accuracy target location, and laser designation; and the Target Effects Coordination System (TECS) that provides connectivity to the digital C4I systems and aircraft. JETS will be incrementally developed where TLDS is Increment 1 and TECS is Increment 2.	6.500	6.963	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207423F: *Advanced Communications Systems*	PROJECT 674934: *Tactical Air Control Party (TACP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: AF funds will support the development of a prototype TLDS system through the JETS program office. The primary TLDS capability requirements are; provide a reduction in hardware weight from current similar systems; provide a highly accurate target location capability, and achieve connectivity for TECS. In support to the overall JETS requirement, total targeted weight for all hardware shall be at or under a total system weight of 17 pounds with all supporting items including power sources. Support two TECS test excursions. This effort includes contractor support, engineering support, and test and evaluation. ***FY 2011 Plans:*** AF funds will continue support the development of a prototype TLDS system through the JETS program office. The primary TLDS capability requirements are; provide a reduction in hardware weight from current similar systems; provide a highly accurate target location capability, and achieve connectivity for TECS. Support TECS test excursions. This effort includes contractor support, engineering support, and test and evaluation. ***FY 2012 Base Plans:*** TACP RDT&E efforts have moved to PE 0207444F, BPAC 676013 effective FY2012. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	16.558	17.298	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207423F: *Advanced Communications System, OPAF*	71.683	132.963	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

TACP-M is executing an incremental development for the TACP CASS software. TACP CASS software systems engineering, design, integration, and fielding support is being provided under a cost plus fixed fee contract. TACP-M awarded a fixed price development contract (with options for production) for the Vehicular Communication System (VCS) in FY09 under full and open competition. JETS is a joint interest development program managed by the Army.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207423F: *Advanced Communications Systems*	PROJECT 674934: *Tactical Air Control Party (TACP)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ESC Sys Int Software Dev't	C/CPFF	Rockwell Collins:Poway, CA	2.601	3.614	Jan 2011	-		-		-	Continuing	Continuing	TBD
ESC Sys Int Software Dev't - 2	TBD	TBD:TBD,	-	1.000	Jun 2011	-		-		-	0.000	1.000	1.000
VCS (GRC-206 Replacement)	C/FFP	BAE Systems, Inc:Rockville, MD	2.230	2.239	Jan 2011	-		-		-	Continuing	Continuing	TBD
JETS	MIPR	Army - SSL Division:Ft Belvoir, VA	6.500	6.963	May 2011	-		-		-	Continuing	Continuing	TBD
		Subtotal	11.331	13.816		-		-		-			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering	TBD	TBD:TBD,	1.104	1.291	Feb 2011	-		-		-	Continuing	Continuing	TBD
		Subtotal	1.104	1.291		-		-		-			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Agency Support	Various	Various:Various,	2.240	1.999	Dec 2010	-		-		-	Continuing	Continuing	TBD
		Subtotal	2.240	1.999		-		-		-			

Remarks

Development, operational and interoperability testing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207423F: *Advanced Communications Systems*	PROJECT 674934: *Tactical Air Control Party (TACP)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support	Various	Various:Various	1.883	0.192	Jan 2011	-		-		-	Continuing	Continuing	TBD
		Subtotal	1.883	0.192		-		-		-			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.558	17.298		-		-		-			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207423F: *Advanced Communications Systems*	**PROJECT** 674934: *Tactical Air Control Party (TACP)*

TACP-M Program Schedule

U.S. AIR FORCE

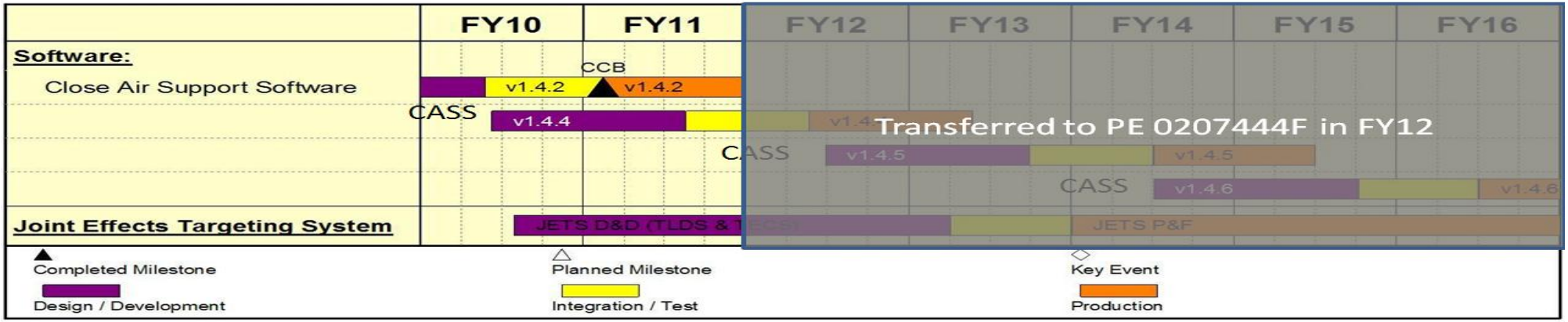

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207423F: *Advanced Communications Systems*	**PROJECT** 674934: *Tactical Air Control Party (TACP)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Software Development and Test - TACP-CASS v1.4.2	1	2010	4	2011
Software Development and Test- TACP-CASS v1.4.4	2	2010	2	2013
Software Development and Test- TACP-CASS v1.4.5	2	2012	2	2015
Software Development and Test-TACP-CASS v1.4.6	3	2014	4	2016
Joint Effects Targeting Systems - Development and Testing	3	2010	2	2013

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207423F: *Advanced Communications Systems*	PROJECT 675189: *C2ISR JTRS Integration*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675189: *C2ISR JTRS Integration*	44.872	50.234	90.083	-	90.083	194.387	249.469	494.156	610.430	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Joint Tactical Radio System (JTRS) is the Department of Defense (DoD) family of interoperable, modular, software-defined radios that will form the foundation of radio frequency information transmission for Joint Vision 2020. Joint Tactical Radio Systems (JTRS) will link the power of the Global Information Grid (GIG) to the warfighter in applying fire effects and achieving overall battlefield superiority. By developing and implementing an open architecture of cutting-edge radio waveform technology, multiple radio types (e.g., handheld, ground-mobile, airborne, maritime, etc.) are now capable of communicating with one another. JTRS radios are intended to interoperate with existing radio systems and improve Joint warfighting through a series of new, joint networking waveforms enabling communication via voice, data, and video over mobile, ad-hoc, internet protocol (IP) based networks. Each radio will operate as a node in the network to ensure secure wireless communication and networking services for airborne, mobile and fixed forces. These goals extend to U.S. allies, joint and coalition partners, and, in time, disaster response personnel. JTRS will make the Air Force more effective in Joint warfighting through a series of new, joint networking waveforms. These waveforms included the Mobile User Objective System (MUOS), which provides next generation SATCOM beyond-line-of-sight (BLOS)communications, as well as the Wideband Networking Waveform (WNW) and the Soldier Radio Waveform(SRW) which provide interoperability with Army ground forces from the bridade level down to the dismounted soldier. Together these waveforms enable Joint Close Air Support (JCAS), Combat Search and Rescue (CSAR) and other Joint missions. The JTRS program is built around an open Software Communications Architecture (SCA), allowing common software waveform applications to be implemented across the family of radios to provide joint-service, allied, and coalition interoperability. The Enterprise Business Model, incorporating a common set of shared open system standards, promotes competition and reduces procurement costs for the DoD.

Air Force JTRS will support the development of a common integration solution and acquisition plan across multiple AF platforms as well as unique integration solutions to meet platform specific requirements. Non-recurring engineering investment in JTRS integration hardware, software, and risk reduction efforts is required to successfully integrate these digital radios on Air Force platforms, display information received and transmitted over these radios for operator use, and integrate JTRS information with information from other aircraft systems. This hardware and software includes racks, cabling, digital processors and data displays necessary to integrate JTRS radio sets, onto multiple Air Force platforms. Development activities support the close coordination with the JTRS JPEO, industry, and the platform program offices to ensure successful and efficient integration of JTRS radios onto a wide variety of unique AF platforms. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Systems Engineering and integration	16.107	27.430	66.752	-	66.752

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207423F: *Advanced Communications Systems*	PROJECT 675189: *C2ISR JTRS Integration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Systems engineering and integration to develop and certify solutions to Air Force unique requirements for the integration of JTRS radios into Air Force platforms. ***FY 2010 Accomplishments:*** Funds system engineering and integration to deliver an interoperable, fully synchronized, and deployable JTRS system. ***FY 2011 Plans:*** Funds development and certification of Air Force unique requirements for JTRS AMF-Fixed terminals. Funds development and risk reduction efforts for a common integration solution for integration of AMF-SA terminals onto Air Force platforms. ***FY 2012 Base Plans:*** Funds hardware and software development of a common integration solution for the integration of AMF-SA terminals onto a variety of Air Force platforms. Also funds risk reductions activities and the development of integration solutions to meet the unique requirements of each host platform. ***FY 2012 OCO Plans:***					
Title: Platform Planning and Integration ***Description:*** Platform planning and integration support ***FY 2010 Accomplishments:*** Funds technical, engineering, and enterprise architecture support to MAJCOMs developing operational requirements and CONOPs. ***FY 2011 Plans:*** Funds non-recurring engineering (NRE) for integration of JTRS Multi Functional Information Distribution System (MIDS) terminal on the JSTARS aircraft. Funds integration efforts for the JTRS AMF-SA onto the C-130 AMP and AWACS aircraft. ***FY 2012 Base Plans:*** Continues to fund non-recurring engineering (NRE) for integration of JTRS Multi Functional Information Distribution System (MIDS) terminal on the JSTARS aircraft. Continues to fund integration efforts for the JTRS	18.872	19.794	18.854	-	18.854

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207423F: *Advanced Communications Systems*	PROJECT 675189: *C2ISR JTRS Integration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
AMF-SA onto the C-130 AMP and AWACS aircraft. Assists other Air Force platforms in determining integration requirements and architectures. ***FY 2012 OCO Plans:***					
Title: Test and Evaluation ***Description:*** Interoperability testing and evalution to perform risk reduction to ensure successful platform integration. ***FY 2010 Accomplishments:*** Funds Engineering Design Models (EDMs) to perform interoperability testing, evaluation, and risk reduction to ensure successful integration on various platforms. Extensive evaluations and reporting to be accomplished. ***FY 2011 Plans:*** Funds Engineering Design Models (EDMs) to perform interoperability testing, evaluation, and risk reduction to ensure successful integration on various platforms. Extensive evaluations and reporting to be accomplished. ***FY 2012 Base Plans:*** Interoperability testing and evalution to perform risk reduction to ensure successful platform integration. ***FY 2012 OCO Plans:***	9.893	3.010	4.477	-	4.477
Accomplishments/Planned Programs Subtotals	44.872	50.234	90.083	-	90.083

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207423F: *Advanced Communication System, APAF*	8.755	11.571	58.542	0.000	58.542	24.262	19.338	54.034	142.831	Continuing	Continuing
• PE 0207423F (1): *Advanced Communication System, OPAF*	59.591	31.693	95.852	0.000	95.852	80.630	195.540	104.074	224.659	Continuing	Continuing

D. Acquisition Strategy

In 2005, the DoD established the Joint Program Executive Office (JPEO) for JTRS. The JPEO has full directive authority for all JTRS research, development, testing, adn evaluation of waveforms, radios, common ancillaries, network management, and associated software. The JPEO is funded jointly by the Services in PE 0604280N.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207423F: *Advanced Communications Systems*	PROJECT 675189: *C2ISR JTRS Integration*

Air Force JTRS Program Office will perform system engineering integration, to deliver an interoperable, fully synchronized, deployable JTRS system under various contract awards. The program office will lead the development of common integration hardware and sofware that can be used across multiple Air Force platforms. The AF JTRS program office will also work with the JPEO, industry, and the platform program offices to develop integration solutions specific to each platform. This effort will assist various AF platform users in acquiring and integrating the next generation communications system, to include all key documentation (CONOPS, TTPs, ICDs, TRDs, etc.)

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207423F: *Advanced Communications Systems*	PROJECT 675189: *C2ISR JTRS Integration*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering, Planning, and Integration-1	SS/CPIF	Northrop Grumman:Melbourne, FL	29.654	12.212	Jan 2011	9.900	Jan 2012	-		9.900	Continuing	Continuing	TBD
Systems Engineering, Planning, and Integration-2	SS/CPIF	Boeing and Lockheed Martin:Various,	2.755	7.000	Jan 2011	7.750	Jan 2012	-		7.750	Continuing	Continuing	TBD
Systems Engineering, Planning, and Integration-3	SS/CPIF	General Atomics:San Diego, CA	14.295	-		-		-		-	Continuing	Continuing	TBD
Systems Engineering, Planning, and Integration-4	C/CPFF	L3COM:Greenville, TX	15.453	-		-		-		-	Continuing	Continuing	TBD
Systems Engineering, Planning, and Integration	SS/CPAF	Northrop Grumman:San Diego, CA	4.151	-		-		-		-	0.000	4.151	4.151
Systems Engineering, Planning, and Integration-5	SS/CPIF	Rockwell Collins:Various,	17.760	-		-		-		-	Continuing	Continuing	TBD
Systems Engineering, Planning, and Integration-6	SS/CPIF	JTRS JPEO:San Diego, CA	2.507	9.830	Mar 2011	-		-		-	0.000	12.337	12.337
Systems Engineering, Planning, and Integration-7	TBD	Various:Various,	6.693	14.100	Feb 2011	59.002	Jan 2012	-		59.002	0.000	79.795	79.795
		Subtotal	93.268	43.142		76.652		-		76.652			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Activities and Support	TBD	Various:Various,	11.008	4.082	Feb 2011	8.954	Feb 2012	-		8.954	0.000	24.044	24.044
		Subtotal	11.008	4.082		8.954		-		8.954	0.000	24.044	24.044

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207423F: *Advanced Communications Systems*	PROJECT 675189: *C2ISR JTRS Integration*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Planning and Test Agency Support	TBD	Various:Various,	9.893	3.010	Feb 2011	4.477	Feb 2012	-		4.477	0.000	17.380	17.380
		Subtotal	9.893	3.010		4.477		-		4.477	0.000	17.380	17.380

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	114.169	50.234		90.083		-		90.083			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207423F: *Advanced Communications Systems*	PROJECT 675189: *C2ISR JTRS Integration*

Air Force JTRS Procurement and Integration Schedule

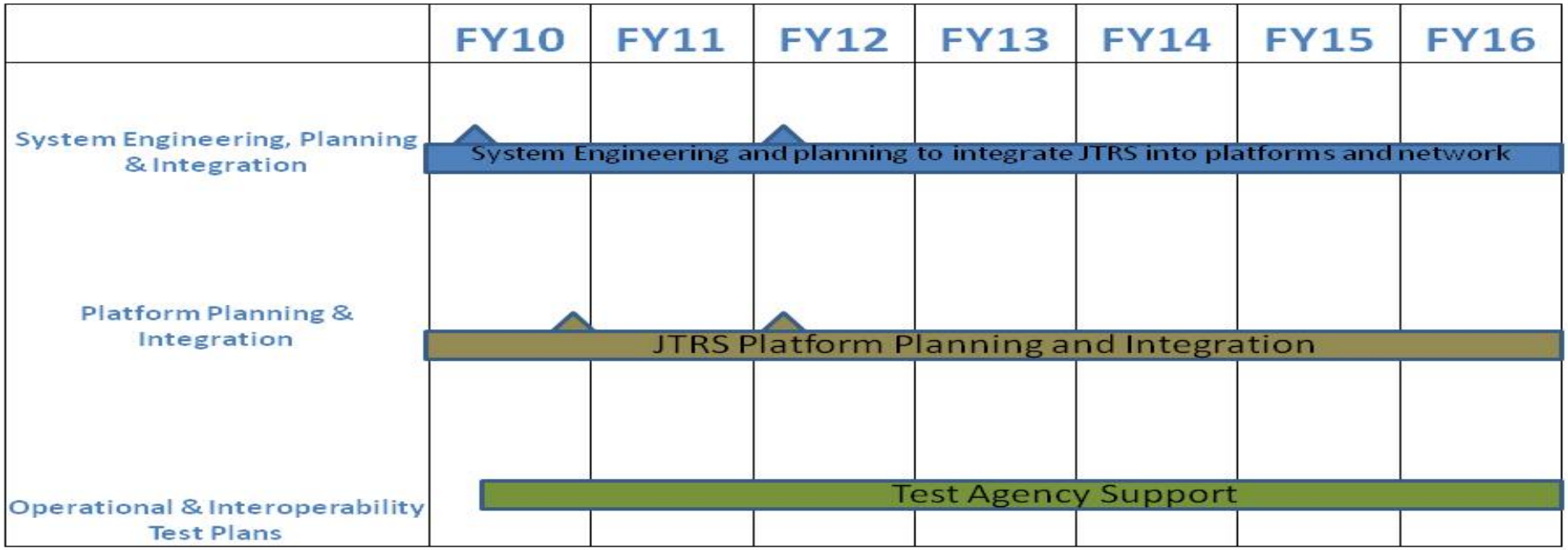

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207423F: *Advanced Communications Systems*	**PROJECT** 675189: *C2ISR JTRS Integration*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Systems Engineering	1	2010	4	2016
Platform Planning and Integration	1	2010	4	2016
Operational & Interoperability Test Planning	2	2010	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207431F: *Combat Air Intelligence System*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	1.469	3.310	5.428	-	5.428	5.745	5.831	5.914	6.019	Continuing	Continuing
675307: *TARGETING ENTERPRISE RESEARCH*	0.977	2.142	3.851	-	3.851	4.076	4.138	4.197	4.271	Continuing	Continuing
675309: *GEO Info & Serv Software*	0.492	1.168	1.577	-	1.577	1.669	1.693	1.717	1.748	Continuing	Continuing

A. Mission Description and Budget Item Justification

The mission of Combat Air Intelligence Systems (CAIS) is to process, analyze, and disseminate intelligence for air component and unit operations worldwide by providing key intelligence infrastructure and tactical production capabilities for the Air Force with true backbone type of intelligence support for air operations. CAIS is focused on providing the "tactical" combat-oriented intelligence infrastructure for Air Force major commands: providing funding to ACC, PACAF, USAFE, AMC, AFMC, AFSOC, and AETC to primarily fund Air Intelligence Squadrons and the 480th Intelligence Group. This program is in Budget Activity 7, Operational System Development, because it addresses the tactical combat-oriented intelligence infrastructure for the Air Force major commands.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	1.475	3.310	5.684	-	5.684
Current President's Budget	1.469	3.310	5.428	-	5.428
Total Adjustments	-0.006	-	-0.256	-	-0.256
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.006	-	-0.256	-	-0.256

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207431F: *Combat Air Intelligence System*	PROJECT 675307: *TARGETING ENTERPRISE RESEARCH*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675307: *TARGETING ENTERPRISE RESEARCH*	0.977	2.142	3.851	-	3.851	4.076	4.138	4.197	4.271	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Provides support to JWICS users utlilizing Tactical Intelligence Applications, Target Planning & Execution, Geospatial Intelligence, Intelligence Training and dissemination architecture targeting capabilities. System information is in direct support to National, Combatant Command, and Air Force Intelligence Missions.

Targeting Training emphasis ensures certified targeteers meet growing precision-guided munitions inventory. GWOT demands create training and continuity challenges. IFTUs and Training Transformation helping to alleviate training burden. Increased demand on classified systems and networks to support operations and mission requirements.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Targeting Enterprise Research	0.977	2.142	3.851	-	3.851
Description: Conduct Targeting Enterprise Research ***FY 2010 Accomplishments:*** Conduct Targeting Enterprise Research ***FY 2011 Plans:*** Conduct Targeting Enterprise Research ***FY 2012 Base Plans:*** Continue to conduct Targeting Enterprise Research. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	0.977	2.142	3.851	-	3.851

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207431F: *Combat Air Intelligence System*	PROJECT 675307: *TARGETING ENTERPRISE RESEARCH*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A: *Not applicable*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

All contracts are awarded based on full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207431F: *Combat Air Intelligence System*	PROJECT 675307: *TARGETING ENTERPRISE RESEARCH*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Targeting Enterprise Research	TBD	TBD:TBD,	0.977	2.142	Jan 2011	3.851	Jan 2012	-		3.851	Continuing	Continuing	TBD
		Subtotal	0.977	2.142		3.851		-		3.851			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.977	2.142		3.851		-		3.851			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207431F: *Combat Air Intelligence System*	PROJECT 675307: *TARGETING ENTERPRISE RESEARCH*

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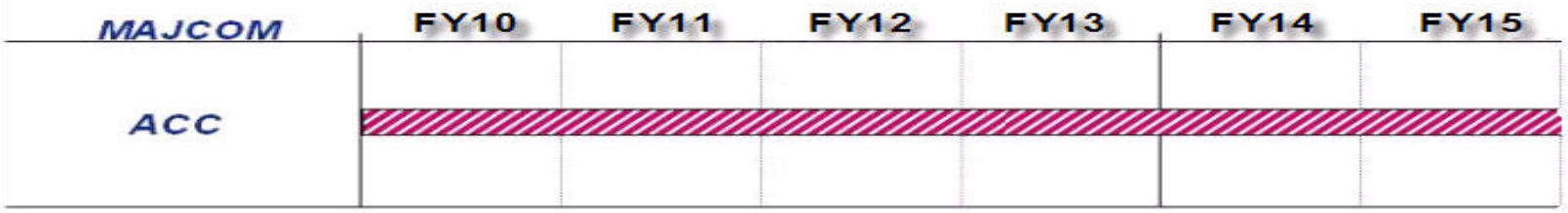
Geospatial Product Library (GPL) Schedule



R&D SOFTWARE/HARDWARE (674826)

Geospatial Product Library (GPL) RDT&E Tasks:

Develop an Air Force open source (i.e. free software) web services capability to be hosted on the Enhanced GPL. Prototype to initially provide various Open Geospatial Consortium (OGC) services in a test-bed environment.

Continue development of the Enhanced GPL. The goal is to transform the GPL into a modular geospatial data server that is scalable in terms of capability (processing & storage) and application software (mission support).

Continue research in the latest automation techniques with a goal of improving or making more efficient the automated data flow to the fielded GPL systems.

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207431F: *Combat Air Intelligence System*	**PROJECT** 675307: *TARGETING ENTERPRISE RESEARCH*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Targeting Enterprise Research	1	2010	4	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207431F: *Combat Air Intelligence System*	PROJECT 675309: *GEO Info & Serv Software*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675309: *GEO Info & Serv Software*	0.492	1.168	1.577	-	1.577	1.669	1.693	1.717	1.748	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Provides support to Geospatial resources utilized in Geospatial Intelligence Databasing Applications, Technology Exploration and Technology Refresh initiatives, management and dissemination architecture, GI&S modernization and enablers for targeting capabiilties. Provides support to the MAJCOMS to ensure requisite and available target intelligence and Geospatial Intelligence tools and information directly available to combatants.

Air Force GEOINT Support program funds the Air Force Geospatial Product Library (GPL) which is currently fielded to all Combatant Command Air Components and subordinate units supporting global air operations. The GPL provides digital GEOINT data to support mission planning, targeting & intelligence in support of mission objectives.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: GEO Info & Serv Software	0.492	1.168	1.577	-	1.577
Description: Provides GEO Info & Serv Software					
FY 2010 Accomplishments: Provides GEO Info & Serv Software.					
FY 2011 Plans: Continue to provide GEO Info & Serv Software.					
FY 2012 Base Plans: Provides GEO Info & Serv Software.					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	0.492	1.168	1.577	-	1.577

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207431F: *Combat Air Intelligence System*	PROJECT 675309: *GEO Info & Serv Software*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A: *None.*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

All major contracts within this project will be awarded after full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207431F: *Combat Air Intelligence System*	PROJECT 675309: *GEO Info & Serv Software*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	TBD	TBD:TBD,	0.492	1.168	Jan 2011	1.577	Jan 2012	-		1.577	Continuing	Continuing	TBD
		Subtotal	0.492	1.168		1.577		-		1.577			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.492	1.168		1.577		-		1.577			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207431F: *Combat Air Intelligence System*	PROJECT 675309: *GEO Info & Serv Software*

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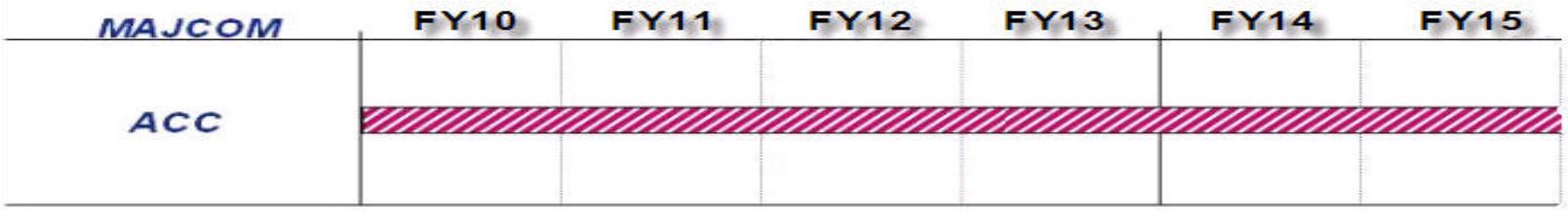
Geospatial Product Library (GPL) Schedule



R&D SOFTWARE/HARDWARE (674826)

Geospatial Product Library (GPL) RDT&E Tasks:

Develop an Air Force open source (i.e. free software) web services capability to be hosted on the Enhanced GPL. Prototype to initially provide various Open Geospatial Consortium (OGC) services in a test-bed environment.

Continue development of the Enhanced GPL. The goal is to transform the GPL into a modular geospatial data server that is scalable in terms of capability (processing & storage) and application software (mission support).

Continue research in the latest automation techniques with a goal of improving or making more efficient the automated data flow to the fielded GPL systems.

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207431F: *Combat Air Intelligence System*	PROJECT 675309: *GEO Info & Serv Software*

Schedule Details

	Start		End	
Events	Quarter	Year	Quarter	Year
Software Development	1	2010	4	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207438F: *Theater Battle Management (TBM) C4I*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	18.374	15.170	15.528	-	15.528	15.817	15.217	14.153	14.220	Continuing	Continuing
674802: *Deliberate and Crisis Action Planning and Execution Segment (DCAPES)*	18.374	15.170	15.528	-	15.528	15.817	15.217	14.153	14.220	Continuing	Continuing

Note

The program funding includes reductions for Overhead Reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.127M in FY12.

A. Mission Description and Budget Item Justification

The TBM C4I PE includes Deliberate and Crisis Action Planning and Execution Segments (DCAPES), which is being developed as the next-generation AF interface to the Joint Operational Planning and Execution System (JOPES). DCAPES is the Air Force's single system to present, plan, source, mobilize, deploy, account for, sustain, redeploy, and reconstitute forces for contingency and crisis operations. This system provides a real time, two way interchange of personnel, manpower, logistics, and operational data between the Air Force and the warfighting Combatant Commanders. It matches people, cargo, and airframes/weapon systems to the Combatant Commander's warfighting requirements. Acquisition of this system supports the Air Force's expeditionary force concept.

Development activities may also include Logistics Feasibility Analysis Capability (LOGFAC), Logistics Module/Manpower and Personnel Module-Base (LOGMOD/ MANPER B), War and Mobilization Planning (WMP), Enhanced Contingency Rotational AEF SchedulingTool (ECAST), Web Enablement, and JOPES Modernization Migration. Activities also include studies and analysis to support both current program planning and execution and future program planning to modify systems to consume authoritative force structure from Global Force Management-Data Initiative (GFM-DI) Org
Servers, linking the identifiers to or replacing current identifiers and, as applicable, exposing the data in a net-centric fashion.
This effort is an evolutionary follow-on to the Contingency Operations Mobility Planning and Execution System (COMPES). DCAPES replaced the operational tasking and priorities functionality of COMPES with modern relational databases, integrated-distributed database, and common and shared data consistent with the Joint vision for integrated Command and Control. DCAPES is intended to provide a command and control capability by exchanging data with a range of planning support systems to provide a more effective force projection capability for a wider range of operational scenarios and will fully support the force provider function of the AF Forces (AFFOR) commander. DCAPES along with numerous other war planning support legacy systems are transitioning into a net-centric Service Oriented Architecture (SOA) environment via a War Planning and Execution System (WPES) management construct.

DCAPES Increment 2a is post Milestone B and Increment 2b is pre-milestone B. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207438F: *Theater Battle Management (TBM) C4I*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	19.067	15.170	13.707	-	13.707
Current President's Budget	18.374	15.170	15.528	-	15.528
Total Adjustments	-0.693	-	1.821	-	1.821
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-0.114	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.579	-			
• Other Adjustments	-	-	1.821	-	1.821

Change Summary Explanation

FY 12 funding increased to enhance net-centric capabilities.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207438F: *Theater Battle Management (TBM) C4I*	PROJECT 674802: *Deliberate and Crisis Action Planning and Execution Segment (DCAPES)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674802: *Deliberate and Crisis Action Planning and Execution Segment (DCAPES)*	18.374	15.170	15.528	-	15.528	15.817	15.217	14.153	14.220	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The TBM C4I PE includes Deliberate and Crisis Action Planning and Execution Segments (DCAPES), which is being developed as the next-generation AF interface to the Joint Operational Planning and Execution System (JOPES). DCAPES is the Air Force's single system to present, plan, source, mobilize, deploy, account for, sustain, redeploy, and reconstitute forces for contingency and crisis operations. This system provides a real time, two way interchange of personnel, manpower, logistics, and operational data between the Air Force and the warfighting Combatant Commanders. It matches people, cargo, and airframes/weapon systems to the Combatant Commander's warfighting requirements. Acquisition of this system supports the Air Force's expeditionary force concept.

Development activities may also include Logistics Feasibility Analysis Capability (LOGFAC), Logistics Module/Manpower and Personnel Module-Base (LOGMOD/ MANPER B), War and Mobilization Planning (WMP), Enhanced Contingency Rotational AEF SchedulingTool (ECAST), Web Enablement, and JOPES Modernization Migration. Activities also include studies and analysis to support both current program planning and execution and future program planning to modify systems to consume authoritative force structure from Global Force Management-Data Initiative (GFM-DI) Org
Servers, linking the identifiers to or replacing current identifiers and, as applicable, exposing the data in a net-centric fashion.
This effort is an evolutionary follow-on to the Contingency Operations Mobility Planning and Execution System (COMPES). DCAPES replaced the operational tasking and priorities functionality of COMPES with modern relational databases, integrated-distributed database, and common and shared data consistent with the Joint vision for integrated Command and Control. DCAPES is intended to provide a command and control capability by exchanging data with a range of planning support systems to provide a more effective force projection capability for a wider range of operational scenarios and will fully support the force provider function of the AF Forces (AFFOR) commander. DCAPES along with numerous other war planning support legacy systems are transitioning into a net-centric Service Oriented Architecture (SOA) environment via a War Planning and Execution System (WPES) management construct.

DCAPES Increment 2a is post Milestone B and Increment 2b is pre-milestone B. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Loosely Couple DCAPES/JOPES Interfaces	18.374	15.170	15.528	-	15.528

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207438F: *Theater Battle Management (TBM) C4I*	**PROJECT** 674802: *Deliberate and Crisis Action Planning and Execution Segment (DCAPES)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Continue Increment 2 requirements definition, protoyping, development, testing, interoperability, sustainment, and service oriented architecture transition. ***FY 2010 Accomplishments:*** Fielded and maintained DCAPES 4.1.0.5 (supporting JOPES v4.2 interoperability), took delivery and tested DCAPES 4.1.2.0 (Oracle 11g), developed loose coupling release one 4.2.2.0 (now combined with v4.2.1.0), maintained interoperability and completed DCAPER. ***FY 2011 Plans:*** Will field DCAPES 4.1.2.0 (Oracle 11g), develop/deliver loose coupling release one (v4.2.2.1) and v5.0.0.0 (outbound transactions), address Critical Warfighter requirements, and maintain interoperability. ***FY 2012 Base Plans:*** Will field loose coupling release one (v4.2.2.1) and v5.0.0.0 (outbound transactions), develop/deliver loose coupling release v5.0.1.0 (maintenance release), address Critical Warfighter requirements, and maintain interoperability. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	18.374	15.170	15.528	-	15.528

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A: *PE 0207438F - O&M*	3.571	3.459	6.969	0.000	6.969	5.827	6.056	6.228	6.344	Continuing	Continuing

D. Acquisition Strategy

The program uses an evolutionary acquisition strategy with incremental development with multiple software releases to accommodate refinement and prioritization of user requirements and improve adaptability with commercial technology.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207438F: *Theater Battle Management (TBM) C4I*	PROJECT 674802: *Deliberate and Crisis Action Planning and Execution Segment (DCAPES)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DCAPES Increment 2a	SS/Various	CSC:Falls Church, VA	15.379	11.764	Nov 2010	2.916	Nov 2011	-		2.916	Continuing	Continuing	TBD
DCAPES Increment 2b	C/TBD	TBD:,	-	-		9.191	Nov 2011	-		9.191	Continuing	Continuing	TBD
FFRDC	SS/Various	Mitre:Bedford, MA	0.324	0.315	Oct 2010	0.324	Oct 2011	-		0.324	Continuing	Continuing	TBD
Architecture Documentation Development	C/Various	Copper River IT:Anchorage, AK	0.341	0.341	Mar 2011	0.341	Mar 2012	-		0.341	Continuing	Continuing	TBD
		Subtotal	16.044	12.420		12.772		-		12.772			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Logistic Functional Support	C/Various	OASIS Systems, Inc:Lexington, MA	0.120	0.122	Jan 2011	0.124	Jan 2012	-		0.124	Continuing	Continuing	TBD
Contract Cost Analysis Support	C/Various	Tecolote Research, Inc:Goleta, CA	0.132	0.205	Oct 2010	0.205	Oct 2011	-		0.205	Continuing	Continuing	TBD
Contract Engineering Support	C/Various	Jacobs Technology, Inc:Lincoln, MA	0.290	0.294	Dec 2010	0.298	Dec 2011	-		0.298	Continuing	Continuing	TBD
Contract System Security Support	C/Various	Harris IT, Inc:Dulles, VA	0.023	0.199	Dec 2010	0.199	Dec 2010	-		0.199	Continuing	Continuing	TBD
		Subtotal	0.565	0.820		0.826		-		0.826			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
46 Test Sqdn	MIPR	Various:Eglin AFB, FL	0.457	0.560	Feb 2011	0.560	Feb 2012	-		0.560	Continuing	Continuing	TBD
605 Test Sqdn	MIPR	Various:Hurlburt Field, FL	0.536	0.550	Feb 2011	0.550	Feb 2012	-		0.550	Continuing	Continuing	TBD
DISA JITC	MIPR	Various:Ft Hauchuca, AZ	0.199	0.250	Feb 2011	0.250	Feb 2012	-		0.250	Continuing	Continuing	TBD

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207438F: *Theater Battle Management (TBM) C4I*	PROJECT 674802: *Deliberate and Crisis Action Planning and Execution Segment (DCAPES)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Test Support	C/Various	Various:Various,	0.001	0.015	Dec 2010	0.015	Dec 2011	-		0.015	Continuing	Continuing	TBD
User Test Support	MIPR	Various:Various,	0.257	0.225	Oct 2010	0.225	Oct 2011	-		0.225	Continuing	Continuing	TBD
		Subtotal	1.450	1.600		1.600		-		1.600			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Program Management Office (PMO) Support	C/Various	OASIS Systems, Inc:Lexington MA,	0.295	0.310	Jan 2011	0.310	Jan 2012	-		0.310	Continuing	Continuing	TBD
PMO Support - Travel	MIPR	Various:Maxwell AFB-Gunter Annex, Al	0.020	0.020	Oct 2010	0.020	Nov 2012	-		0.020	Continuing	Continuing	TBD
		Subtotal	0.315	0.330		0.330		-		0.330			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	18.374	15.170		15.528		-		15.528			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207438F: *Theater Battle Management (TBM) C4I*	**PROJECT** 674802: *Deliberate and Crisis Action Planning and Execution Segment (DCAPES)*

DCAPES-LOGFAC PROGRAM SCHEDULE

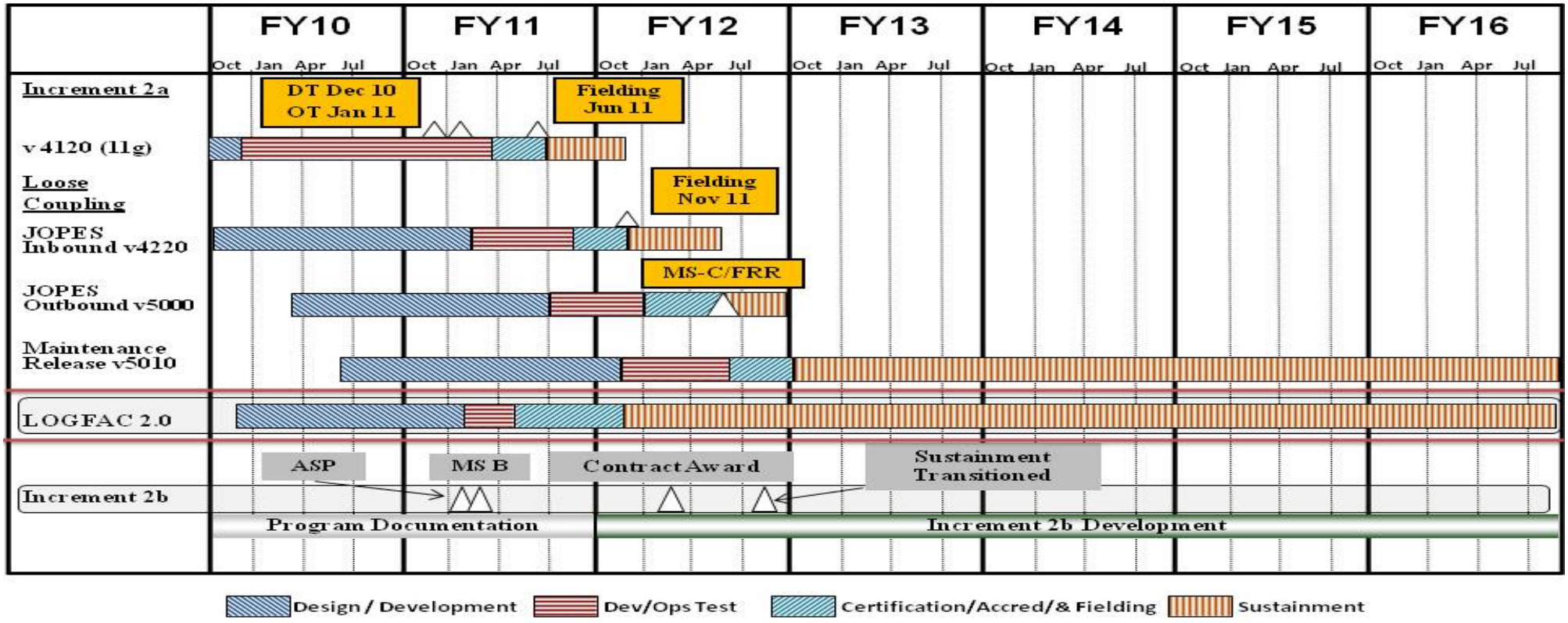

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207438F: *Theater Battle Management (TBM) C4I*	**PROJECT** 674802: *Deliberate and Crisis Action Planning and Execution Segment (DCAPES)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Increment 2a 4.1.2.0 Development and Test	1	2010	2	2011
Loose Coupling : JOPES v4221 Development	1	2010	2	2011
Loose Coupling : JOPES v4221 Test and Fielding	2	2011	3	2012
Loose Coupling : JOPES v5000 Development	2	2010	3	2011
Loose Coupling : JOPES v5000 Test and Fielding	4	2011	4	2012
Loose Coupling : Maintenance Release v5010 Development	3	2010	1	2012
Loose Coupling : Maintenance Release v5010 Test and Fielding	1	2012	4	2012
Increment 2b Concept Development (Pre-Solicitation Activities)	2	2010	2	2011
Increment 2b: Source Selection	2	2011	4	2011
Increment 2b: Development	1	2012	4	2012

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207444F: *Tactical Air Control Party Modernization*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	15.978	-	15.978	16.194	10.511	10.351	10.503	Continuing	Continuing
676013: *Equipment Modernizaton*	-	-	15.978	-	15.978	16.194	10.511	10.351	10.503	Continuing	Continuing

Note

In FY2012, Project 676013, Equipment Modernization, efforts were transferred from PE 0207423F, Advanced Communications Systems, Project 674934, TACP-M, in order to better identify and deliniate efforts for Tactical Air Control Party Modernization.

A. Mission Description and Budget Item Justification

The TACP-Modernization (TACP-M) program is acquiring new capabilities to give TACPs the ability to detect targets and compute precise target coordinates for employment of GPS-aided weapons, reduce the potential for fratricide, and reduce the potential for collateral damage in civilian-occupied areas. This new equipment shortens the kill chain by reducing the time required to submit air support requests, providing target information to aircraft, and ensuring pilots are tracking the correct target. By reducing the time required to execute Close Air Support (CAS) missions in "troops-in-contact" situations, the TACP-M program helps reduce the number of U.S. and coalition casualties due to enemy action. TACPs deploy with Army maneuver units and provide a Command and Control (C2) link for CAS, airlift and AF surveillance/reconnaissance missions. TACPs are equipped with various targeting and communications equipment needed to interface with ground maneuver forces, aircraft conducting CAS operations, other Joint Fires assets, aerospace C2 aircraft/agencies, and Intelligence, Surveillance and Reconnaissance (ISR) platforms/ agencies. The TACP-M program provides TACP, Air Support Operations Center (ASOC), and Tactical Operations Center (TOC) personnel with the capability to precisely locate and target enemy ground forces by integrating various Laser Targeting Devices (LTD) and ultra high frequency satellite communications (UHF SATCOM) for beyond-line-of-sight (BLOS) Air Force Air Request Net operations. The purpose of the TACP-M program is to reduce reliance on voice transmission and replace analog equipment with the latest digital, data link and streaming video (e.g. Streaming Video Receiver) technology. Upgraded digital communications enable machine-to-machine interface between TACPs and CAS aircraft, Army units and other TACP units. Machine-to-machine communication provides reliable, high-speed digital communications, ultimately supports joint and multinational interoperability, improves battlefield Situational Awareness (SA), increases targeting accuracy, reduces kill chain decision time, improves data flows/information exchange, and reduces potential fratricide. The TACP-M program supports Overseas Contingency Operations (OCO) and significantly increases the mission effectiveness of the TACPs and ASOCs during Operation Enduring Freedom and Operation New Dawn. TACP-M program continues to be instrumental in providing ground communications for TACPs during federal emergency relief operations and Homeland Defense initiatives.

TACP-M is divided into three segments: Dismounted, Mounted, and Software. The TACP dismounted segment provides modernized, modular, re-locatable and man-portable capabilities via streamlined acquisition using non-developmental, off-the-shelf (OTS) Manpack Radios (MPR) or Handheld Radios (HHR), laser targeting devices (LTDs) (including but not limited to Laser Range Finder (LRFs), Joint Effects Targeting System (JETS) laser designators and imagers), tactical computers, and ancillary equipment combined with Close Air Support System (CASS) software for dismounted, ASOC, and TOC use. The TACP mounted segment upgrades existing TACP communications systems with new Software Communication Architecture (SCA)-certified, Joint Tactical Radio System (JTRS) or available software programmable radios, legacy radios, and ancillary components, which provide reliable communications for CAS and other air support operations. TACP-M will integrate Internet Protocol (IP)-capable, SCA radios for voice & data UHF SATCOM and LOS UHF /VHF communications. TACP-M funds will continue to develop

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207444F: *Tactical Air Control Party Modernization*

systems integration software (for dismounted and mounted) for multiple air/ground platforms (e.g. JETS (Target Effects Coordination System [TECS])software development, Small Diameter Bomb II (SDBII), F-35, Mine Resistant Ambush Protected(MRAP)vehicle, Gateway Lite, and ASOC Gateway vehicle and will provide interoperability data links such as Situational Awareness Data Link (SADL), Link-16 and other transformational communications capabilities.

Mounted overseas contingency operations also require new digital communications/network enabled capabilities integrated in armored vehicle platforms, including High Mobility, Multi-Wheeled Vehicles (HMMWV), Stryker, Mine Resistant Ambush Protected (MRAP) and other vehicle platforms used in times of conflict. The Air Force has requested accelleration of a vehicle communications capability into TACP Stryker Light Armored Vehicles (LAV), and other tactical vehicles.

FY12 efforts include continued development in integrating VCS into additional vehicles, CASS software development for additional interfaces with new weapons, aircraft, C2 nodes, and development of TLDS and TECS through the JETS program office.

The TACP-M program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	-	16.575	-	16.575
Current President's Budget	-	-	15.978	-	15.978
Total Adjustments	-	-	-0.597	-	-0.597
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.597	-	-0.597

Change Summary Explanation

In FY2012, Project 676013, Equipment Modernization, efforts were transferred from PE 0207423F, Advanced Communications Systems, Project 674934, Tactical Air Control Party, in order to better identify and deliniate efforts for Tactical Air Control Party Modernization.

The program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.597M in FY12.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207444F: *Tactical Air Control Party Modernization*	PROJECT 676013: *Equipment Modernizaton*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
676013: *Equipment Modernizaton*	-	-	15.978	-	15.978	16.194	10.511	10.351	10.503	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2012, Project 676013, Equipment Modernization, efforts were transferred from PE 0207423F, Advanced Communications Systems, Project 674934, TACP-M, in order to better identify and deliniate efforts for Tactical Air Control Party Modernization.

A. Mission Description and Budget Item Justification

The TACP-Modernization (TACP-M) program is acquiring new capabilities to give TACPs the ability to detect targets and compute precise target coordinates for employment of GPS-aided weapons, reduce the potential for fratricide, and reduce the potential for collateral damage in civilian-occupied areas. This new equipment shortens the kill chain by reducing the time required to submit air support requests, providing target information to aircraft, and ensuring pilots are tracking the correct target. By reducing the time required to execute Close Air Support (CAS) missions in "troops-in-contact" situations, the TACP-M program helps reduce the number of U.S. and coalition casualties due to enemy action. TACPs deploy with Army maneuver units and provide a Command and Control (C2) link for CAS, airlift and AF surveillance/reconnaissance missions. TACPs are equipped with various targeting and communications equipment needed to interface with ground maneuver forces, aircraft conducting CAS operations, other Joint Fires assets, aerospace C2 aircraft/agencies, and Intelligence, Surveillance and Reconnaissance (ISR) platforms/ agencies. The TACP-M program provides TACP, Air Support Operations Center (ASOC), and Tactical Operations Center (TOC) personnel with the capability to precisely locate and target enemy ground forces by integrating various Laser Targeting Devices (LTD) and ultra high frequency satellite communications (UHF SATCOM) for beyond-line-of-sight (BLOS) Air Force Air Request Net operations. The purpose of the TACP-M program is to reduce reliance on voice transmission and replace analog equipment with the latest digital, data link and streaming video (e.g. Streaming Video Receiver) technology. Upgraded digital communications enable machine-to-machine interface between TACPs and CAS aircraft, Army units and other TACP units. Machine-to-machine communication provides reliable, high-speed digital communications, ultimately supports joint and multinational interoperability, improves battlefield Situational Awareness (SA), increases targeting accuracy, reduces kill chain decision time, improves data flows/information exchange, and reduces potential fratricide. The TACP-M program supports Overseas Contingency Operations (OCO) and significantly increases the mission effectiveness of the TACPs and ASOCs during Operation Enduring Freedom and Operation New Dawn. TACP-M program continues to be instrumental in providing ground communications for TACPs during federal emergency relief operations and Homeland Defense initiatives.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207444F: *Tactical Air Control Party Modernization*	PROJECT 676013: *Equipment Modernizaton*

systems integration software (for dismounted and mounted) for multiple air/ground platforms (e.g. JETS (Target Effects Coordination System [TECS])software development, Small Diameter Bomb II (SDBII), F-35, Mine Resistant Ambush Protected(MRAP)vehicle, Gateway Lite, and ASOC Gateway vehicle and will provide interoperability data links such as Situational Awareness Data Link (SADL), Link-16 and other transformational communications capabilities.

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FY12 efforts include continued development in integrating VCS into additional vehicles, CASS software development for additional interfaces with new weapons, aircraft, C2 nodes, and development of TLDS and TECS through the JETS program office.

The TACP-M program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Vehicular Communications System (VCS) ***Description:*** Design, develop, fabricate, integrate, test, provide associated documentation (e.g. technical manuals) in support of delivering a digital multiple-channel, mobile VCS to replace the aging analog GRC-206 communications pallet. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** Continue development effort to integrate VCS into additional TACP vehicles (e.g. Stryker). Continue investigating additional vehicle types for integration of VCS. This effort requires contractor and engineering support to accomplish the engineering, management and test planning activities. ***FY 2012 OCO Plans:***	-	-	4.343	-	4.343
Title: Close Air Support System (CASS) ***Description:*** CASS Software - Upgrade TACP digital communications mission software to enable machine-to-machine (MTM) interfaces between TACPs and multiple systems (e.g. CAS aircraft, Command and Control (C2) nodes, etc.) Develop new capabilities to satisfy documented requirements to improve battlefield Situational	-	-	5.527	-	5.527

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207444F: *Tactical Air Control Party Modernization*	PROJECT 676013: *Equipment Modernizaton*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Awareness, increase targeting accuracy, reduce the kill chain, and improve data flow/information exchange and reduce fratricide. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** Continue to develop new MTM interfaces with weapons (e.g. Small Diameter Bomb II), new interfaces with Joint Air Ground Integration Cell, C2 Nodes, indirect fires integration, and aircraft across the USAF, Joint (e.g. F-35) and Coalition environment, and satisfy validated warfighter requirements. This effort will include contractor support, engineering support, test and evaluation. This effort also continues to support the Joint Digital Aided Close Air Support (DACAS) initiative to drive all major players in the CAS arena to a common standard. ***FY 2012 OCO Plans:***					
Title: Joint Effect Targeting System (JETS) ***Description:*** JETS is an Army-led program to develop, integrate, and test an integrated CAS targeting system that is smaller, lighter, and more accurate than current systems. JETS consists of two sub-systems: the Target Locations and Designation System (TDLS) that provides target acquisition, high-accuracy target location and laser designation; and the Target Effects Coordination Systems (TECS) that provides connectivity to the digital C4I systems and aircraft. JETS will be incrementally developed where TDLS is Increment 1 and TECS is Increment 2. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** AF funds will continue to support the development of a prototype TLDS system through the JETS program office. The primary TLDS capability requirements are: provide a reduction in hardware weight from current similar systems, provide a highly accurate target location capability. AF funds will also support TECS software development, integration, and testing. This effort includes contractor support, engineering support, and test and evaluation. ***FY 2012 OCO Plans:***	-	-	6.108	-	6.108

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207444F: *Tactical Air Control Party Modernization*	PROJECT 676013: *Equipment Modernizaton*

B. Accomplishments/Planned Programs ($ in Millions)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Accomplishments/Planned Programs Subtotals	-	-	15.978	-	15.978

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207423F: *OPAF*	71.683	132.963	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0207444F: *OPAF*	0.000	0.000	53.839	0.000	53.839	59.502	25.951	24.862	25.260	Continuing	Continuing

D. Acquisition Strategy

TACP-M is executing an incremental development for the TACP CASS software. TACP CASS software systems engineering, design, integration, and fielding support is being provided under a cost plus fixed fee contract. JETS is a joint interest development program managed by the Army.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207444F: *Tactical Air Control Party Modernization*	PROJECT 676013: *Equipment Modernizaton*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CASS Sys Int Software Dev't	C/CPFF	Rockwell Collins:Poway, CA	-	-		2.759	May 2012	-		2.759	Continuing	Continuing	TBD
VCS (GRC-206 Replacement)	C/TBD	TBD:,	-	-		2.423	Feb 2012	-		2.423	Continuing	Continuing	TBD
JETS	MIPR	Army - SSL Division:Ft Belvoir, VA	-	-		6.108	May 2012	-		6.108	Continuing	Continuing	TBD
		Subtotal	-	-		11.290		-		11.290			

Remarks

TACP RDT&E efforts have moved from PE 0207423F, BPAC 674934 effective FY2012.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering	TBD	Not specified.:,	-	-		1.330		-		1.330	Continuing	Continuing	TBD
		Subtotal	-	-		1.330		-		1.330			

Remarks

TACP RDT&E efforts have moved from PE 0207423F, BPAC 674934 effective FY2012.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Agency Support	Various	Various:,	-	-		2.833	Oct 2011	-		2.833	Continuing	Continuing	TBD
		Subtotal	-	-		2.833		-		2.833			

Remarks

Development, operational and interoperability testing

TACP RDT&E efforts have moved from PE 0207423F, BPAC 674934 effective FY2012.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207444F: *Tactical Air Control Party Modernization*	PROJECT 676013: *Equipment Modernizaton*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support	Various	Not specified.:,	-	-		0.525	Jan 2012	-		0.525	Continuing	Continuing	TBD
		Subtotal	-	-		0.525		-		0.525			

Remarks

TACP RDT&E efforts have moved from PE 0207423F, BPAC 674934 effective FY2012.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		15.978		-		15.978			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207444F: *Tactical Air Control Party Modernization*	PROJECT 676013: *Equipment Modernizaton*

[redacted]

U.S. AIR FORCE

TACP-M Program Schedule

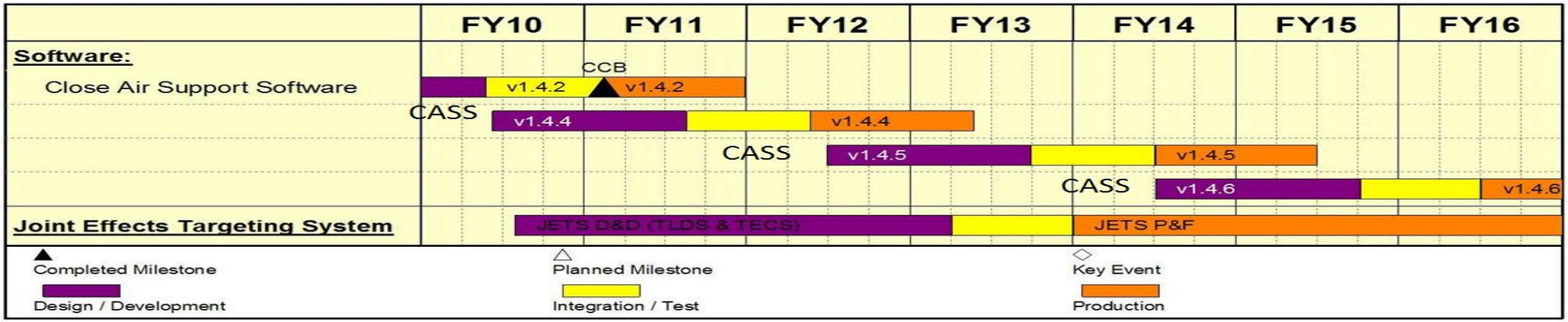

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207444F: *Tactical Air Control Party Modernization*	PROJECT 676013: *Equipment Modernizaton*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Close Air Support System (CASS) v1.4.2	1	2010	4	2011
Close Air Support System (CASS) v1.4.4	2	2010	2	2013
Close Air Support System (CASS) v1.4.5	3	2012	3	2015
Close Air Support System (CASS) v1.4.6	3	2014	4	2016
Joint Effects Targeting Systems	3	2010	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207445F: *FIGHTER TACTICAL DATA LINK*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	66.592	85.492	-	-	-	-	-	-	-	Continuing	Continuing
675043: *Fighter Tactical Data Link*	66.592	85.492	-	-	-	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

Tactical Data Links (TDL), as a subset of the broader Aerial Layer Network, are used in both peace time and combat environments to exchange information such as fixed formatted messages, data, radar tracks, target information, platform status, imagery, free text messaging and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs increase mission effectiveness, providing enhanced situational awareness, positive combat identification of aircraft in the network, correlation of on- and off-board sensor data, digital machine to machine target and threat information sharing; enabling time critical targeting and other mission assignment tasking. TDLs are used by all Service Theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include, but are not limited to: Link 16, Link 11, Situational Awareness Data Link (SADL), Variable Message Format (VMF), Intra-Flight Data Link (IFDL), and other Advanced Tactical Data Link technologies, such as Tactical Targeting Network Technology (TTNT), and Multifunction Advanced Data Link (MADL).

This effort provides critical capability and enhancements to the Aerial Layer Network by creating common development, integration and interoperability among all Air Force fighter platforms including but not limited to A-10, F-15A-E, F-16 Blocks 30/40/50, F-22A, and F-35 aircraft. The funds associated with the Fighter TDL PE ensure the Air Force (AF) fighter fleet maintains standardization; develops interoperable data link exchanges; and enables Global Strike (GS), Global Persistent Attack (GPA), Offensive and Defensive Counterair (OCA and DCA), Suppression of Enemy Air Defenses (SEAD), and Destruction of Enemy Air Defenses (DEAD) missions. Incorporation of TDLs on the fighter fleet also expands Line of Sight (LOS) and Beyond Line of Sight (BLOS) data link connectivity. Additional efforts aimed at maintaining interoperability amongst the platforms in this portfolio include: AF and Joint interoperability certification testing, waveform crypto modernization, updates to the Link-16 message standard (MIL-STD-6016D) and integration of applicable Interface Change Proposals (ICPs) within platform Operational Flight Programs and incorporating Interoperable Systems Management and Requirements Transformation (iSMART); a process which enables network centric interoperability assessments to be made more quickly and effectively.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

Fighter Tactical Data Link program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207445F: *FIGHTER TACTICAL DATA LINK*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	66.872	85.492	169.748	-	169.748
Current President's Budget	66.592	85.492	-	-	-
Total Adjustments	-0.280	-	-169.748	-	-169.748
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.280	-	-169.748	-	-169.748

Change Summary Explanation

FY12 funding realigned to higher AF priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207445F: *FIGHTER TACTICAL DATA LINK*	PROJECT 675043: *Fighter Tactical Data Link*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675043: *Fighter Tactical Data Link*	66.592	85.492	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Tactical Data Links (TDL), as a subset of the broader Aerial Layer Network, are used in both peace time and combat environments to exchange information such as fixed formatted messages, data, radar tracks, target information, platform status, imagery, free text messaging and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs increase mission effectiveness, providing enhanced situational awareness, positive combat identification of aircraft in the network, correlation of on- and off-board sensor data, digital machine to machine target and threat information sharing; enabling time critical targeting and other mission assignment tasking. TDLs are used by all Service Theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include, but are not limited to: Link 16, Link 11, Situational Awareness Data Link (SADL), Variable Message Format (VMF), Intra-Flight Data Link (IFDL), and other Advanced Tactical Data Link technologies, such as Tactical Targeting Network Technology (TTNT), and Multifunction Advanced Data Link (MADL).

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Fighter Tactical Data Link program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: F-22A Advanced Tactical Data Link (ATDL)	47.163	57.000	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207445F: *FIGHTER TACTICAL DATA LINK*	PROJECT 675043: *Fighter Tactical Data Link*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Develop and integrate Dual Processing module, display upgrades and multi-purpose (MPM) electronic warfare module that are required to integrate an advanced tactical data link onto the F-22A. ***FY 2010 Accomplishments:*** Continued Pre-Phase A risk reduction, began Phase A Requirements Definition and conducted System Requirements Review for MADL on F-22A. Continued hardware and software development for radio, processor and crypto processor modules. Defined MADL information exchange requirements and waveform enhancements for consideration of inclusion in F-22A Inc 3.2. ***FY 2011 Plans:*** Continue hardware design of Dual Processing module, display upgrades and multi-pupose (MPM) electronic warfare module to be included in F-22A 3.2. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***					
Title: TDL Enterprise ***Description:*** Develop a well-documented, interoperable data link capability for Low Observable platforms in the anti access region. Explore options to enable interoperability between 4th & 5th generation fighters. ***FY 2010 Accomplishments:*** Matured initial documentation, including a waveform specification. Explored waveform improvements. Developed the initial MADL Message Standard with the content, formats and protocols for Increment 1 capability. Increased the fidelity of modeling and simulation capabilities to support decision making, expectation setting and employment procedures. Began to develop a test and evaluation strategy for MADL. Documented the initial Information Assurance Strategy from an enterprise perspective. Evaluated the maturity of MADL technologies. ***FY 2011 Plans:*** Finalize the Waveform Specification for the MADL Increment 1 capability. Begin development of a new MADL Message Standard revision for future MADL increments/capabilities. Continue to use modeling and simulation capabilities to develop MADL employment procedures and assess the mission utility of future MADL capabilities. Monitor Test and Evaluation activities on the F-35 and F-22A for MADL interoperability test planning. Explore	13.385	22.601	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207445F: *FIGHTER TACTICAL DATA LINK*	PROJECT 675043: *Fighter Tactical Data Link*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
options for 4th to 5th generation fighter interoperability. Continue to develop a MADL enterprise Information Assurance strategy. Develop a roadmap for technology evolution. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***					
Title: Direct Support ***Description:*** Fighter Tactical Data Link system engineering analysis, development, testing, integration, and technical support of common Fighter data link technology and capabilities. ***FY 2010 Accomplishments:*** Funds provided PMA in direct support of F-22A Advanced TDL development and MADL Enterprise. ***FY 2011 Plans:*** Funds will provide PMA in direct support of F-22A Advanced TDL development and MADL Enterprise. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***	6.044	5.891	-	-	-
Accomplishments/Planned Programs Subtotals	66.592	85.492	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207448F: *C2ISR TDL, RDT&E AF*	1.604	1.584	1.536	0.000	1.536	1.626	1.650	1.674	1.703	Continuing	Continuing
• PE 0604281F: *TDN Enterprise, RDT&E AF*	160.316	102.941	52.355	0.000	52.355	32.351	37.081	30.846	31.438	Continuing	Continuing
• PE 0207445F: *Fighter TDL, APAF*	9.585	0.929	0.741	0.000	0.741	0.000	14.609	14.610	14.361	Continuing	Continuing
• PE 0207446F: *Bomber TDL, APAF*	0.000	0.000	0.000	0.000	0.000	0.000	1.796	1.756	1.509	Continuing	Continuing
• PE 0207448F (4): *C2ISR TDL, APAF*	0.000	0.000	0.957	0.000	0.957	0.910	0.925	1.726	1.756	Continuing	Continuing
	18.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207445F: *FIGHTER TACTICAL DATA LINK*	PROJECT 675043: *Fighter Tactical Data Link*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0604281F (5): *TDN Enterprise, APAF*											
• PE 0207448F (6): *C2ISR TDL, OPAF*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.732	15.464	Continuing	Continuing
• PE 0604281F (7): *TDN Enterprise, OPAF*	34.613	21.742	10.498	0.000	10.498	0.269	0.248	0.169	0.170	Continuing	Continuing
• PE 0207434F: *Link 16 Support & Sustainment, O&M AF*	18.621	0.000	0.000	0.000	0.000	0.000	1.766	3.333	5.391	Continuing	Continuing
• PE 0207445F (9): *Fighter TDL, O&M AF*	0.155	0.221	0.217	0.000	0.217	0.246	0.248	0.253	0.259	Continuing	Continuing
• PE 0401839F: *Air Mobility TDL, O&M AF*	7.862	7.892	2.054	0.000	2.054	0.112	0.149	1.338	1.365	Continuing	Continuing
• PE 0604281F (11): *TDN Enterprise, O&M AF*	261.763	31.318	39.867	0.000	39.867	33.886	36.705	37.662	38.612	Continuing	Continuing

D. Acquisition Strategy

Airborne Networking Division provides for common development, integration and interoperability across all Air Force platforms and ensures that Tactical Data Links are procured and maintained as a joint, end-to-end, command and control system. Platform acquisition strategies vary by program, but the majority of development and integration is normally accomplished by the weapon system prime contractors

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207445F: *FIGHTER TACTICAL DATA LINK*	PROJECT 675043: *Fighter Tactical Data Link*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
F-22A Advanced Tactical Data Link Development and Integration	Various	Lockheed Martin:Fort Worth, TX	338.636	57.000	Apr 2011	-		-		-	Continuing	Continuing	TBD
TDL Enterprise	Various	Various:Various,	22.202	22.601	Apr 2011	-		-		-	Continuing	Continuing	TBD
		Subtotal	360.838	79.601		-		-		-			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Common Fighter Data Link Support	Various	Various:Various,	24.069	5.891	Oct 2010	-		-		-	Continuing	Continuing	TBD
		Subtotal	24.069	5.891		-		-		-			

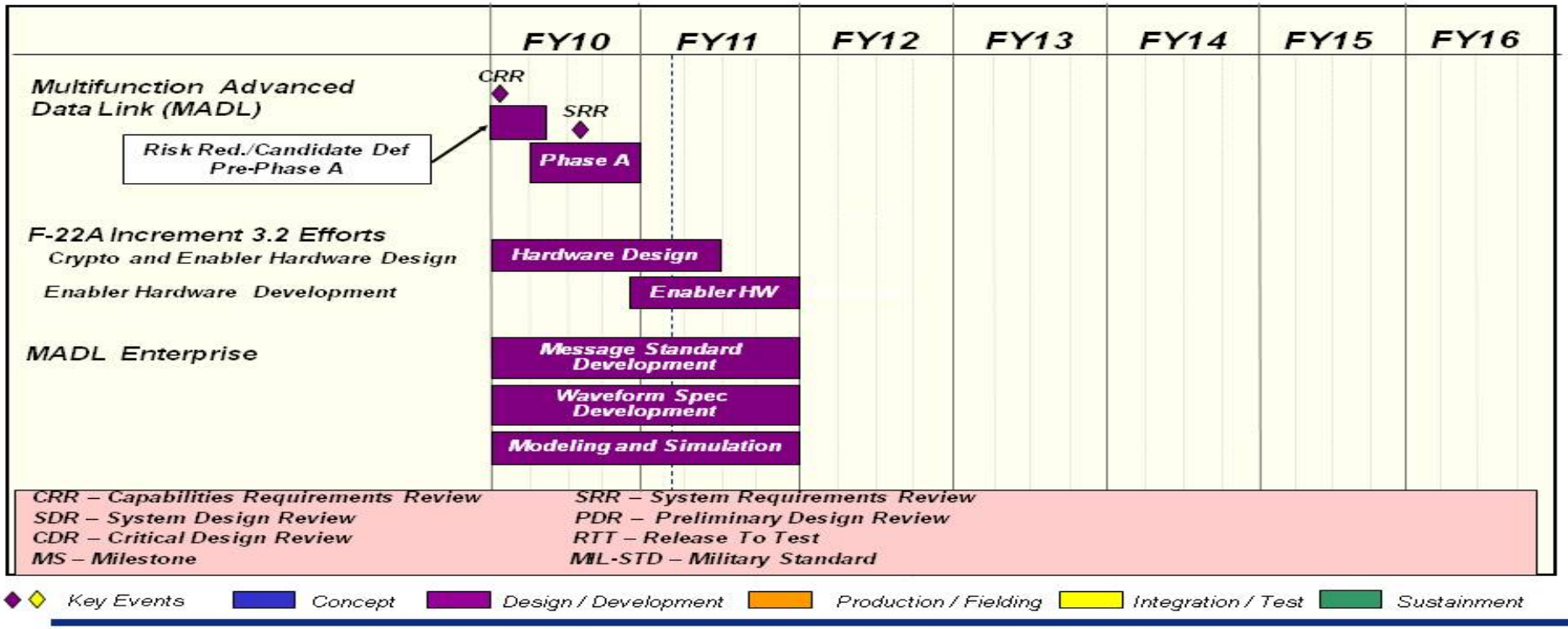
	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	384.907	85.492		-		-		-			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207445F: *FIGHTER TACTICAL DATA LINK*	PROJECT 675043: *Fighter Tactical Data Link*	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Remarks								

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207445F: *FIGHTER TACTICAL DATA LINK*	PROJECT 675043: *Fighter Tactical Data Link*

F-22 ATDL/MADL Enterprise Schedule as of 30 Nov 10



Integrity - Service - Excellence

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207445F: *FIGHTER TACTICAL DATA LINK*	**PROJECT** 675043: *Fighter Tactical Data Link*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
F-22A MADL Risk Reduction and Candidate Definition Pre-Phase A	1	2010	2	2010
F-22A Capabilities Requirements Review	1	2010	1	2010
F-22A MADL Requirements Development Phase A	2	2010	4	2010
F-22A MADL Systems Requirements Review	3	2010	3	2010
F-22A Crypto and Enabler Hardware (HW) Design	1	2010	2	2011
F-22A Enabler HW Development	4	2010	4	2011
MADL Enterprise Message Standard Development	1	2010	4	2011
MADL Enterprise Waveform Spec Development	1	2010	4	2011
MADL Enterprise Modeling and Simulation	1	2010	4	2011

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207448F: *C2ISR Tactical Data Link*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	1.604	1.584	1.536	-	1.536	1.626	1.650	1.674	1.703	Continuing	Continuing
675045: *C2ISR Tactical Data Link*	1.604	1.584	1.536	-	1.536	1.626	1.650	1.674	1.703	Continuing	Continuing

A. Mission Description and Budget Item Justification

Tactical Data Links (TDL), as a subset of the broader Airborne Network, are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs provide a jam-resistant; secure digital data transfer network capability with new and standardized waveforms and data formats allowing Line of Sight (LOS) and Beyond Line of Sight (BLOS) intra- and inter-flight communications. TDLs increase mission effectiveness, provide situational awareness, and provide positive identification of aircraft in the network, correlate on- and off-board sensor data sharing, target, and threat information, and provide the datalink to accomplish time critical targeting and other mission update functions. TDLs are used by all Service theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include, but are not limited to: Link 16, Link 11, Situational Awareness Data Link (SADL), Variable Message Format (VMF), Integrated Broadcast Service (IBS), Intra-Flight Data Link (IFDL), and Tactical Targeting Network Technology (TTNT). TDL efforts include incorporating changes and additions to the Link-16 message standard (MIL-STD-6016D) and applicable Interface Change Proposals (ICPs), assisting with AF and Joint interoperability certification testing with the Air Force Command and Control Integration Center (AFC2IC) and Joint Interoperability Test Center (JITC); future development, integration, and verification of Operational Flight Program (OFP) upgrades due to TDL integration; support of data gathering processes; studying and incorporating data link technologies to ensure effectiveness and efficiency of the Global Strike and Global Persistent Attack CONOPS. This effort provides critical capability and enhancements to the Airborne Network by creating common development, integration and interoperability among ground and C2 platforms and responds to Quick Reaction Capability integration and demonstration including, but not limited to Airborne Warning and Control System (AWACS), Joint Surveillance Target Attack Radar System (JSTARS), the Air and Space Operations Center (AOC), Global Hawk, Predator, Reaper, Rivet Joint, Combat Sent, and Cobra Ball. TDLs keep all C2ISR Platforms and data linked weapons current/interoperable in the Airborne Network to enable Global Strike (GS), Global Persistent Attack (GPA), Offensive and Defensive Counterair (OCA and DCA) and Suppression of Enemy Air Defenses (SEAD) missions. Activities also include studies and analysis to support both current program planning and execution and future program planning to include the period of dual E-3 AWACS mission configuration ending in FY15.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207448F: *C2ISR Tactical Data Link*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	1.659	1.584	1.608	-	1.608
Current President's Budget	1.604	1.584	1.536	-	1.536
Total Adjustments	-0.055	-	-0.072	-	-0.072
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.048	-			
• Other Adjustments	-0.007	-	-0.072	-	-0.072

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207448F: *C2ISR Tactical Data Link*	PROJECT 675045: *C2ISR Tactical Data Link*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675045: *C2ISR Tactical Data Link*	1.604	1.584	1.536	-	1.536	1.626	1.650	1.674	1.703	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Tactical Data Links (TDL), as a subset of the broader Airborne Network, are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs provide a jam-resistant; secure digital data transfer network capability with new and standardized waveforms and data formats allowing Line of Sight (LOS) and Beyond Line of Sight (BLOS) intra- and inter-flight communications. TDLs increase mission effectiveness, provide situational awareness, and provide positive identification of aircraft in the network, correlate on- and off-board sensor data sharing, target, and threat information, and provide the datalink to accomplish time critical targeting and other mission update functions. TDLs are used by all Service theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include, but are not limited to: Link 16, Link 11, Situational Awareness Data Link (SADL), Variable Message Format (VMF), Integrated Broadcast Service (IBS), Intra-Flight Data Link (IFDL), and Tactical Targeting Network Technology (TTNT). TDL efforts include incorporating changes and additions to the Link-16 message standard (MIL-STD-6016D) and applicable Interface Change Proposals (ICPs), assisting with AF and Joint interoperability certification testing with the Air Force Command and Control Integration Center (AFC2IC) and Joint Interoperability Test Center (JITC); future development, integration, and verification of Operational Flight Program (OFP) upgrades due to TDL integration; support of data gathering processes; studying and incorporating data link technologies to ensure effectiveness and efficiency of the Global Strike and Global Persistent Attack CONOPS. This effort provides critical capability and enhancements to the Airborne Network by creating common development, integration and interoperability among ground and C2 platforms and responds to Quick Reaction Capability integration and demonstration including, but not limited to Airborne Warning and Control System (AWACS), Joint Surveillance Target Attack Radar System (JSTARS), the Air and Space Operations Center (AOC), Global Hawk, Predator, Reaper, Rivet Joint, Combat Sent, and Cobra Ball. TDLs keep all C2ISR Platforms and data linked weapons current/interoperable in the Airborne Network to enable Global Strike (GS), Global Persistent Attack (GPA), Offensive and Defensive Counterair (OCA and DCA) and Suppression of Enemy Air Defenses (SEAD) missions. Activities also include studies and analysis to support both current program planning and execution and future program planning to include the period of dual E-3 AWACS mission configuration ending in FY15.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: C2ISR Tactical Data Link Integration - TCS/TACPod Assessment	1.604	-	-	-	-
Description: This effort seeks to address emerging COCOM communications shortfalls through rapid prototyping, demonstration, and operational assessment of the voice and data range extension and voice bridging capabilities of a Tactical Communication Suite integrated into a pod.					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207448F: *C2ISR Tactical Data Link*	PROJECT 675045: *C2ISR Tactical Data Link*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: This effort is to integrate, demonstrate, and assess the operational utility of one or more airborne Tactical Airborne Communications Pods (TACPod) on platforms which may include one or more of the following based upon availability: manned aircraft, Remotely Piloted Aircraft (MQ-1, MQ-9, or surrogate), AEROSTAT variants, and/or Lighter-Than-Airships (LTAs). ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***					
Title: C2ISR Data Link Integration and AWACS Block 30/35 Software Enhancements ***Description:*** Improve AWACS Block 30/35 Link 16 interoperability and compatibility by incorporating key changes to communications software baseline. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** Mode 5 Data Exchange: Accomplish technical tasks associated with the IFF Mode 5 Data Exchange effort (ICP Number TM03-068) leading to products such as a Delta Change Package, Design Interface Papers, software modules, Integration Test Report (ITR), and IFF Mode 5 Data Exchange compliance documentation. ***FY 2012 Base Plans:*** C2ISR Data Link Strength Track Reporting: Implementation of Strength Track Reporting improves situation awareness by ensuring consistency in the initiation and handling of air track in instances where single tracks are reported on the network but it is known that these tracks actually represent more than one aircraft moving as a formation. ***FY 2012 OCO Plans:***	-	1.584	1.536	-	1.536
Accomplishments/Planned Programs Subtotals	1.604	1.584	1.536	-	1.536

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207448F: *C2ISR Tactical Data Link*	PROJECT 675045: *C2ISR Tactical Data Link*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207445F: *Fighter TDL RDT&E AF*	66.592	85.492	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0604281F: *TDN Enterprise RDT&E AF*	160.316	102.941	52.355	0.000	52.355	32.351	37.081	30.846	31.438	Continuing	Continuing
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• PE 0207448F: *C2ISR TDL APAF*	0.000	0.000	0.957	0.000	0.957	0.910	0.925	1.726	1.756	Continuing	Continuing
• PE 0604281F (5): *TDN Enterprise APAF*	18.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0207448F (6): *C2ISR TDL OPAF*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.732	15.464	Continuing	Continuing
• PE 0604281F (7): *TDN Enterprise OPAF*	34.613	21.742	10.498	0.000	10.498	0.269	0.248	0.169	0.170	Continuing	Continuing
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• PE 0207445F (9): *Fighter TDL O&M AF*	0.155	0.221	0.217	0.000	0.217	0.246	0.248	0.253	0.259	Continuing	Continuing
• PE 0401839F: *Air Mobility TDL O&M AF*	7.862	7.892	2.054	0.000	2.054	0.112	0.149	1.338	1.365	Continuing	Continuing
• PE 0604281F (11): *TDN Enterprise O&M AF*	261.763	31.318	39.867	0.000	39.867	33.886	36.705	37.662	38.612	Continuing	Continuing

D. Acquisition Strategy

The Airborne Networking Division provides for common development, integration and interoperability across the entire Airborne Network and ensures that TDLs are procured and maintained as a joint, end-to-end, command and control system. Platform acquisition strategies vary by program, but the majority of development and integration is normally accomplished by the weapon system prime contractor.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207448F: *C2ISR Tactical Data Link*	PROJECT 675045: *C2ISR Tactical Data Link*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AWACS - Mode 5 Data Exchange	SS/Various	Boeing:Seattle, WA	-	1.020	May 2011	-		-		-	Continuing	Continuing	TBD
AWACS - Strength Track Reporting	SS/Various	Boeing:Seattle, WA	-	-		1.110	Nov 2011	-		1.110	Continuing	Continuing	TBD
TCS/TACPod	SS/TBD	Ultra Electronics:San Antonio, TX	0.842	-		-		-		-	Continuing	Continuing	TBD
		Subtotal	0.842	1.020		1.110		-		1.110			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office and Contractor Support	Various	Various:Various,	1.079	0.564	Feb 2011	0.426	Feb 2012	-		0.426	Continuing	Continuing	TBD
		Subtotal	1.079	0.564		0.426		-		0.426			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207448F: *C2ISR Tactical Data Link*	PROJECT 675045: *C2ISR Tactical Data Link*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.921	1.584		1.536		-		1.536			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207448F: *C2ISR Tactical Data Link*	PROJECT 675045: *C2ISR Tactical Data Link*

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C2ISR Program Schedule

as of 31Dec 10

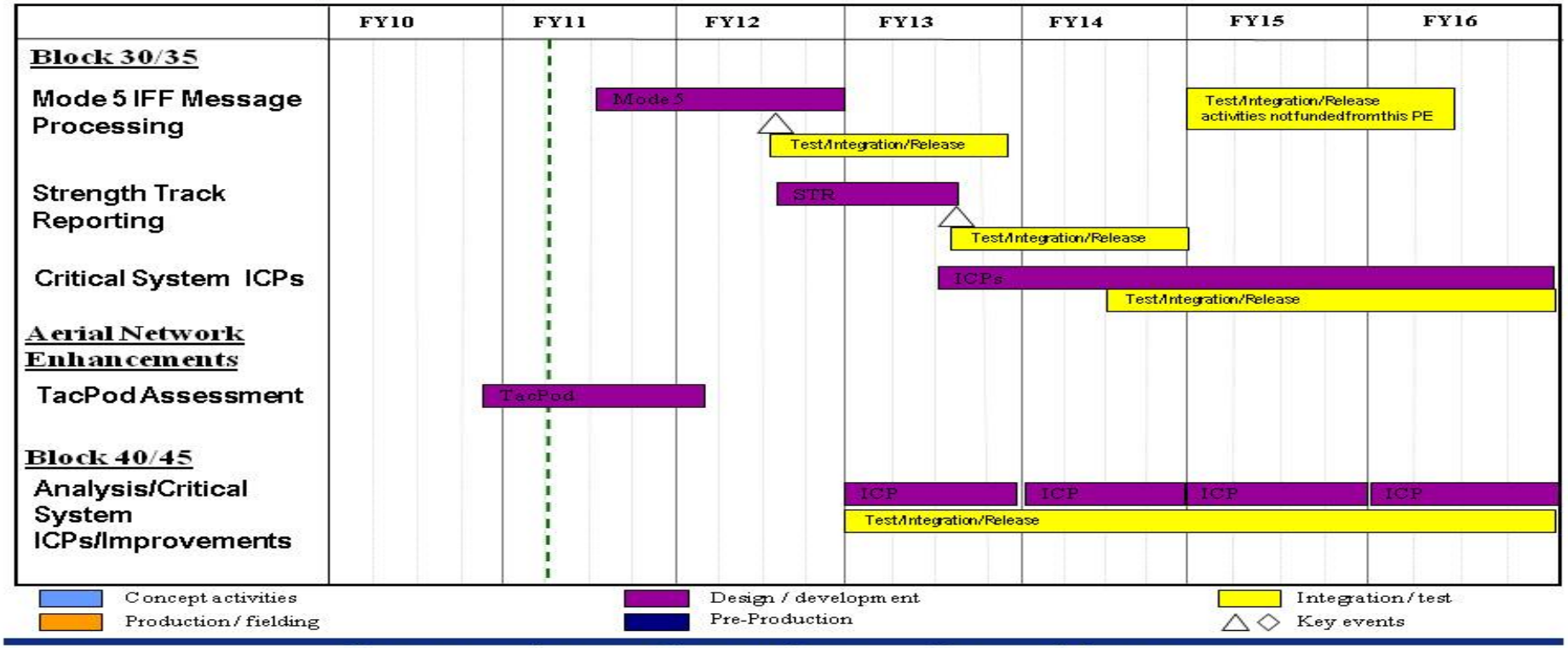

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207448F: *C2ISR Tactical Data Link*	**PROJECT** 675045: *C2ISR Tactical Data Link*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Mode 5 IFF Message Processing	3	2011	4	2012
Strength Track Reporting	3	2012	3	2013
Critical System ICPs	3	2013	4	2016
TacPod Assessment	4	2010	1	2012
Analysis/Critical System ICPs/Improvements	1	2013	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	29.378	24.229	18.102	-	18.102	18.113	16.869	-	-	Continuing	Continuing
675078: *Horizontal Integration*	15.356	10.863	8.365	-	8.365	8.522	8.516	-	-	Continuing	Continuing
675140: *Joint Expeditionary Force Experiments*	14.022	13.366	9.737	-	9.737	9.591	8.353	-	-	Continuing	Continuing

Note

The program funding includes reductions for efficiencies that are not intended to impact program content. The efficiencies reductions total $2.262M in FY12.

A. Mission Description and Budget Item Justification

The Command and Control Constellation (C2C) is the primary Air Force program for defining, developing and assessing integrated effects of global, theater and tactical level Air Force air, space and cyber Command and Control (C2) capabilities in support of the joint warfighter. The Air Force faces a complex future where conflict will range across a broad spectrum of operations and lethality. The Air Force requires capabilities with the maximum possible flexibility to deal with the widest possible range of conflict. The black and white distinction between irregular war and conventional war is an outdated model. Near-peers will use irregular or asymmetric tactics that target traditional strengths. Irregular warfare brings non-conventional adversaries that require non-conventional approaches for defeating them. The C2C is the enabling PE for future C2 Integration/Modernization. The Air Force is working to establish a C2 Framework to be used as a unifying vision of command and control for each of the services core functions and core function master plans. C2C will support the C2 Framework by providing a venue for prototyping, experimentation and innovation to develop non-conventional solutions and enable an improved "sense-to-kill" cycle time. C2C innovations and experimentation provides strategic, operational, and tactical direction for Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) solutions to facilitate the integration of Global Effects that support Command and Control, Intelligence, Surveillance and Reconnaissance (C2ISR) planning and execution for air, space, and cyberspace. In-depth development and analyses of C2C operational, systems, and technical architectures are geared towards identifying capability gaps, identifying required "TO BE" information services, and evaluating Command and Control, Intelligence, Surveillance and Reconnaissance (C2ISR) program planned improvements. Through prototyping and experimentation, C2C will integrate rapidly developing technologies to promote common standards, data sharing and information services across Air Force and joint warfighting applications to support a networkcentric, joint enterprise solution to address these findings. C2C innovations will develop consistent with the Joint Airborne Layer Network (JALN) Initial Capabilities Document.

Project 5078, Horizontal Integration (HI) conducts DOTMLPF analysis and assessments to guide cross-cutting net-centric, C2ISR sub-enterprise and cyberspace investment decisions that integrate USAF capabilities into joint and coalition operations. HI identifies, prioritizes, and develops horizontally integrated solution recommendations to ensure the latest technologies and information services are integrated into a cross cutting net centric C2 system that enables integrated Global Effects in all warfighter domains. The Fiscal Year 2012 strategy will be validated by HQ AF/A3 and AF/A5 to ensure that initiatives are harmonized with the most urgent warfighter needs described in the Air Force Capabilities Review and Risk Assessment and the Joint Forces Command Warfighter challenge program. Once validated, HI funds are applied toward identifying the most critical warfighter capabilities and ensuring they are horizontally integrated into both Air Force and Joint C2ISR programs of record.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207449F: *C2 Constellation*

Project 5140, Joint Expeditionary Force Experiments (JEFX) has transitioned from a large biennial warfighting experiment to more agile, smaller and frequent innovation-focused experiments leading to pre-fielding operational assessments. Constructive, live-fly and virtual force operationally representative warfighter environments are created to focus on critical C2ISR areas of interest that support the Joint warfighter. This includes C2ISR innovation that supports the air, space and cyberspace domains. JEFX provides a vehicle for experimentation with emerging operational concepts and attendant new technologies that fill operational gaps in Air Force capabilities to meet emerging real world threats. The JEFX strategy is validated by Headquarters Air Combat Command (HQ ACC) and coordinated with AF/A3 and A5 ensuring initiatives are harmonized with the most urgent warfighter needs described in the Air Force Capabilites Review Risk Assessement and the Joint Forces Command Warfighter Challenge Program. JEFX themes are based on emerging CONOPS and warfighter challenges. JEFX initiatives are important enablers of innovation and transformation and are designed to support the themes and demonstrate emerging Air Force capabilities to deploy and employ decisive air, space and cyberspace power in support of the Joint Force.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	30.293	24.229	21.924	-	21.924
Current President's Budget	29.378	24.229	18.102	-	18.102
Total Adjustments	-0.915	-	-3.822	-	-3.822
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.787	-			
• Other Adjustments	-0.128	-	-3.822	-	-3.822

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: 675078: *Horizontal Integration*		
Congressional Add: *Global Air Presentation System/Airborne Web Services (GAPS/AWS) Horizontal Integration*	3.922	-
Congressional Add Subtotals for Project: 675078	3.922	-
Congressional Add Totals for all Projects	3.922	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207449F: *C2 Constellation*

Change Summary Explanation

In FY 2012: The program has been funded to latest cost estimate, less efficiencies. The reduction for efficiencies is not intended to impact program content. Reductions for efficiencies in FY 2010 through 2014 are not intended to impact program content. Reductions for efficiencies may be spread to other Air Force programs at a later date. Amounts of the reductions are: $2.262M/FY12, $1.560M (Cursor-on-Target)/FY12, $2.493M/FY13, $2.794M/FY14, $17.465M/FY15, $17.866M/FY16.

In FY 2012-2016, $7.774M from Project 5078, Horizontal Integration, transferred to PE 064281F, Tactical Data Networks, to support Cursor-on-Target (CoT) efforts.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675078: *Horizontal Integration*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675078: *Horizontal Integration*	15.356	10.863	8.365	-	8.365	8.522	8.516	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Project 5078, Horizontal Integration (HI), is established to develop a Global Effects integrated capability to support cross-cutting net-centric solutions across air, space and Cyberspace C2ISR Warfighter domain. HI activities include studies and analysis, technology development, risk reduction, prototyping, experimentation and transition. These activities are required to identify, design, develop, experiment and implement C2ISR solutions supporting warfighting integration and interoperability needs which are not the sole responsibility of a specific program of record. The nature of integrated and interoperable C2ISR warfighting capabilities span multiple platforms and domains; these capabilities are routinely overlooked by traditional programs dedicated to supporting the requirements of specific warfighting communities. The HI Project is uniquely designed to look across these platforms and domains, which enables the Air Force to respond to the needs across the seams of individual systems. These horizontal integration initiatives will be prototyped, assessed, appropriately captured in requirements documents and then transitioned to programs of record for production, fielding and sustainment. Systems Engineering and Analysis is the 'glue' that holds C2C elements together, and closes the seams in the Command, Control, Communications Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) architectures. Capability analysis identifies areas where interoperability can be improved within the Air Force, among joint services, and among coalition partners. Once capability issues are identified, they are prioritized and pilot initiatives are developed to provide solutions to the warfighter challenges that resolve the capability gaps. The HI Project also helps to competitively prototype integrated solutions against validated program requirements. The benefits of this activity are two-fold: the operational community is able to weigh the cost, risk, and performance trade-offs between enterprise solutions versus program centric solutions; and the activity supports the DoDI 5000.02 requirement for competitive prototyping for all ACAT programs. The synchronization of HI prototyping and program milestone requirements offers an effective environment for increasing interoperability while reducing the impact of this policy on multiple pre-milestone B programs. Modeling and Simulation (M&S) Infrastructure and Experimentation leverage existing government/industry simulation sites that allow 'virtual' assessments of the C2 Constellation. This Infrastructure environment manages a continuous distributed operational environment that supports air, space, and cyberspace C2ISR and rapid acquisition, prototyping, development, integration, and fielding. C2ISR initiatives use this infrastructure to mature their development status prior to entry into JEFX for final operational assessment. The HI prototype performances are assessed for operational utility; the most promising initiatives/technologies will be matured and transitioned into weapon system configuration control baselines. Requirements documents will be published and revised, and a requirements database and implementation plan identifying the most significant C2C net-centric integration issues will be updated to catalog the activities necessary to accomplish this integration. This program is in Budget Activity 7 - Operational System Development because it provides developers, testers and warfighters a way to experiment, analyze, and explore operational concepts and new technologies to enhance operational system developments and improve future capabilities leading to a horizontally integrated C2ISR Warfighter Sub-enterprise.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Reqmts and CBP	4.320	3.440	2.650	-	2.650
Description: Requirements/Capabilites Based Planning (CBP)					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675078: *Horizontal Integration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Continue CBP efforts. ***FY 2011 Plans:*** Will develop and document integrated Command and Control (C2) requirements for integrated air and missile defense. Will analyze and document emerging Air Force (AF) C2 requirements. Focus on the Future C2 Integration/Modernization Strategy. Namely integration of material sources with theater support in the Langley Air Force Base Operations Support Center (OSF). Concentrating efforts on Integrated Operating Environment (IOE) Space, IOE Electronic Warfare Battle Management, IOE Targeting, IOE Agile Combat Support and Joint Air Ground Integration Cell (JAGIC). ***FY 2012 Base Plans:*** Refine integrated Air and Missile Defense C2 requirements. Continue Future C2 Integration/Modernization Strategy. ***FY 2012 OCO Plans:***					
Title: Arch and SE ***Description:*** Architecture Development and Systems Engineering ***FY 2010 Accomplishments:*** Continued to participate in and support planning for the Joint Air Ground Integration Cell (JAGIC) functional analysis. Work with the Army, AF & USMC as well as ESC/XR and Joint Expeditionary Force Experiment (JEFX) to produce a plan that identifies scope of the analysis assumptions, functions to be addressed, scenarios to be analyzed, and measures to be assessed. ***FY 2011 Plans:*** Efforts will continue in support of functional and engineering analysis within the C2ISR community, with specific emphasis on Air-Ground Modernization, C2 of ISR Integration, Dynamic ISR management, and C2 of Cyber. ***FY 2012 Base Plans:*** Technical expertise supporting functional and engineering analysis within the C2ISR community will continue, with specific emphasis on Air-Ground Modernization, C2 of ISR Integration, Dynamic ISR management, and C2 of Cyber. ***FY 2012 OCO Plans:***	0.406	0.499	0.364	-	0.364

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675078: *Horizontal Integration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Analysis Integ and SE ***Description:*** Analysis Integration and Systems Engineering ***FY 2010 Accomplishments:*** Work on improved Battle Damage Assessment (iBDA), which is an effort that provides near-real time Phase 1 BDA information by culling munitions and asset data from Link-16, associating it with target and asset information in the ATO and producing a Joint Munitions Effectiveness Manual (JMEM) probability of destruction. The effort will come to completion and transition to a Program of Record (PoR). Efforts remaining are code clean up and documentation, which will be necessary in order to transition to a Program of Record. ***FY 2011 Plans:*** Analysis and integration efforts will continue. Specific focus areas and efforts to be piloted will depend on real world needs and C2/ISR enterprise PoR requirements. Will continue analysis and transition of prototype capability developed in previous years. ***FY 2012 Base Plans:*** Analysis and integration efforts will continue. Specific focus areas and efforts to be piloted will depend on real world needs, C2/ISR enterprise and C2 of Cyber PoR requirements. Will continue analysis and transition of prototype capability developed in previous years. ***FY 2012 OCO Plans:***	0.506	0.805	0.519	-	0.519
Title: Ops-Tech Analysis-Concept Dev't ***Description:*** Ops/Tech Analysis and Concept Development ***FY 2010 Accomplishments:*** Space/Cyber. Develop FY12 Science and Technology Program Objective Memorandum inputs based on analysis of critical Numbered Air Force's capability shortfalls. Develop and assess prototype solutions for integration of non-kinetic "strike effects" capabilities into an integrated mission package. Develop and assess cyber C2 IOE integration concepts and space situational awareness capabilities in support of theater planning and execution. ***FY 2011 Plans:*** Area Air Forces Forward. Will develop and prototype a capability for in transit visibility of Global Strike assets for 8AF. Will develop an Integrated Operational Environment capability for improved mobility force integration	2.687	2.623	1.533	-	1.533

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675078: *Horizontal Integration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
supporting theater planning efforts. Will investigate a multi-level security solution to planning integrated ISR mobility and weather data in support of political/military operations. Continue Developing an Integrated Operating Environment concept to guide AF integration of Command and Control (C2) and provide the necessary material and non-material capabilities to enable the effective and efficient cross-functional domain flow of monitoring, assessment, planning and execution data. ***FY 2012 Base Plans:*** Support synchronized modernization of TACS and global C2 center (JSPOC, TACC, AFSTRAT AOC, etc) programs. Enable a collaborative Integrated Operating Environment (IOE) to present , plan and execute AF capabilities in support of Joint operations. Improve real time information exchange through the planning and execution phases. ***FY 2012 OCO Plans:***					
Title: M&S, Infrastructure and Expt ***Description:*** M&S Infrastructure and Experimentation ***FY 2010 Accomplishments:*** Re-use M&S infrastructure tools/systems in experimentation venues for further refinement of Tactic, Techniques and Procedures for Joint Warfighters. ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***	-	-	-	-	-
Title: HI Solutions Assessments ***Description:*** Horizontal Integration Solutions Assessment ***FY 2010 Accomplishments:*** In order to foster enterprise integration across C2ISR programs and support the DoDI 5000.02 requirement for competitive prototyping, initiatives were selected for execution in FY10. Three prototyping efforts have been selected for execution: continuation of the Unmanned Aircraft Systems (UAS) C2 efforts under the MAESTRO initiative; prototyping an Air Mission Information Service (AMIS) under the guidance of the AO COI that will support deliberate and immediate mission planning; and prototyping an improved ISR management/visualization	3.515	3.496	3.299	-	3.299

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675078: *Horizontal Integration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
tool based on SOA technology. Additional program increase of $3.5M is intended to support development of Global Air Presentation System (GAPS) and Airborne Web Services (AWS) for C2C. ***FY 2011 Plans:*** Initiatives are selected for execution that will foster enterprise integration across C2ISR programs and support the DoDI 5000.02 requirement for competitive prototyping. A data call was issued in third quarter FY10 and the initiatives selected for funding in FY11 include: Extension to support of near-term Cyber integration for situation Awareness (Map-The Mission); Extended capabilities for Air-Ground Modernization to integrate AF systems (TBMCS) with a number of Army systems (AFATDS, TAIS, AMDWS) to share air space information; Gap filling capabilities to address identified shortcomings during IMDE operator experiments. ***FY 2012 Base Plans:*** Continue selection of Initiatives for execution that will foster enterprise integration across C2ISR and C2 of Cyber programs and support the DoDI 5000.02 requirement for competitive prototyping. A data call will be issued in third quarter FY11 and the submission will be evaluated and selected initiatives will be funded for execution in FY12. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	11.434	10.863	8.365	-	8.365

	FY 2010	FY 2011
Congressional Add: Global Air Presentation System/Airborne Web Services (GAPS/AWS) Horizontal Integration	3.922	-
FY 2010 Accomplishments: For the Global Awareness Presentation System (GAPS), continued development of a visualization system that provided fused situation awareness and strategic information to USTRATCOM commanders. For the Airborne Web Services (AWS), continued to migrate JSTARS and AWACS towards a NetCentric Warfare capability that provided web services the capability to exchange data between the aircraft and ground user. ***FY 2011 Plans:***		
Congressional Adds Subtotals	3.922	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207449F: *C2 Constellation*	**PROJECT** 675078: *Horizontal Integration*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

This project uses full and open competition for operational requirements document creation, systems engineering & architecture development, modeling & simulation and experimentation, joint interoperability/integration, and horizontal integration approaches.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675078: *Horizontal Integration*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Requirements/Capability Based Planning (CBP)/ GAPS/ AWS Horizontal Integration	C/FFP	MITRE Corp:ESC, Hanscom AFB, MA	0.259	-		-		-		-	0.000	0.259	0.259
Requirements/Capability Based Planning (CBP)	C/CPFF	Northrop Grumman:AFRL Rome, Langley AFB, VA	3.771	3.032	Oct 2010	2.400	Oct 2011	-		2.400	Continuing	Continuing	TBD
Architecture Development and Systems Engineering/ GAPS/ AWS Horizontal Integration	C/FFP	MITRE CORP:ESC HAFB, MA	0.200	0.289	Nov 2010	0.228	Nov 2011	-		0.228	Continuing	Continuing	TBD
Analysis, Integration, and SE/ Capability Roadmaps (2)	C/FFP	MITRE:HAFB, MA	0.300	0.595	Nov 2010	0.383	Nov 2011	-		0.383	Continuing	Continuing	TBD
Tech Analysis and Concept Development	C/CPFF	Northrup Grumman:AFRL Rome, NY	1.662	1.775	Nov 2010	1.239	Nov 2011	-		1.239	Continuing	Continuing	TBD
Tech Analysis and Concept Development (1)	C/CPFF	BAE:AFRL Rome, NY	0.475	0.440	Oct 2010	0.044	Oct 2011	-		0.044	Continuing	Continuing	TBD
Horizontal Integration Solution Assessment (1)	C/FFP	MITRE:HAFB, MA	3.000	1.828	Nov 2010	1.700	Oct 2011	-		1.700	Continuing	Continuing	TBD
Horizontal Integration Solution Assessment	C/Various	Not specified.:HAFB, MA	0.309	1.457	Nov 2010	1.463	Oct 2011	-		1.463	Continuing	Continuing	TBD
HI Sol Assess - Congressional Add GAPS/AWS	C/CPFF	Prologic:HAFB, MA	3.564	-		-		-		-	0.000	3.564	3.564
		Subtotal	13.540	9.416		7.457		-		7.457			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Assessment	C/FFP	Quantech PASS:ESC, HAFB, MA	0.026	0.062	Nov 2010	-	Nov 2011	-		-	0.000	0.088	0.000
Support Assessment - 2	Various	Various:ESC, HAFB, MA	0.174	0.095	Nov 2010	-	Nov 2011	-		-	0.000	0.269	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675078: *Horizontal Integration*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Assessment - 3	C/FFP	Jacobs, ETASS:ESC, HAFB, MA	0.009	0.050	Nov 2010	-	Nov 2011	-		-	0.000	0.059	0.000
Support Assessment - 4	C/CPFF	Spectrum:AFRL Rome, NY	1.100	0.816	Sep 2010	0.500	Nov 2011	-		0.500	0.000	2.416	0.000
		Subtotal	1.309	1.023		0.500		-		0.500	0.000	2.832	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support-1	C/FFP	Quantech PASS:ESC, HAFB, MA	0.232	0.236	Nov 2010	0.247	Jan 2012	-		0.247	Continuing	Continuing	TBD
Program Management Support-2	C/FFP	Jacobs ETASS:ESC, HAFB, MA	0.179	0.188	Dec 2010	0.161	Jan 2012	-		0.161	Continuing	Continuing	TBD
Program Management Support-GAPS/AWS	C/FFP	Quantech PASS:ESC,HAFB, MA	0.096	-		-		-		-	0.000	0.096	0.000
		Subtotal	0.507	0.424		0.408		-		0.408			

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	15.356	10.863		8.365		-		8.365			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675078: *Horizontal Integration*

Horizontal Integration (HI) Schedule

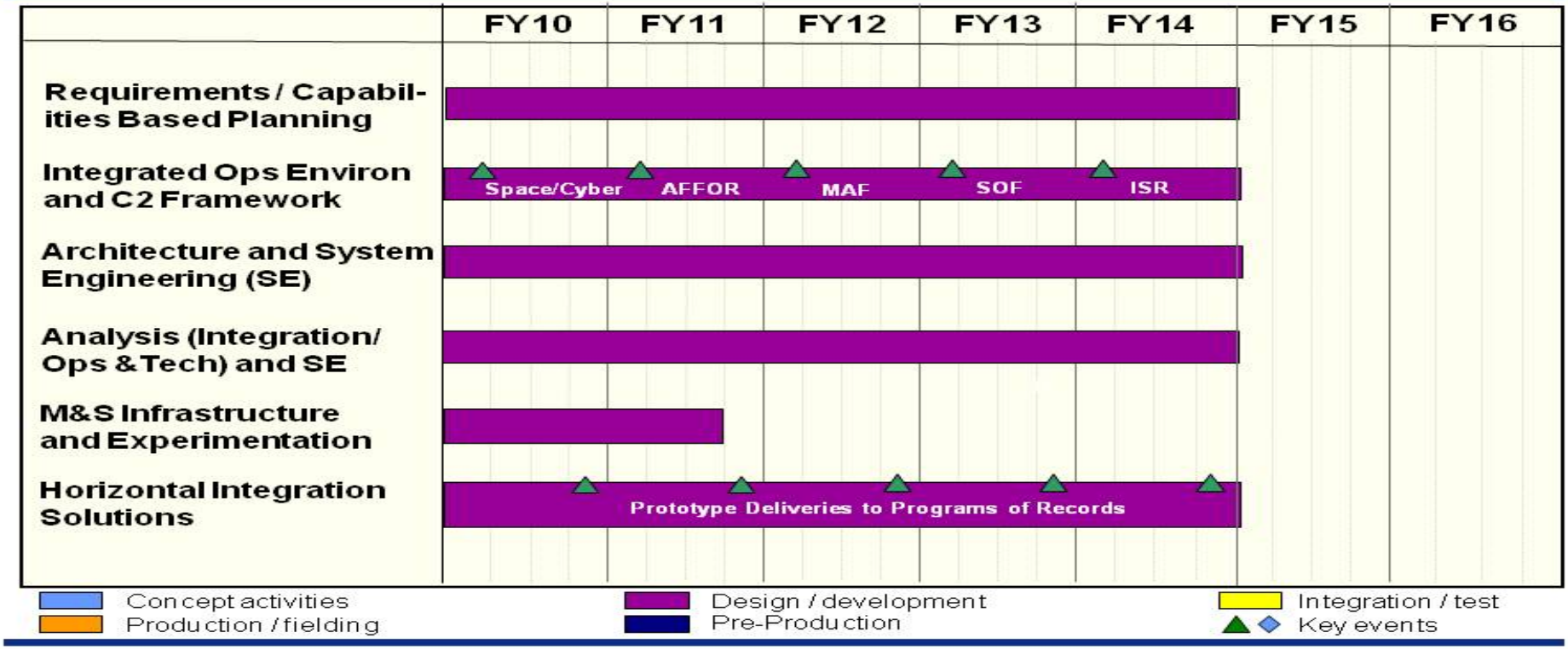


Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207449F: *C2 Constellation*	**PROJECT** 675078: *Horizontal Integration*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Requirements/Capability Based Planning	1	2010	4	2014
Integrated Ops Environment and C2 Framework	1	2010	4	2014
Architecture Development and Systems Engineering	1	2010	4	2014
Analysis (Integration/Ops/Tech) and Systems Engineering	1	2010	4	2014
M&S Infrastructure and Experimentation	1	2010	3	2011
Horizontal Integration Solutions	1	2010	4	2014

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675140: *Joint Expeditionary Force Experiments*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675140: *Joint Expeditionary Force Experiments*	14.022	13.366	9.737	-	9.737	9.591	8.353	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Joint Expeditionary Force Experiments (JEFX) and supporting Limited Objective Experiments (LOE) are warfighter experiments that address emerging operational challenges and are part of the Air Force (AF) concept development and experimentation enterprise. JEFX/LOE activities are: exploring significant capability gaps across the range of AF Concept of Operations (CONOPS;addressing critical lessons learned from recent operations, findings from the Air Force Capabilites Review and Risk Assessments and the Combatant Commander's and Services Warfighter Challenge program; creating operationally representative warfighter environments through the combination of constructive, live-fly forces and virtual forces and simulations; providing a multi-dimensional, multi-national, multi-service/Joint environment for an end-to-end process of innovation, experimentation, assessment, and transition of capabilities; providing joint and coalition warfighters with solutions to critical warfighting gaps; demonstrating emerging Air Force capabilities to deploy and employ decisive air, space and cyberspace power for the Joint Force Commander; enabling innovation and transformation. Unique systems and process integration capabilities are the major reasons JEFX is an experiment and not simply a demonstration or exercise. JEFX activities also include studies and analysis to support both current program planning and execution and future program planning. This program is in Budget Activity 7 - Operational System Development because it provides horizontal integration of the efforts of developers, testers, and warfighters to experiment, analyze, and explore operational concepts and new technologies to enhance operational system developments and improve capabilities of the air, space, and cyberspace forces.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Arch, SE and Initiatives	2.447	2.928	2.108	-	2.108
Description: Spiral develop systems architecture, systems engineering, and integration of initiatives into a cohesive system of systems process					
FY 2010 Accomplishments: Irregular Warfare. Involves 12 critical NAF sponsored initiatives aimed at improving C2 & ISR integration in support of Joint operations including UAV data encryption and improved B2/AWACS communications; tactical C2 and JAGIC integration with the Army; AF/Navy/Army/SOF airborne IP integration. SPIRIT ICE provides a cost effective, operationally configured environment to easily discover data link interoperability issues, improving B-2/AWACS combat readiness.					
FY 2011 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675140: *Joint Expeditionary Force Experiments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Day Without Space. Will continue experimentation efforts with focus on tactical and strategic architectures, communications, systems, and TTPs affected by loss or disruption of space signals due to atmospheric or intentional factors; evaluating effects and refining technologies, Tactics, Techniques, and Procedures aimed at improving AF contributions to the Joint Warfighters assuring mission assurance in a contested environment. Increasing focus on rapid spiral fielding in support of tactical operations; airborne communication integration. ***FY 2012 Base Plans:*** Continue support for Architecture, SE, and JEFX activities. JEFX 12 LOEs will focus on the 4 issues outlined per CORONA Fall 2009 direction: (1)Lack AF-wide IAMD knowledge & emphasis—strategic to tactical; (2)Significant C-NAF organization & personnel deficiencies; (3)Lack exercise, experimentation & wargame oversight & fidelity; and (4)Obsolete C2 radars / sensors, & C2 systems lack integration with joint partners. To address these issues, JEFX will initiate integration of the BMD systems (C2BMC) & other technology and process initiatives into the AOC Weapons System with the goal of full integration into the Joint Counter Air Mission capabilities of the JFACC and AADC. Will also initiate the CSAF/CNO initiative (Air Sea Battle concept) as the relevant operational scenario for JEFX 12. ***FY 2012 OCO Plans:***					
Title: Plan and Design ***Description:*** Plan, design, coordinate, assess and report the JEFX experiments, provide expertise to support initiative selection, acquisition, program management, communications and systems planning ***FY 2010 Accomplishments:*** Irregular Warfare. Involves 12 critical NAF sponsored initiatives aimed at improving C2 & ISR integration in support of Joint operations including UAV data encryption and improved B2/AWACS communications; tactical C2 and JAGIC integration with the Army; AF/Navy/Army/SOF airborne IP integration. SPIRIT ICE provides a cost effective, operationally configured environment to easily discover data link interoperability issues, improving B-2/AWACS combat readiness. ***FY 2011 Plans:*** Day Without Space. Will continue experimentation efforts with focus on tactical and strategic architectures, communications, systems, and TTPs affected by loss or disruption of space signals due to atmospheric or intentional factors; evaluating effects and refining technologies, Tactics, Techniques, and Procedures aimed	4.125	3.829	2.799	-	2.799

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675140: *Joint Expeditionary Force Experiments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
at improving AF contributions to the Joint Warfighters assuring mission assurance in a contested environment. Increasing focus on rapid spiral fielding in support of tactical operations; airborne communication integration. ***FY 2012 Base Plans:*** Continue support for plan & design activities. JEFX 12 LOEs will focus on the 4 issues outlined per CORONA Fall 2009 direction: (1)Lack AF-wide IAMD knowledge & emphasis—strategic to tactical; (2)Significant C-NAF organization & personnel deficiencies; (3)Lack exercise, experimentation & wargame oversight & fidelity; and (4)Obsolete C2 radars / sensors, & C2 systems lack integration with joint partners. To address these issues, JEFX will initiate integration of the BMD systems (C2BMC) & other technology and process initiatives into the AOC Weapons System with the goal of full integration into the Joint Counter Air Mission capabilities of the JFACC and AADC. Will also initiate the CSAF/CNO initiative (Air Sea Battle concept) as the relevant operational scenario for JEFX 12. ***FY 2012 OCO Plans:***					
Title: Develop Initiatives ***Description:*** Develop initiatives to introduce new technologies and operational capabilities into the Aerospace Expeditionary Force (AEF) Concept of Operations (CONOPS) ***FY 2010 Accomplishments:*** Irregular Warfare. Involves 12 critical NAF sponsored initiatives aimed at improving C2 & ISR integration in support of Joint operations including UAV data encryption and improved B2/AWACS communications; tactical C2 and JAGIC integration with the Army; AF/Navy/Army/SOF airborne IP integration. SPIRIT ICE provides a cost effective, operationally configured environment to easily discover data link interoperability issues, improving B-2/AWACS combat readiness. ***FY 2011 Plans:*** Day Without Space. Will continue experimentation efforts with focus on tactical and strategic architectures, communications, systems, and TTPs affected by loss or disruption of space signals due to atmospheric or intentional factors; evaluating effects and refining technologies, Tactics, Techniques, and Procedures aimed at improving AF contributions to the Joint Warfighters assuring mission assurance in a contested environment. Increasing focus on rapid spiral fielding in support of tactical operations; airborne communication integration. ***FY 2012 Base Plans:***	3.200	2.908	2.125	-	2.125

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675140: *Joint Expeditionary Force Experiments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue support for initiative development. JEFX 12 LOEs will focus on the 4 issues outlined per CORONA Fall 2009 direction: (1)Lack AF-wide IAMD knowledge & emphasis—strategic to tactical; (2)Significant C-NAF organization & personnel deficiencies; (3)Lack exercise, experimentation & wargame oversight & fidelity; and (4)Obsolete C2 radars / sensors, & C2 systems lack integration with joint partners. To address these issues, JEFX will initiate integration of the BMD systems (C2BMC) & other technology and process initiatives into the AOC Weapons System with the goal of full integration into the Joint Counter Air Mission capabilities of the JFACC and AADC. Will also initiate the CSAF/CNO initiative (Air Sea Battle concept) as the relevant operational scenario for JEFX 12. ***FY 2012 OCO Plans:***					
Title: Implement Arch Config ***Description:*** Implement architectural configuration, conduct M&S, install and the test the communications infrastructure and execute the experiment ***FY 2010 Accomplishments:*** Irregular Warfare. Involves 12 critical NAF sponsored initiatives aimed at improving C2 & ISR integration in support of Joint operations including UAV data encryption and improved B2/AWACS communications; tactical C2 and JAGIC integration with the Army; AF/Navy/Army/SOF airborne IP integration. SPIRIT ICE provides a cost effective, operationally configured environment to easily discover data link interoperability issues, improving B-2/AWACS combat readiness. ***FY 2011 Plans:*** Day Without Space. Will continue experimentation efforts with focus on tactical and strategic architectures, communications, systems, and TTPs affected by loss or disruption of space signals due to atmospheric or intentional factors; evaluating effects and refining technologies, Tactics, Techniques, and Procedures aimed at improving AF contributions to the Joint Warfighters assuring mission assurance in a contested environment. Increasing focus on rapid spiral fielding in support of tactical operations; airborne communication integration. ***FY 2012 Base Plans:*** Continue support for Architecture Implementation activities. JEFX 12 LOEs will focus on the 4 issues outlined per CORONA Fall 2009 direction: (1)Lack AF-wide IAMD knowledge & emphasis—strategic to tactical; (2)Significant C-NAF organization & personnel deficiencies; (3)Lack exercise, experimentation & wargame oversight & fidelity; and (4)Obsolete C2 radars / sensors, & C2 systems lack integration with joint partners.	3.500	3.023	2.209	-	2.209

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675140: *Joint Expeditionary Force Experiments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
To address these issues, JEFX will initiate integration of the BMD systems (C2BMC) & other technology and process initiatives into the AOC Weapons System with the goal of full integration into the Joint Counter Air Mission capabilities of the JFACC and AADC. Will also initiate the CSAF/CNO initiative (Air Sea Battle concept) as the relevant operational scenario for JEFX 12. ***FY 2012 OCO Plans:***					
Title: Transition ***Description:*** Transition successful JEFX assessed and CSAF approved warfighting capabilities for fielding into an integrated C2ISR baseline ***FY 2010 Accomplishments:*** Irregular Warfare. Involves 12 critical NAF sponsored initiatives aimed at improving C2 & ISR integration in support of Joint operations including UAV data encryption and improved B2/AWACS communications; tactical C2 and JAGIC integration with the Army; AF/Navy/Army/SOF airborne IP integration. SPIRIT ICE provides a cost effective, operationally configured environment to easily discover data link interoperability issues, improving B-2/AWACS combat readiness. ***FY 2011 Plans:*** Day Without Space. Will continue experimentation efforts with focus on tactical and strategic architectures, communications, systems, and TTPs affected by loss or disruption of space signals due to atmospheric or intentional factors; evaluating effects and refining technologies, Tactics, Techniques, and Procedures aimed at improving AF contributions to the Joint Warfighters assuring mission assurance in a contested environment. Increasing focus on rapid spiral fielding in support of tactical operations; airborne communication integration. ***FY 2012 Base Plans:*** Continue support for Transition activities. JEFX 12 LOEs will focus on the 4 issues outlined per CORONA Fall 2009 direction: (1)Lack AF-wide IAMD knowledge & emphasis—strategic to tactical; (2)Significant C-NAF organization & personnel deficiencies; (3)Lack exercise, experimentation & wargame oversight & fidelity; and (4)Obsolete C2 radars / sensors, & C2 systems lack integration with joint partners. To address these issues, JEFX will initiate integration of the BMD systems (C2BMC) & other technology and process initiatives into the AOC Weapons System with the goal of full integration into the Joint Counter Air Mission capabilities of the	0.750	0.678	0.496	-	0.496

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675140: *Joint Expeditionary Force Experiments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
JFACC and AADC. Will also initiate the CSAF/CNO initiative (Air Sea Battle concept) as the relevant operational scenario for JEFX 12.					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	14.022	13.366	9.737	-	9.737

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A: *Other*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

JEFX supports evolutionary acquisition of multiple programs by providing a venue to experiment new and emerging technologies to be integrated into other systems-of-record.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675140: *Joint Expeditionary Force Experiments*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Experimentation-1	C/CPAF	MITRE:ESC Hanscom AFB, MA	2.000	2.286	Oct 2010	2.254	Oct 2011	-		2.254	Continuing	Continuing	TBD
Experimentation-3	C/FFP	Quantech:ESC Hanscom AFB, MA	0.251	0.285	Oct 2010	0.285	Oct 2011	-		0.285	Continuing	Continuing	TBD
Experimentation-4	C/CPAF	Lockheed Martin:ESC Hanscom AFB, MA	0.329	-		-		-		-	0.000	0.329	0.329
Experimentation-5	Various	ESC:Hanscom AFB, MA	0.372	0.649	Oct 2010	0.649	Oct 2011	-		0.649	Continuing	Continuing	TBD
Experimentation-6	C/CPFF	Spectrum:AFRL Rome, NY	5.022	5.540	Nov 2010	3.400	Oct 2011	-		3.400	Continuing	Continuing	TBD
Experimentation-7	C/CPAF	L-3 Services:Hurlburt Field, FL	1.500	1.500	Nov 2010	1.000	Nov 2011	-		1.000	Continuing	Continuing	TBD
Experimentation-8	C/CPAF	Jacob Sverdrup:Hurlburt Field, FL	0.200	0.200	Nov 2010	-		-		-	0.000	0.400	0.400
Experimentation-9	C/CPFF	Northrop Grumman:AFRL/Rome, NY	1.843	1.404	Nov 2010	0.725	Nov 2011	-		0.725	Continuing	Continuing	TBD
Experimentation-10	C/CPFF	Macauly Brown:Hampton, VA	0.540	-		-		-		-	0.000	0.540	0.540
Experimentation-11	C/CPFF	SAIC:San Diego, CA	0.456	0.275	Nov 2010	0.275	Nov 2011	-		0.275	Continuing	Continuing	TBD
Experimentation-12	MIPR	46TS:Eglin AFB, FL	0.313	0.250	Nov 2010	0.250	Nov 2011	-		0.250	Continuing	Continuing	TBD
Experimentation-13	MIPR	AFC2IC:Hampton, VA	0.971	0.852	Nov 2010	0.774	Nov 2011	-		0.774	Continuing	Continuing	TBD
Experimentation-14	MIPR	98RANWG:Nellis AFB, NV	0.225	0.125	Nov 2010	0.125	Nov 2011	-		0.125	Continuing	Continuing	TBD
		Subtotal	14.022	13.366		9.737		-		9.737			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675140: *Joint Expeditionary Force Experiments*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

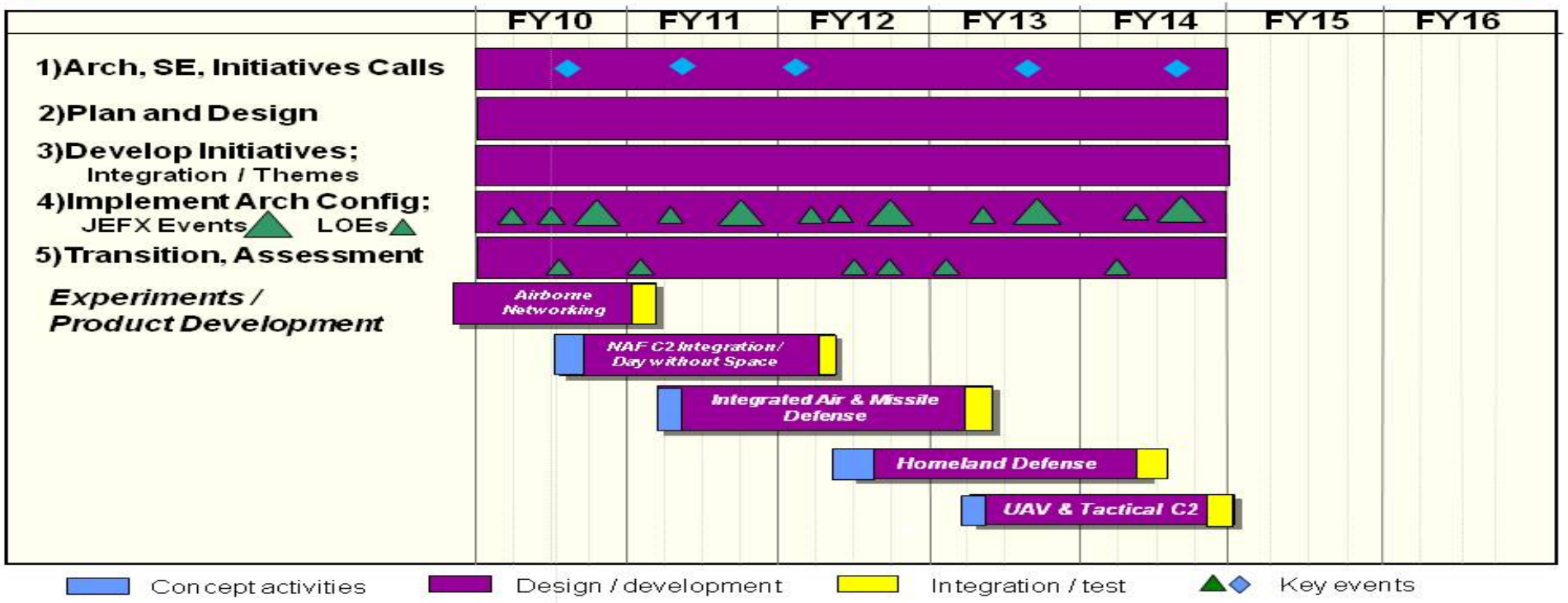
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.022	13.366		9.737		-		9.737			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675140: *Joint Expeditionary Force Experiments*

Joint Expeditionary Force Experiment (JEFX) Schedule



PB11 PBR

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207449F: *C2 Constellation*	PROJECT 675140: *Joint Expeditionary Force Experiments*

Schedule Details

	Start		End	
Events	Quarter	Year	Quarter	Year
Arch, SE, Initiatives Calls	1	2010	4	2014
Plan and Design	1	2010	4	2014
Develop Initiatives	1	2010	4	2014
Implement Arch Config (JEFX and LOEs)	1	2010	4	2014
Transitions, Assessment	1	2010	4	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207581F: *JOINT STARS*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	180.663	168.917	121.610	-	121.610	29.292	29.388	29.236	29.740	Continuing	Continuing
670003: *JSTARS*	180.663	168.917	121.610	-	121.610	29.292	29.388	29.236	29.740	Continuing	Continuing

Note

The program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $2.490M in FY12.

A. Mission Description and Budget Item Justification

The Joint Surveillance Target Attack Radar System (Joint STARS) program produces the world's premier airborne ground surveillance platform, meeting joint combat capability requirements. The 707-based E-8C Joint STARS aircraft provides all-weather radar-derived surveillance and targeting information on moving and stationary ground targets, slowly moving rotary and fixed wing aircraft, and rotating antennas. Joint STARS provides target information for matching direct attack aircraft, standoff weapons, and ground-based attack assets against selected targets. It can be cued by other intelligence, surveillance, and reconnaissance (ISR) and target acquisition systems. This capability enables air and ground commanders to effectively make and execute battlefield decisions. It also helps achieve predictive battle space awareness. Activities also include studies and analyses to support both current program planning and execution and future program planning.

This program element enhances the war fighter's ability to achieve the joint vision of combat operations. It develops advanced battle management aids and information fusion technologies to enable rapid decisions in tracking and killing time-critical targets. Concept exploration, program definition/risk reduction efforts, and studies support continuous improvements in Command & Control and ISR (C2ISR), Network Centric Operations capabilities, and interoperability with Joint Service, Allied, and Coalition systems.

This program element comprises two major efforts, modernization and re-engining:

The modernization effort consists of multiple projects to develop and integrate system improvements, platform wide. These include, but are not limited to the following: Spiral development, Enhanced Land Maritime Mode (ELMM), Diminishing Manufacturing Sources (DMS), and Communications and Networking Upgrades (CNU). The modernization effort also includes support for Joint STARS Test and Infrastructure as well as upgrades to the Training and Support Systems. These efforts are detailed below.

Spiral Development - The spiral development is an umbrella for various technology development/ insertion efforts to enhance target identification, data processing and transmittal and weapon control capabilities, such as Joint STARS Net Enabled Weapons (JNEW) and Joint Surface Warfare (JSuW), Joint STARS Radar Modernization (JSRM), Senior Year Electro-optical Reconnaissance System (SYERS-3) and Blue Force Tracking. The Joint Surface Warfare (JSuW)-Joint Network Enabled Weapons (JNEW) effort includes participation in the JSuW Joint Capability Technology Demonstration (JCTD) and Engineering and Manufacturing Development (EMD) for Network Enabled Weapons (NEW) which includes, but is not limited to, Joint Air to Surface Standoff Missile-Air Surface Warfare-Anti-Surface Warfare (JASSM-ASuW). The JSRM program applies the Multi-Platform Radar Technology Insertion Program (MP-RTIP) technology to JSTARS. The MP-RTIP

capability on the E-8 will provide the ability to detect, track and identify both stationary and moving ground vehicles. The demonstration has matured this capability so that it has the potential to begin System Design and Development (SDD) in FY 12 if funds are available. The SYERS-3 program was a demonstration of the SYERS-3 capability on a Joint STARS aircraft. Spiral development also supports requirements for current Urgent Operational Needs (UON), Quick Reaction Capabilities (QRCs), top-down directed efforts, requirements definition, capability gap analysis, Pre-MSA technical risk reduction activities, Blue Force Tracking as well as other large airborne platform integration efforts including Self Defense Suite (SDS), and radar and aircraft performance improvements.

Programs and projects under Spiral Development are procured under Kill Chain Enhancement- MN-38203.

Enhanced Land Maritime Mode (ELMM) - The ELMM program implements the maritime tracking & improved land tracking upgrade to provide land and maritime tracking capability and improved imagery. ELMM incorporates imagery compression and advanced radar modes.

Diminishing Manufacturing Sources (DMS) - DMS issues are categorized as Prime Mission Equipment-Diminishing Manufacturing Sources (PME-DMS) and Avionics DMS issues. The PME-DMS program includes the replacement of the Radar Airborne Signal Processor (RASP) and the Clipper Operating Work Stations (OWS) computers. The Avionics DMS issues include, but are not limited to, Aircraft Information Program (AIP), Ground Proximity Warning System (GPWS), Communications, Navigation, Surveillance and Air Traffic Management (CNS/ATM) upgrades, Control and Display Unit (CDU) Replacement, Emergency Locator Transmitter (ELT), Flight Data Recorder (FDR), Electric Flight Bag (EFB), Mode 5 Identification Friend or Foe (IFF), Embedded GPS Inertial (EGI) with Selective Availability Anti-Spoofing Module (SAASM)/M-Code GPS, Digital Multi-Function Flight Display (Attitude Direction Indicator, Horizontal Situation Indicator and Attitude Heading Reference System) , Automatic Dependent Surveillance-Broadcast (ADS-B), a new Flight Management System (FMS), Flight Director, Instrument Landing System (ILS) Marker Beacon multi-mode receiver (MMR), and digital engine instruments.

Communications and Networking Upgrades (CNU) - A multi-phased CNU effort includes, but is not limited to, replacement of the E-8C Link 16 Tactical Data Link (TDL) equipment with National Security Agency (NSA) Cryptographic Modernization Program (CMP) compliant equipment, the Multifunctional Information Distribution System (MIDS) Joint Tactical Radio System (JTRS), Integrated Broadcast Services (IBS), the Family of Advanced Beyond Line of Sight Terminals (FAB-T), wideband line-of-sight and beyond line-of-sight (BLOS) network communication upgrades, Advanced Tactical Data Links integration, Airborne Networking, and Network Centric operation enhancements.

Test and Infrastructure - All of these efforts rely on the test infrastructure provided by the Joint STARS Extended Test Support (JETS) program C2 Enterprise Integration Facility (CEIF). JETS includes a dedicated test aircraft, laboratories, and support facilities used by the Joint STARS Test Force (JTF) to conduct RDT&E activities.

Training and support systems upgrades as a part of modernization efforts include, but are not limited to: Weapon Systems Trainer (WST); Navigator Training System (NTS); and Mission Crew Trainers to include a Mission Maintenance Trainer (MMT), Prime Mission Equipment-Maintenance Training Device (PME-MTD) and the Mission System Trainer (MST).

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207581F: *JOINT STARS*

Other modernization efforts include interoperability with manned and unmanned platforms; space data links; advanced Battle-Management Command and Control (BMC2) concepts; 8.33/25 kHz VHF Radio with Single Channel Ground and Airborne Radio System (SINCGARS) voice and data communication; ISR Constellation; Air Moving Target Indicator (AMTI); Advanced Radar Modes (ARM); Aided Target Recognition (ATR); Synthetic Aperture Radar (SAR)/Enhanced Synthetic Aperture Radar (ESAR); Network Centric Collaborative Targeting (NCCT); and Beyond Line of Sight (BLOS) networking.

The second major Joint STARS effort is re-engining. The JSTARS Re-Engining program replaces legacy TF33-P102C engines with new production JT8D-219 engines. These new engines are predicted to provide the E-8C aircraft improved performance, including thrust, altitude capability, mission duration, time to climb, critical field length (i.e. takeoff performance), fuel efficiency, noise abatement, emissions and reliability. It also adds the potential for additional power generation for future systems. Efforts include non-recurring engineering including Federal Aviation Administration (FAA) certification, flight test, manuals, MIL-STD airworthiness qualification, flight data analysis, and purchase of the Propulsion Pod System (PPS). The PPS consists of new engines (4), pneumatic bleed air system, thrust reversers, nacelles, pylons, exhaust ducts, controls, and instrumentation.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	185.616	168.917	72.228	-	72.228
Current President's Budget	180.663	168.917	121.610	-	121.610
Total Adjustments	-4.953	-	49.382	-	49.382
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-4.953	-			
• Other Adjustments	-	-	49.382	-	49.382

Change Summary Explanation

FY 2012 funding total includes an increase to preserve JSTARS PME-DMS

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
670003: *JSTARS*	180.663	168.917	121.610	-	121.610	29.292	29.388	29.236	29.740	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The program funding includes reductions for overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $2.490M in FY12.

A. Mission Description and Budget Item Justification

The Joint Surveillance Target Attack Radar System (Joint STARS) program produces the world's premier airborne ground surveillance platform, meeting joint combat capability requirements. The 707-based E-8C Joint STARS aircraft provides all-weather radar-derived surveillance and targeting information on moving and stationary ground targets, slowly moving rotary and fixed wing aircraft, and rotating antennas. Joint STARS provides target information for matching direct attack aircraft, standoff weapons, and ground-based attack assets against selected targets. It can be cued by other intelligence, surveillance, and reconnaissance (ISR) and target acquisition systems. This capability enables air and ground commanders to effectively make and execute battlefield decisions. It also helps achieve predictive battle space awareness. Activities also include studies and analyses to support both current program planning and execution and future program planning.

This program element enhances the war fighter's ability to achieve the joint vision of combat operations. It develops advanced battle management aids and information fusion technologies to enable rapid decisions in tracking and killing time-critical targets. Concept exploration, program definition/risk reduction efforts, and studies support continuous improvements in Command & Control and ISR (C2ISR), Network Centric Operations capabilities, and interoperability with Joint Service, Allied, and Coalition systems.

This program element comprises two major efforts, modernization and re-engining:

The modernization effort consists of multiple projects to develop and integrate system improvements, platform wide. These include, but are not limited to the following: Spiral development, Enhanced Land Maritime Mode (ELMM), Diminishing Manufacturing Sources (DMS), and Communications and Networking Upgrades (CNU). The modernization effort also includes support for Joint STARS Test and Infrastructure as well as upgrades to the Training and Support Systems. These efforts are detailed below.

Spiral Development - The spiral development is an umbrella for various technology development/ insertion efforts to enhance target identification, data processing and transmittal and weapon control capabilities, such as Joint STARS Net Enabled Weapons (JNEW) and Joint Surface Warfare (JSuW), Joint STARS Radar Modernization (JSRM), Senior Year Electro-optical Reconnaissance System (SYERS-3) and Blue Force Tracking. The Joint Surface Warfare (JSuW)-Joint Network Enabled Weapons (JNEW) effort includes participation in the JSuW Joint Capability Technology Demonstration (JCTD) and Engineering and Manufacturing Development (EMD) for Network Enabled Weapons (NEW) which includes, but is not limited to, Joint Air to Surface Standoff Missile-Air Surface Warfare-Anti-Surface Warfare (JASSM-ASuW). The JSRM program applies the Multi-Platform Radar Technology Insertion Program (MP-RTIP) technology to JSTARS. The MP-RTIP

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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capability on the E-8 will provide the ability to detect, track and identify both stationary and moving ground vehicles. The demonstration has matured this capability so that it has the potential to begin System Design and Development (SDD) in FY 12 if funds are available. The SYERS-3 program was a demonstration of the SYERS-3 capability on a Joint STARS aircraft. Spiral development also supports requirements for current Urgent Operational Needs (UON), Quick Reaction Capabilities (QRCs), top-down directed efforts, requirements definition, capability gap analysis, Pre-MSA technical risk reduction activities, Blue Force Tracking as well as other large airborne platform integration efforts including Self Defense Suite (SDS), and radar and aircraft performance improvements.

Programs and projects under Spiral Development are procured under Kill Chain Enhancement- MN-38203.

Enhanced Land Maritime Mode (ELMM) - The ELMM program implements the maritime tracking & improved land tracking upgrade to provide land and maritime tracking capability and improved imagery. ELMM incorporates imagery compression and advanced radar modes.

Diminishing Manufacturing Sources (DMS) - DMS issues are categorized as Prime Mission Equipment-Diminishing Manufacturing Sources (PME-DMS) and Avionics DMS issues. The PME-DMS program includes the replacement of the Radar Airborne Signal Processor (RASP) and the Clipper Operating Work Stations (OWS) computers. The Avionics DMS issues include, but are not limited to, Aircraft Information Program (AIP), Ground Proximity Warning System (GPWS), Communications, Navigation, Surveillance and Air Traffic Management (CNS/ATM) upgrades, Control and Display Unit (CDU) Replacement, Emergency Locator Transmitter (ELT), Flight Data Recorder (FDR), Electric Flight Bag (EFB), Mode 5 Identification Friend or Foe (IFF), Embedded GPS Inertial (EGI) with Selective Availability Anti-Spoofing Module (SAASM)/M-Code GPS, Digital Multi-Function Flight Display (Attitude Direction Indicator, Horizontal Situation Indicator and Attitude Heading Reference System) , Automatic Dependent Surveillance-Broadcast (ADS-B), a new Flight Management System (FMS), Flight Director, Instrument Landing System (ILS) Marker Beacon multi-mode receiver (MMR), and digital engine instruments.

Communications and Networking Upgrades (CNU) - A multi-phased CNU effort includes, but is not limited to, replacement of the E-8C Link 16 Tactical Data Link (TDL) equipment with National Security Agency (NSA) Cryptographic Modernization Program (CMP) compliant equipment, the Multifunctional Information Distribution System (MIDS) Joint Tactical Radio System (JTRS), Integrated Broadcast Services (IBS), the Family of Advanced Beyond Line of Sight Terminals (FAB-T), wideband line-of-sight and beyond line-of-sight (BLOS) network communication upgrades, Advanced Tactical Data Links integration, Airborne Networking, and Network Centric operation enhancements.

Test and Infrastructure - All of these efforts rely on the test infrastructure provided by the Joint STARS Extended Test Support (JETS) program C2 Enterprise Integration Facility (CEIF). JETS includes a dedicated test aircraft, laboratories, and support facilities used by the Joint STARS Test Force (JTF) to conduct RDT&E activities.

Training and support systems upgrades as a part of modernization efforts include, but are not limited to: Weapon Systems Trainer (WST); Navigator Training System (NTS); and Mission Crew Trainers to include a Mission Maintenance Trainer (MMT), Prime Mission Equipment-Maintenance Training Device (PME-MTD) and the Mission System Trainer (MST).

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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Other modernization efforts include interoperability with manned and unmanned platforms; space data links; advanced Battle-Management Command and Control (BMC2) concepts; 8.33/25 kHz VHF Radio with Single Channel Ground and Airborne Radio System (SINCGARS) voice and data communication; ISR Constellation; Air Moving Target Indicator (AMTI); Advanced Radar Modes (ARM); Aided Target Recognition (ATR); Synthetic Aperture Radar (SAR)/Enhanced Synthetic Aperture Radar (ESAR); Network Centric Collaborative Targeting (NCCT); and Beyond Line of Sight (BLOS) networking.

The second major Joint STARS effort is re-engining. The JSTARS Re-Engining program replaces legacy TF33-P102C engines with new production JT8D-219 engines. These new engines are predicted to provide the E-8C aircraft improved performance, including thrust, altitude capability, mission duration, time to climb, critical field length (i.e. takeoff performance), fuel efficiency, noise abatement, emissions and reliability. It also adds the potential for additional power generation for future systems. Efforts include non-recurring engineering including Federal Aviation Administration (FAA) certification, flight test, manuals, MIL-STD airworthiness qualification, flight data analysis, and purchase of the Propulsion Pod System (PPS). The PPS consists of new engines (4), pneumatic bleed air system, thrust reversers, nacelles, pylons, exhaust ducts, controls, and instrumentation.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Modernization	39.615	62.165	53.221	-	53.221
Description: Multiple projects to develop and integrate system improvements, platform wide					
FY 2010 Accomplishments: JSuW Link 16 JCTD tested, continued JSRM radar receiver development, completed SYERS Demo, continued Avionics DMS development, continued ELMM SDD and testing, continued CNU-JTRS replacement development, started 8.33/25 kHz Radio with SINCGARS Retrofit, completed SINCGARS SDD, continued PME DMS RASP SDD, started FVB mitigation and AoA, continued QRC efforts, continued Spiral Development.					
FY 2011 Plans: Completing JSuW Link 16 JCTD, continuing JSRM radar receiver development, completed SYERS Demo, continuing Avionics DMS development, completing ELMM SDD and beginning production, continuing CNU-JTRS replacement development, continuing 8.33/25 kHz Radio with SINCGARS Retrofit, continuing PME DMS RASP SDD, continuing FVB mitigation, completing AoA, continuing QRC efforts, continuing Spiral Development.					
FY 2012 Base Plans: Will complete JSRM radar receiver development and begin flight demo, will continue Avionics DMS development, will continue ELMM SDD production and retrofit, will begin CNU-JTRS production, will continue					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
8.33/25 kHz Radio with SINCGARS Retrofit, will continue PME DMS RASP SDD, will continue FVB mitigation, will continue QRC efforts, will continue Spiral Development. ***FY 2012 OCO Plans:*** Not applicable.					
Title: Test and infrastructure ***Description:*** Test and Infrastructure Effort ***FY 2010 Accomplishments:*** Supported Test and Infrastructure Effort including but not limited to Joint Test Force, JETS contract, Information Assurance, range support, and PL-2 security; supported T-3 aircraft, test labs, facilities. ***FY 2011 Plans:*** Supporting Test and Infrastructure Effort including but not limited to Joint Test Force, JETS contract, Information Assurance, range support, and PL-2 security; supporting T-3 aircraft, test labs, facilities. ***FY 2012 Base Plans:*** Will support Test and Infrastructure Effort including but not limited to Joint Test Force, JETS contract, Information Assurance, range support, and PL-2 security; will support T-3 aircraft, test labs, facilities. ***FY 2012 OCO Plans:*** Not applicable.	34.209	35.107	30.650	-	30.650
Title: Re-Engining ***Description:*** Replaces legacy TF-33 Propulsion Pod System (PPS) consisting of new engines, thrust reversers, nacelles, pylons, exhaust ducts, controls, instrumentation and all associated components. ***FY 2010 Accomplishments:*** Supported non-recurring engineering activity including development, FAA Certification, Flight Testing, Flight Performance Manuals, Pneumatic SDD (Bleed Air), Maintenance Training. ***FY 2011 Plans:***	106.839	71.645	37.739	-	37.739

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Supporting non-recurring engineering activity including development, FAA Certification, Flight Testing, Flight Performance Manuals, Pneumatic SDD (Bleed Air), Maintenance Training. ***FY 2012 Base Plans:*** Will supporting non-recurring engineering activity including development, FAA Certification, Flight Testing, Flight Performance Manuals, Pneumatic SDD (Bleed Air), Maintenance Training & logistics development. ***FY 2012 OCO Plans:*** Not applicable.					
Accomplishments/Planned Programs Subtotals	180.663	168.917	121.610	-	121.610

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207581F: *JSTARS, APAF, MODERNIZATION*	102.360	195.201	43.546	0.000	43.546	76.313	73.836	27.616	28.628	Continuing	Continuing

D. Acquisition Strategy

Development efforts are performed in an incremental method. Most major programs will be sole source to Northrop Grumman Corp. in Melbourne, Florida and Norwalk, Connecticut. Trainer programs are sole source to Rockwell Collins in Sterling, Virginia.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Spiral Development	Various	NGC:Melb, FL	115.289	0.249	Nov 2010	0.254	Nov 2011	-		0.254	Continuing	Continuing	TBD
Communications & Network Upgrade (CNU)(Joint Tactical Radio System (JTRS))	SS/CPAF	NGC:Melb, Fl	6.971	0.792	Nov 2010	0.045	Nov 2011	-		0.045	0.000	7.808	7.808
ELMM/ARM	SS/CPFF	NGC:Melb, Fl	96.438	0.092	Nov 2010	-		-		-	0.000	96.530	96.530
PME DMS	SS/CPIF	NGC:Melb, Fl	96.316	59.351	Nov 2010	50.386	Nov 2011	-		50.386	0.000	206.053	206.053
SYERS Demonstration	SS/FFP	NGC:Melb, Fl	16.009	-		-		-		-	0.000	16.009	16.009
Avionics DMS	SS/TBD	NGC:Melb, FL	0.774	1.681	Nov 2010	2.536	Nov 2011	-		2.536	Continuing	Continuing	TBD
Re-Engining	SS/CPIF	NGC:Melb, Fl	257.005	71.645	Feb 2011	37.739	Feb 2012	-		37.739	0.000	366.389	366.389
		Subtotal	588.802	133.810		90.960		-		90.960			

Remarks

Where Various Contract Method & Types take place, earliest date funds will be obligated is noted.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Pending Actions	TBD	Not specified.:,	-	-		-		-		-	0.000	0.000	0.000
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Remarks

Where Various Contract Method & Types take place, earliest date funds will be obligated is noted.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
E-8C JSTARS Ext. Test Spt (JETS)	SS/CPAF	NGC:Melb, Fl	577.036	31.086	Nov 2010	25.955	Nov 2011	-		25.955	Continuing	Continuing	TBD
JTF Test Ops/Support	Various	JTF:Melb, Fl	83.614	4.021	Nov 2010	4.695	Nov 2011	-		4.695	Continuing	Continuing	TBD

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			660.650	35.107		30.650		-		30.650			

Remarks

Where Various Contract Method & Types take place, earliest date funds will be obligated is noted.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks

Where Various Contract Method & Types take place, earliest date funds will be obligated is noted.

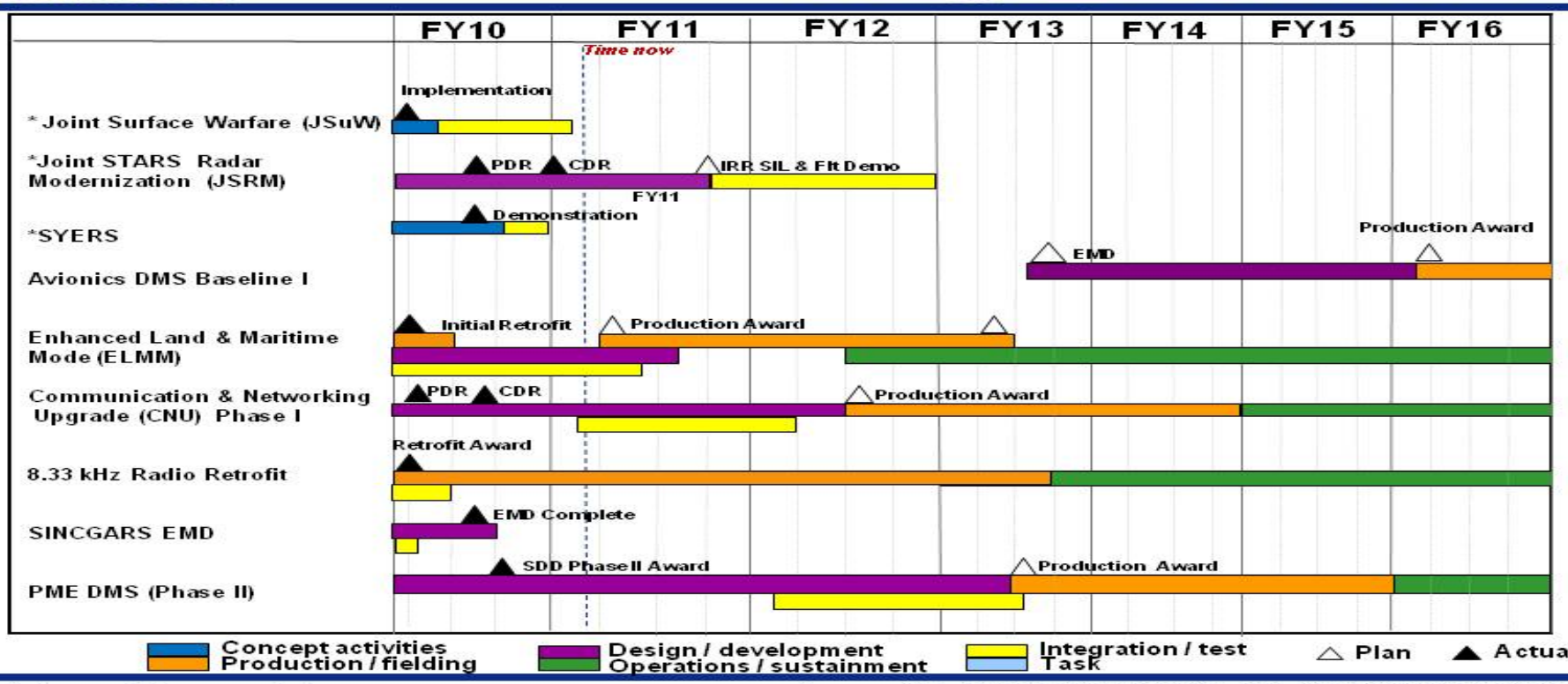
	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,249.452	168.917		121.610		-		121.610			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207581F: *JOINT STARS*	PROJECT 670003: *JSTARS*

U.S. AIR FORCE

Joint STARS Modernization Program Schedule



*Demonstrations – no follow-on production

As of: 10 Jan 11

Acronyms
PDR – Preliminary Design Review
IRR – Integration Readiness Review
EMD – Engineering and Management Development
CDR – Critical Design Review
SIL – System Integration Lab

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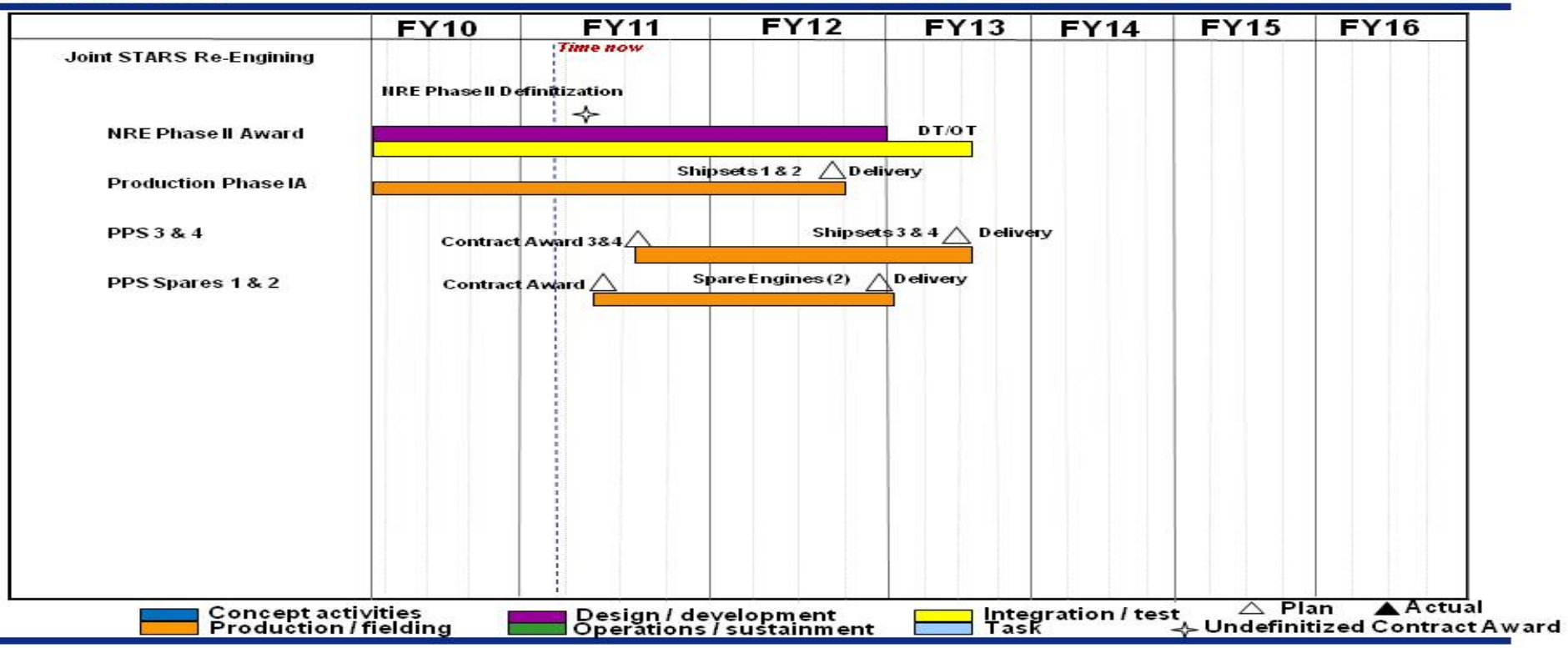
Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207581F: *JOINT STARS*	PROJECT 670003: *JSTARS*

U.S. AIR FORCE

Joint STARS Re-Engining Program Schedule



As of: 10 Jan 11

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207581F: *JOINT STARS*	**PROJECT** 670003: *JSTARS*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Joint Surface Warfare (JSuW) p.1 of 2	1	2010	1	2011
Joint STARS Radar Modernization (JSRM) p. 1 of 2	1	2010	4	2012
SYERS Study/Demonstration p. 1 of 2	1	2010	4	2010
Avionics DMS EMD Baseline I p. 1 of 2	3	2013	1	2016
Avionics Production p. 1 of 2	1	2016	4	2016
ELMM Initial Retrofit p. 1 of 2	1	2010	2	2010
ELMM Retrofit Production p. 1 of 2	2	2011	2	2013
ELMM EMD p. 1 of 2	1	2010	3	2011
CNU Phase I EMD p. 1 of 2	1	2010	3	2012
CNU Production p. 1 of 2	3	2012	4	2014
8.33/25 kHz Radio Retrofit p. 1 of 2	1	2010	3	2013
SINCGARS EMD p. 1 of 2	1	2010	3	2010
PME DMS Phase II SDD p. 1 of 2	4	2010	2	2013
PME DMS Production p. 1 of 2	3	2013	4	2015
Re-Engine NRE Phase II p. 2 of 2	1	2010	4	2012
Re-Engine Production Phase IA p. 2 of 2	1	2010	3	2012
Re-Engine PPS 3 & 4 p. 2 of 2	3	2011	3	2013
Re-Engine PPS Spares 1 & 2 p. 2 of 2	2	2011	1	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207590F: *Seek Eagle*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	21.979	19.263	18.599	-	18.599	19.154	19.442	19.722	20.071	Continuing	Continuing
674037: *SEEK EAGLE Certifications*	21.979	19.263	18.599	-	18.599	19.154	19.442	19.722	20.071	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Air Force operates a variety of combat aircraft that carry numerous and varied stores (munitions, missiles, fuel tanks, targeting pods, range pods, electronic countermeasures pods, etc.). Stores are carried in countless different loading combinations determined by operational and training scenarios, missions, tactics, and weapon development programs. Aircraft stores combinations change as operational plans and tactics change and as new stores are developed and fielded. Before operational, training or test use, the Air Force must certify these configurations for safe loading, carriage, and separation (jettison and normal release); as well as verify ballistics accuracy under the user-certified carriage and employment parameters. The Air Force SEEK EAGLE program completes certification recommendations and recommended flight clearances through any combination of engineering analysis, wind tunnel testing, modeling and simulation, and ground/flight test and evaluation. In support of certification, the program recommends about 1000 aircraft/store combinations for flight each year with analysis and testing, requiring from weeks to years depending on the complexity. Integrated solutions for combat aircrew weapon delivery planning problems are developed and provided to combat forces via Combat Weapons Delivery Software (CWDS). The program is also responsible for inserting new and emerging technologies into the SEEK EAGLE process as well as providing resources for the sustainment of a viable Air Force aircraft/store certification capability.

SEEK EAGLE funds are currently budgeted to support certification testing and analysis for new weapons programs (and all new variants) including, but not limited to: Small Diameter Bomb (SDB), Laser Joint Direct Attack Munitions (LJDAM), Joint Air-to-Surface Standoff Missile (JASSM), Air Intercept Missile (AIM-9X), Advanced Medium Range Air-to-Air Missile (AIM-120,AMRAAM), Miniature Air-Launched Decoy (MALD), BRU-57 (Smart Bomb Rack), low collateral damage warhead (BLU-129), Wind Corrected Munitions Dispenser (WCMD), Sniper Targeting Pod with video data link, LITENING Targeting Pod with video data link, laser guided bombs, laser guided Maverick (AGM-65L), F-22 travel pod (MXU-1010), practice bomb (BDU-50), and Aircraft Instrumentation Pod (AN/ASQ-T50). SEEK EAGLE funds are also used to support certification of other inventory stores on CAF and SOCOM aircraft, assist the F-35 JPO with subject matter expertise in the System Development and Demonstration phase (e.g. development of limited organic store certifications capability to support F-35 in the Production, Sustainment, and Follow-on Development phase), continue developing F-22 engineering models/data and obtain follow-on technical support from Lockheed Martin, and to obtain non-inventory stores for post-integration certification requirements.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207590F: *Seek Eagle*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	22.071	19.263	18.661	-	18.661
Current President's Budget	21.979	19.263	18.599	-	18.599
Total Adjustments	-0.092	-	-0.062	-	-0.062
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.092	-	-0.062	-	-0.062

Change Summary Explanation

No Significant Changes

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207590F: *Seek Eagle*	PROJECT 674037: *SEEK EAGLE Certifications*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674037: *SEEK EAGLE Certifications*	21.979	19.263	18.599	-	18.599	19.154	19.442	19.722	20.071	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Air Force operates a variety of combat aircraft that carry numerous and varied stores (munitions, missiles, fuel tanks, targeting pods, range pods, electronic countermeasures pods, etc.). Stores are carried in countless different loading combinations determined by operational and training scenarios, missions, tactics, and weapon development programs. Aircraft stores combinations change as operational plans and tactics change and as new stores are developed and fielded. Before operational, training or test use, the Air Force must certify these configurations for safe loading, carriage, and separation (jettison and normal release); as well as verify ballistics accuracy under the user-certified carriage and employment parameters. The Air Force SEEK EAGLE program completes certification recommendations and recommended flight clearances through any combination of engineering analysis, wind tunnel testing, modeling and simulation, and ground/flight test and evaluation. In support of certification, the program recommends about 1000 aircraft/store combinations for flight each year with analysis and testing, requiring from weeks to years depending on the complexity. Integrated solutions for combat aircrew weapon delivery planning problems are developed and provided to combat forces via Combat Weapons Delivery Software (CWDS). The program is also responsible for inserting new and emerging technologies into the SEEK EAGLE process as well as providing resources for the sustainment of a viable Air Force aircraft/store certification capability.

SEEK EAGLE funds are currently budgeted to support certification testing and analysis for new weapons programs (and all new variants) including, but not limited to: Small Diameter Bomb (SDB), Laser Joint Direct Attack Munitions (LJDAM), Joint Air-to-Surface Standoff Missile (JASSM), Air Intercept Missile (AIM-9X), Advanced Medium Range Air-to-Air Missile (AIM-120,AMRAAM), Miniature Air-Launched Decoy (MALD), BRU-57 (Smart Bomb Rack), low collateral damage warhead (BLU-129), Wind Corrected Munitions Dispenser (WCMD), Sniper Targeting Pod with video data link, LITENING Targeting Pod with video data link, laser guided bombs, laser guided Maverick (AGM-65L), F-22 travel pod (MXU-1010), practice bomb (BDU-50), and Aircraft Instrumentation Pod (AN/ASQ-T50). SEEK EAGLE funds are also used to support certification of other inventory stores on CAF and SOCOM aircraft, assist the F-35 JPO with subject matter expertise in the System Development and Demonstration phase (e.g. development of limited organic store certifications capability to support F-35 in the Production, Sustainment, and Follow-on Development phase), continue developing F-22 engineering models/data and obtain follow-on technical support from Lockheed Martin, and to obtain non-inventory stores for post-integration certification requirements.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: F-22A	4.200	3.300	2.500	-	2.500

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207590F: *Seek Eagle*	PROJECT 674037: *SEEK EAGLE Certifications*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: F-22A Capability Development and Weapons Certification. ***FY 2010 Accomplishments:*** Finalized integrated contractor-to-government engineering capability transition plan for the F-22. Continued developing organic F-22 engineering capability in remaining 4 disciplines by receiving additional contractor deliverables and developing organic computational M&S capabilities. Continued to support engineering and flight test activities for store integration and certification on F-22, such as the GBU-39 SDB I, AIM-9X, Joint Direct Attack Munition (JDAM) enhancements and a travel pod. ***FY 2011 Plans:*** Continue developing organic F-22 engineering capability in remaining 4 disciplines by receiving additional contractor deliverables and developing organic computational M&S capabilities. Perform engineering analysis and begin wind tunnel and flight test planning to support certification of AIM-120D, AIM-9X, and MXU-1010 on the F-22 for increment 3.2. Enlist support from the contractor for engineering analysis for increment 3.2 aircraft-stores certification. ***FY 2012 Base Plans:*** Continue developing organic F-22 engineering capability in remaining 4 disciplines by receiving additional contractor deliverables and developing organic computational M&S capabilities. Perform engineering analysis and begin wind tunnel and flight test planning to support certification of AIM-120D and MXU-1010 and perform wind tunnel testing of AIM-9X on the F-22 for increment 3.2. Enlist support from the contractor for engineering analysis for increment 3.2 aircraft-stores certification. ***FY 2012 OCO Plans:***					
Title: CWDS ***Description:*** Develop Mission Planning Software including Combat Weapon Delivery Software (CWDS). ***FY 2010 Accomplishments:*** Continued support of CWDS requirements across multiple Mission Planning Environments (MPEs) on two different frameworks: Portable Flight Planning Software (PFPS) and Joint Mission Planning System (JMPS). Sustained the CWDS software development cycle to meet new, multi-platform requirements in addition to on-	2.800	2.600	2.500	-	2.500

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207590F: *Seek Eagle*	PROJECT 674037: *SEEK EAGLE Certifications*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
going warfighter requirements. Initiated CWDS re-architecture for alignment with JMPS FY11 requirements and provided additional essential capabilities to the warfighter. ***FY 2011 Plans:*** Continue support of CWDS requirements for multiple MPEs on two different frameworks: PFPS and JMPS. Begin transition to the redeveloped CWDS software for alignment with the JMPS roadmap architecture. Continue support of legacy CWDS development until full transition of all MPEs to new JMPS framework has occurred. ***FY 2012 Base Plans:*** Continue support of CWDS requirements for multiple MPEs on two different frameworks: PFPS and JMPS. Continue transition to the redeveloped CWDS software for alignment with the JMPS roadmap architecture. Continue support of legacy CWDS development until full transition of all MPEs to new JMPS framework has occurred. ***FY 2012 OCO Plans:***					
Title: M&S capability ***Description:*** Modeling and Simulation (M&S) capability development in support of store certification ***FY 2010 Accomplishments:*** Continued development and improvement of M&S capability to support store certification disciplines. Example work included alpha testing of new Create-AV/Kestrel code base for Stability and Control Discipline with static aircraft. Other key work included tools necessary to characterize F-22 and F-35 weapons bay environments including aero-acoustic prediction. ***FY 2011 Plans:*** Continue development and improvement of M&S capability to support store certification disciplines. Example work includes alpha and beta testing of new Create-AV/Kestrel code base for Stability and Control Discipline progressing from static aircraft to aircraft with moving control surfaces. Other key work includes tools necessary to characterize F-22 and F-35 weapons bay environments including aero-acoustic prediction. ***FY 2012 Base Plans:*** Continue development and improvement of M&S capability to support store certification disciplines. Example work includes alpha and beta testing of new Create-AV/Kestrel code base for Stability and Control Discipline	2.900	2.900	2.900	-	2.900

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207590F: *Seek Eagle*	PROJECT 674037: *SEEK EAGLE Certifications*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
progressing from static aircraft to aircraft with moving control surfaces. Other key work includes tools necessary to characterize F-22 and F-35 weapons bay environments including aero-acoustic prediction. ***FY 2012 OCO Plans:***					
Title: Aircraft/Store capability analysis ***Description:*** Evaluate aircraft/store compatibility through analysis, M&S and flight and ground test. Provide flight recommendations to airworthiness authorities. ***FY 2010 Accomplishments:*** Delivered 187 flight clearance recommendations, certification recommendations and related products to airworthiness authorities. Significant projects included Quick Reaction Certifications (QRCs) providing carriage of 3 GBU-12s on F-15E and a GBU-38 and GBU-54 alternate loading and release sequence on the F-15E; MALD, SDB II and targeting pod Developmental Test Support; multiple AFSOC/SOCOM efforts including one QRC; certification of MALD and AIM-9X mixed loadings on F-16, JASSM on the F-15E, and support of the MOP on the B-2. ***FY 2011 Plans:*** Continually provide compatibility flight recommendations as requested by ACC/A8, AAC, AFSOC and other agencies. Extensive F-16/SDB and F-16/AIM-9X ground and flight testing will be performed. ***FY 2012 Base Plans:*** Continually provide compatibility flight recommendations as requested by ACC/A8, AAC, AFSOC and other agencies. Extensive F-16/SDB and F-16/AIM-9X ground and flight testing will be performed. ***FY 2012 OCO Plans:***	12.079	10.463	10.699	-	10.699
Accomplishments/Planned Programs Subtotals	21.979	19.263	18.599	-	18.599

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207590F: *Seek Eagle*	**PROJECT** 674037: *SEEK EAGLE Certifications*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A: *None*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

The SEEK EAGLE program does not execute in accordance with established acquisition program milestones. For initial aircraft-weapons integration, the aircraft or weapon program office is responsible for budgeting and providing the test assets to AFSEO for the store certification requirements. For post integration certification reiquirements, AFSEO funds are used to obtain the non-inventory test assets.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207590F: *Seek Eagle*	PROJECT 674037: *SEEK EAGLE Certifications*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Organic F-22 Capabilities	C/CPFF	Lockheed Martin:Marietta, GA	4.900	3.000	Dec 2009	2.100	Dec 2009	-		2.100	Continuing	Continuing	0.000
Multiple fighter and weapon capability support	C/CPFF	Lockheed Martin:Marietta, GA	5.637	0.020	Jul 2006	0.020	Jul 2006	-		0.020	Continuing	Continuing	0.000
Enhance Existing and Develop Organic Electro EMI Capabilities	C/CPFF	Applied Research:Baltimore, MD	0.385	0.250	Apr 2010	0.250	Apr 2010	-		0.250	Continuing	Continuing	0.000
		Subtotal	10.922	3.270		2.370		-		2.370			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Support	C/CPFF	Tybrin:Ft Walton Beach, FL	23.110	2.600	Jan 2006	2.500	Jan 2006	-		2.500	Continuing	Continuing	0.000
		Subtotal	23.110	2.600		2.500		-		2.500			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
46th Test Wing	RO	Eglin AFB:Eglin AFB, FL	214.763	10.793		11.079		-		11.079	Continuing	Continuing	0.000
AEDC	Various	Arnold Engineering Dev Center,TN:Arnold AFB, TN	21.479	0.750		0.800		-		0.800	Continuing	Continuing	0.000
AFFTC	PO	Edwards AFB:Edward AFB, CA	1.150	0.350		0.350		-		0.350	Continuing	Continuing	0.000
Various	Various	Various:Multiple,	94.445	1.500		1.500		-		1.500	Continuing	Continuing	0.000
		Subtotal	331.837	13.393		13.729		-		13.729			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207590F: *Seek Eagle*	PROJECT 674037: *SEEK EAGLE Certifications*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	365.869	19.263		18.599		-		18.599			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207590F: *Seek Eagle*	PROJECT 674037: *SEEK EAGLE Certifications*

The SEEK EAGLE program does not execute in accordance with established acquisition program milestones. Each aircraft/store configuration requested by the user goes through the SEEK EAGLE process by the designated user priority.

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207590F: *Seek Eagle*	**PROJECT** 674037: *SEEK EAGLE Certifications*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
LJDAM	1	2010	4	2012
JASSM	1	2010	4	2012
SDB	1	2010	4	2012
AIM-9X	1	2010	4	2012
AIM-120	1	2010	4	2012
WCMD	1	2010	4	2012
MALD	1	2010	4	2012
SNIPER VDL	1	2010	4	2012
LITENING GEN 4	1	2010	4	2012
BRU-57	1	2010	4	2012
BLU-129	1	2010	4	2012
AGM-65L	1	2010	4	2012
MXU-1010	1	2010	4	2012
AN/ASQ-T50	1	2010	4	2012
BDU-50	1	2010	4	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	26.221	21.638	23.091	-	23.091	20.928	21.407	21.871	22.139	Continuing	Continuing
674567: *M&S Foundations*	5.941	5.976	6.488	-	6.488	6.578	6.622	6.522	6.637	Continuing	Continuing
674991: *Accelerated Acquisitions*	4.617	4.676	5.235	-	5.235	5.308	5.388	5.466	5.563	Continuing	Continuing
675004: *New and Emerging Capabilities*	-	-	1.351	-	1.351	-	-	-	-	Continuing	Continuing
675135: *Warfighter Readiness*	15.663	10.986	10.017	-	10.017	9.042	9.397	9.883	9.939	Continuing	Continuing

A. Mission Description and Budget Item Justification

United States Air Force (USAF) Modeling & Simulation (M&S) Program Element (PE) is broken into four thrust areas: Modeling and Simulation Foundations, Accelerated Acquisition, New and Emerging Warfighting Capabilities, and Warfighter Readiness. It directly supports Air Force, Joint, Coalition composite training and rehearsal, concept development, and acquisition and testing through model and simulation development as well as the integration of these across and within Live, Virtual, and Constructive (LVC) environments. This program focuses on support of Department of Defense (DoD) Training Transformation (T2), acquisition excellence initiatives, and foundational capabilities needed for interoperability, accessibility, reuse, and scalability. It allows the authoritative portrayal of new and emerging Air Force capabilities within Army, Navy, Marines, OSD, interagency, and coalition LVC environments; as well as reciprocating their capabilities within our Air Force LVC environments. LVC environments today are used as the most cost effective means to meet mission needs, the most practical means, and sometimes the only way. In support of the DoD T2 initiative, USAF M&S program thrust areas develop and modernize models and simulations that are the constructive backbone of Air Force and Joint Training and Rehearsal. Once these models and simulations are developed, they are integrated across training LVC environments for use by Major and Combatant Commands. This development and integration is imperative to ensure that air, space, and cyberspace training and mission rehearsal activities are supported with realistic, interoperable, and readily available tools, data, and services. These, in turn, enable joint, coalition, and interagency training required to prepare forces for combat by generating the air and space picture for the Air and Space Operations Center (AOC), Joint Force Air Component Commander (JFACC), and Joint Force Commander in combat exercises; training over 30,000 personnel per year in exercises (e.g., Ulchi Freedom Guardian, Red & Blue Flags, Unified Endeavor, etc). These programs also provide the current foundational environment that enables warfighters to interact with high-fidelity tactical cockpit simulators, like 5th Gen and beyond, which replicate High Demand/Low Density platforms that are often unavailable for training due to real-world operations; while simultaneously linking it to warfighters using their current command and control systems 1,000 miles away and the constructive simulations being run from key operational wargaming and simulation centers worldwide. USAF M&S is integral to inter-agency Homeland Defense exercises chartered to train combat units tasked to protect the Homeland, including the National Capital Region (exercise Amalgam Arrow); generates equipment and manpower efficiencies by using simulations which reduce fuel consumption, aircraft wear and tear, and manpower costs. In support of the DoD drive to improve the effectiveness and efficiency of its enterprise-wide acquisition business processes, the USAF M&S PE develops and supports enhancements to models, simulations, tools, and the LVC infrastructure to provide for system-of-systems M&S capabilities across the lifecycle, reduce developmental costs, and minimize risks. These capabilities support the acquisition process from concept development through test and evaluation. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207601F: *USAF Modeling and Simulation*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	27.161	21.638	24.830	-	24.830
Current President's Budget	26.221	21.638	23.091	-	23.091
Total Adjustments	-0.940	-	-1.739	-	-1.739
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.826	-			
• Other Adjustments	-0.114	-	-1.739	-	-1.739

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 674567: *M&S Foundations*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674567: *M&S Foundations*	5.941	5.976	6.488	-	6.488	6.578	6.622	6.522	6.637	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Modeling and Simulation Foundations (MSF) focuses on integrating foundational capabilities needed to improve the usefulness, productivity, scalability and efficiency of Modeling and Simulation (M&S) capabilities derived from the Warfighter Readiness (WR) thrust, the Accelerated Acquisitions (AA) thrust, and the New and Emerging Warfighting Capabilities (NEWC) thrust. MSF is the: standards, policies, procedures, architectures, and tools that enable the rapid and efficient composition of distributed environments to support both the warfighter needs and the US Air Force's (USAF) functional communities of: acquisition, training, planning, analysis, testing, training, education, and experimentation requirements. The efforts supporting the MSF thrust include both concept exploration and development. Activities also include studies and analysis to support both current program planning and execution and future program planning. This also funds the USAF in its capacity as the Department of Defense (DoD) Modeling and Simulation Executive Agent (MSEA) for the Aerospace Natural Environment. MSF's objective is to establish a USAF Live-Virtual-Constructive-Integrated Architecture (LVC-IA) that provides a persistent network of constructive computer simulations, man-in-the-loop virtual simulators, and live forces/resources in an interoperable environment that supports USAF organizations and the functional communities. This objective will be achieved by MSF providing tools, standards and interfaces to be used by model developers and users to ensure efficiencies and model reuse. MSF provides the capability to rapidly and efficiently create realistic and accurate synthetic operational battlespaces to support the full spectrum of activities associated with concept development to acquisition and testing through composite training and mission rehearsal. This is done by providing appropriate authoritative data and component representations. With the capability generated via MSF, users will readily access available repositories of reusable, validated, and integrated synthetic components. Synthetic components include representations of operational battlespace entities (such as friendly and enemy assets) and representations of the natural environment that include the terrain, atmospheric and space weather effects; and energy and signal propagation effects. The rapid composition is based on a durable common architecture framework, policies, and common standards. MSF capability also supports: efficient, cost-effective verification, validation, and accreditation activity across all of the M&S functional and organizational communities. As the DoD Air and Space Natural Environment Modeling and Simulation Executive Agent (ASNE MSEA), the Air Force coordinates all aspects of DoD M&S related to representations of the air and space natural environment. The tools developed through this include the Environmental Scenario Generator, the Environmental Data Cube Support System, and the Space Weather Analysis. ASNE MSEA collaborates with other national partners to provide the USAF and DoD access to authoritative natural environment scenarios necessary for robust "What-if" mission planning and rehearsal and for realistic training, analysis, and acquisition. ASNE MSEA leads the development and execution of the DoD Integrated Natural Environment Authoritative Representation Process (INEARP) Concept of Operations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: M&S Foundations (LVC-IA/M&S Workforce)	4.946	4.985	5.493	-	5.493
Description: Provide M&S Foundations (MSF) support to: Live, Virtual, and Constructive(LVC) - Integrating Architecture (IA), M&S Workforce, concept exploration, model development, and model transition effort.					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 674567: *M&S Foundations*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE). Continue development of the Scenario Generation System. ***FY 2011 Plans:*** Certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE) and development of the Scenario Generation System. Begin the implementation and RDT&E of a standardized Integrated Architecture for the Live-Virtual-Constructive enterprise. ***FY 2012 Base Plans:*** Certifies and accredits the Air, Space, and Cyberspace Constructive Environment (ASCCE) and development of the Scenario Generation System. Begins the implementation and RDT&E of a standardized Integrated Architecture for the Live-Virtual-Constructive enterprise. ***FY 2012 OCO Plans:***					
Title: Air & Space Natural Environment ***Description:*** Provide DoD M&S community with tools to search Air & Space Natural Environment (ASNE) scenarios; measure effects on weapon systems and subsystems and distribute tailored reusable databases and products. ***FY 2010 Accomplishments:*** Develops the Air and Space Natural Environment (ASNE) capabilities. ***FY 2011 Plans:*** Develop the Air and Space Natural Environment (ASNE) capabilities. Begin the implementation and RDT&E of a standardized Integrated Architecture for the Live-Virtual-Constructive enterprise. ***FY 2012 Base Plans:*** Development of the Air and Space Natural Environment (ASNE) capabilities. Begins the implementation and RDT&E of a standardized Integrated Architecture for the Live-Virtual-Constructive enterprise. ***FY 2012 OCO Plans:***	0.995	0.991	0.995	-	0.995
Accomplishments/Planned Programs Subtotals	5.941	5.976	6.488	-	6.488

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207601F: *USAF Modeling and Simulation*	**PROJECT** 674567: *M&S Foundations*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

OAS, Kirtland AFB, NM manages the acquisition and incremental development process for all M&S Foundation activities. All major contracts will be awarded after full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 674567: *M&S Foundations*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LVC-IA/Workforce/Concept Refinement, Technology, services, and tools support	Various	Various:Various,	4.946	4.985	Oct 2010	5.493	Oct 2011	-		5.493	Continuing	Continuing	TBD
ASNE (Services, Tools, and Environmental support)	Various	Various:Various,	0.995	0.991	Oct 2010	0.995	Oct 2011	-		0.995	Continuing	Continuing	TBD
		Subtotal	5.941	5.976		6.488		-		6.488			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

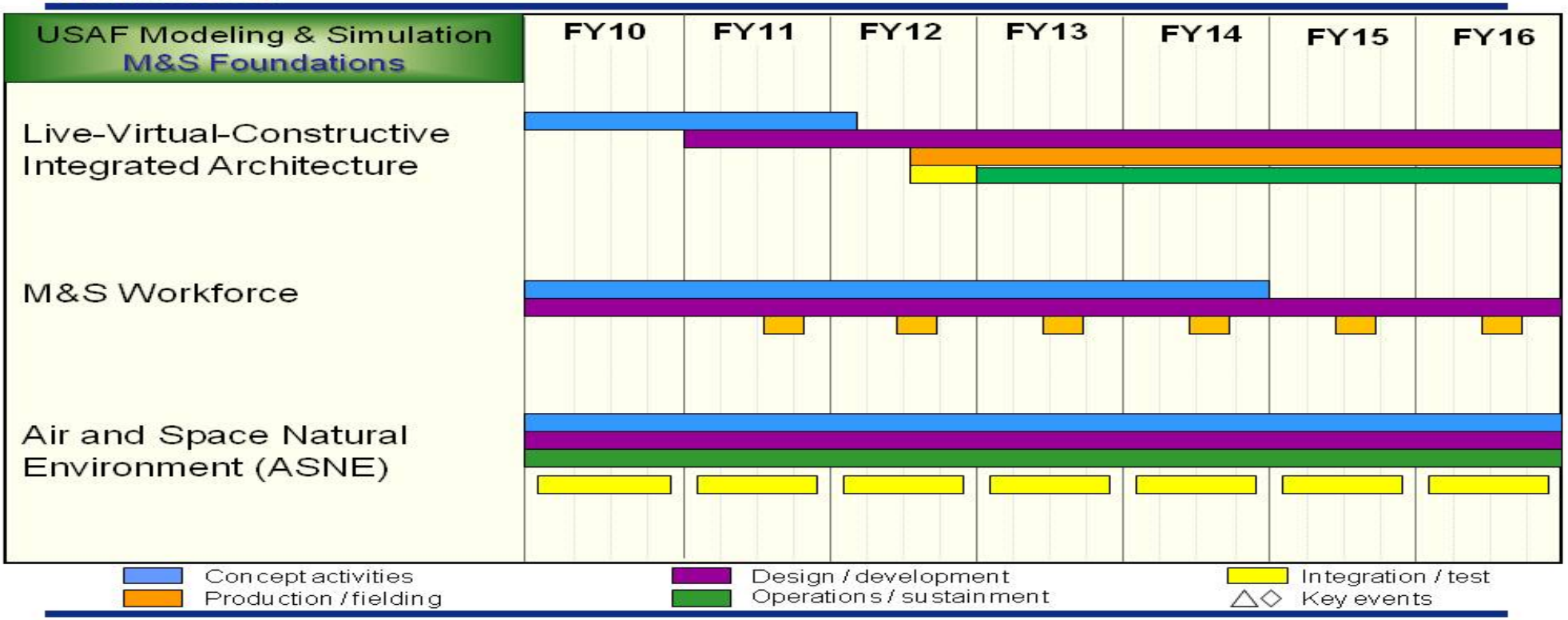
	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.941	5.976		6.488		-		6.488			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 674567: *M&S Foundations*

PE 27601 – USAF Modeling & Simulation
M&S Foundations (674567) Schedule

U.S. AIR FORCE



Integrity - Service - Excellence

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207601F: *USAF Modeling and Simulation*	**PROJECT** 674567: *M&S Foundations*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Live-Virtual-Constructive Integrated Architecture	1	2010	4	2016
M&S Workforce (Human Capital Strategy/Awareness & Culturization)	1	2010	4	2016
ASNE (National Data Centers/Tools and Services)	1	2010	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 674991: *Accelerated Acquisitions*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674991: *Accelerated Acquisitions*	4.617	4.676	5.235	-	5.235	5.308	5.388	5.466	5.563	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Accelerated Acquisition (AA) focuses on fostering M&S tools, data, and infrastructure to enable high confidence acquisition of capabilities to support the joint warfighter. This includes Live-Virtual-Constructive (LVC) infrastructure, tools and processes supporting LVC events, and models, tools, data, simulations/stimulation to support requirements definition, systems engineering and test activities. Activities also include M&S support for studies and analysis to support both current program planning and execution and future program planning. These efforts will enable more efficient delivery of effective capabilities to the warfighter while reducing the time and resources required for design, development, test and evaluation, maintainability and sustainment. A key objective is to improve interoperability of weapon systems and platforms through continuing, rigorous interoperability evaluation in a representative Joint Mission Environment. Additionally, AA activities seek to reduce risk associated with acquisition programs by influencing models, simulations, tools, data and infrastructure linking combat system engineering sites to facilitate concept exploration, development and assessment of systems in a net-centric mission context. This provides the capability to improve both Service and Joint system performance in a system-of-systems environment. Connectivity established by the infrastructure builds upon existing Service and Joint combat system engineering and test sites, such as C4I hardware in the loop and computer-program-in-the-loop engineering sites (including design activities, software support activities, test & evaluation facilities and training commands). Development includes concept of operations, business rules, and procedures to enable acquisition managers to effectively use LVC capabilities. These efforts enable accurately represented Command, Control, Communications, Computer, and Intelligence (C4I) networks for capability requirement definition, development, and testing activities to evaluate those systems for interoperability and integration into a joint environment. This will address interoperability issues by providing a means for discovering issues early on.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Architecture & Links ***Description:*** Continue communications architectures and network support ***FY 2010 Accomplishments:*** Supported development and maturation of collaborative processes and capabilities to support systems-of-systems assessments. This includes: capability builds for infra-red, digital radio, airborne network data-link, integrated air defense representation; advanced reconfigurable fighter, tactical data-links and electronic warfare; processes to support use case and scenario tractability to the analytic agenda; collaborative assessment process refinement; and definition and refinement of model code language and architecture. ***FY 2011 Plans:***	0.147	0.155	0.174	-	0.174

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 674991: *Accelerated Acquisitions*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Will continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.). ***FY 2012 Base Plans:*** Will continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.). ***FY 2012 OCO Plans:***					
Title: Event Coordination ***Description:*** Continue to support LVC events to assist in Air Force requirements definition, development and T&E activities ***FY 2010 Accomplishments:*** Supported development and maturation of collaborative processes and capabilities to support systems-of-systems assessments. This includes: capability builds for infra-red, digital radio, airborne network data-link, integrated air defense representation; advanced reconfigurable fighter, tactical data-links and electronic warfare; processes to support use case and scenario tractability to the analytic agenda; collaborative assessment process refinement; and definition and refinement of model code language and architecture. ***FY 2011 Plans:*** Will continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.). ***FY 2012 Base Plans:*** Will continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.). ***FY 2012 OCO Plans:***	0.221	0.225	0.253	-	0.253
Title: M&S Tools ***Description:*** Develop, enhance and verify models, tools, data, simulations/stimulation environments for systems engineering and test activities ***FY 2010 Accomplishments:***	3.474	3.505	3.970	-	3.970

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 674991: *Accelerated Acquisitions*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Supported development and maturation of collaborative processes and capabilities to support systems-of-systems assessments. This includes: capability builds for infra-red, digital radio, airborne network data-link, integrated air defense representation; advanced reconfigurable fighter, tactical data-links and electronic warfare; processes to support use case and scenario tractability to the analytic agenda; collaborative assessment process refinement; and definition and refinement of model code language and architecture. ***FY 2011 Plans:*** Will continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.). ***FY 2012 Base Plans:*** Will continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.). ***FY 2012 OCO Plans:***					
Title: Joint Service Integration ***Description:*** Continue to support Joint Service integration & test ***FY 2010 Accomplishments:*** Supported development and maturation of collaborative processes and capabilities to support systems-of-systems assessments. This includes: capability builds for infra-red, digital radio, airborne network data-link, integrated air defense representation; advanced reconfigurable fighter, tactical data-links and electronic warfare; processes to support use case and scenario tractability to the analytic agenda; collaborative assessment process refinement; and definition and refinement of model code language and architecture. ***FY 2011 Plans:*** Will continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.). ***FY 2012 Base Plans:*** Will continue to support development and maturation of collaborative processes and capabilities to support systems-of-systems assessments (e.g. airborne network assessments, air-ground layer interaction, etc.). ***FY 2012 OCO Plans:***	0.775	0.791	0.838	-	0.838
Accomplishments/Planned Programs Subtotals	4.617	4.676	5.235	-	5.235

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207601F: *USAF Modeling and Simulation*	**PROJECT** 674991: *Accelerated Acquisitions*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

SAF/A6 provides oversight of the Accelerated Acquisition project. Various Air Force activities incrementally develop, verify, and validate models, tools, data and simulations/simulation environments. All major contracts will be awarded after full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 674991: *Accelerated Acquisitions*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Architecture & Links	Various	Various:Various,	0.147	0.155	Nov 2010	0.174	Nov 2011	-		0.174	Continuing	Continuing	TBD
Event Coordination	Various	Various:Various,	0.221	0.225	Nov 2010	0.253	Nov 2011	-		0.253	Continuing	Continuing	TBD
Model, Tool, Data, Simulation Development & Verification	Various	Various:Various,	3.474	3.505	Nov 2010	3.970	Oct 2011	-		3.970	Continuing	Continuing	TBD
Joint Service Integration	Various	Various:Various,	0.775	0.791	Nov 2010	0.838	Oct 2011	-		0.838	Continuing	Continuing	TBD
		Subtotal	4.617	4.676		5.235		-		5.235			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

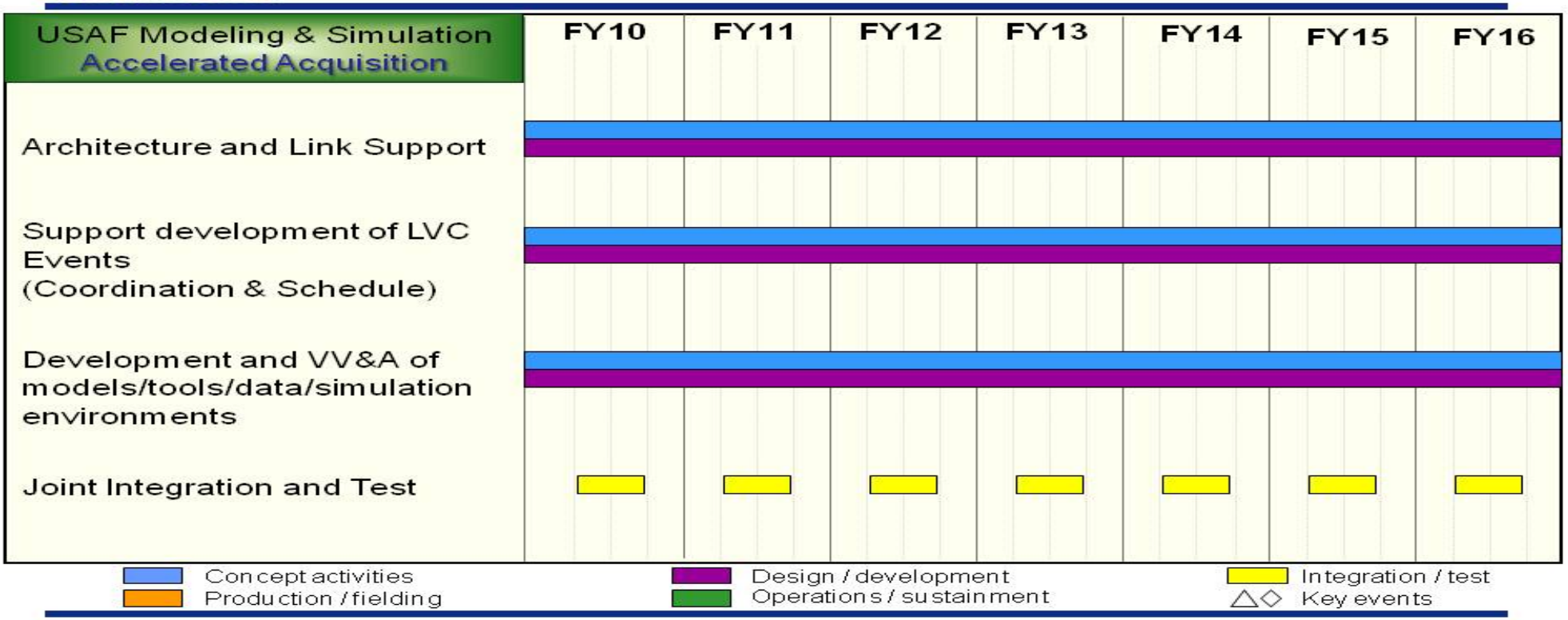
	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.617	4.676		5.235		-		5.235			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 674991: *Accelerated Acquisitions*

PE 27601 – USAF Modeling & Simulation Accelerated Acquisition (674991) Schedule

U.S. AIR FORCE



Integrity - Service - Excellence

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207601F: *USAF Modeling and Simulation*	**PROJECT** 674991: *Accelerated Acquisitions*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Architecture & Link Support	1	2010	4	2016
Event development of LVC Events	1	2010	4	2016
Development and VV&A of models, tools, data, simulation/stimulation environments	1	2010	4	2016
Joint Integration & Test	2	2010	3	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 675004: *New and Emerging Capabilities*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675004: *New and Emerging Capabilities*	-	-	1.351	-	1.351	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The New and Emerging Capabilities are a collection of short-term, special M&S programs requiring rapid prototype and fielding. These capabilities meet Air, Space, or Cyberspace gaps identified by Air Force Major Commands, U.S. Combatant Commands, or Agencies; address Air Force core competencies; ensure Air Force's force structure or power projections are appropriately represented in DoD, Joint, and Service training, rehearsal, and assessments; ensure interoperability of simulations among weapon system programs; and field initial Air Force capabilities in support of Department of Defense priorities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: JCAS Mobile Synthetic Training System	-	-	1.351	-	1.351
Description: Provides persistent, mobile, on-demand Battlefield Airman Training.					
FY 2010 Accomplishments:					
FY 2011 Plans:					
FY 2012 Base Plans: Provides persistent, mobile, on-demand Battlefield Airman Training, specifically Joint Terminal Attack Controller (JTAC) training, using synthetic Predator/Reaper imagery and/or Fighter/Bomber Advanced Targeting Pod feeds. Training will be accomplished on designated Air Force and Joint ranges and (e.g. Nellis Range Complex, Fort Irwin National Training Center, and Fort Polk Joint Readiness Training Center) and designated military operating areas using Live, Virtual and Constructive Integrated M&S.					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	-	-	1.351	-	1.351

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 675004: *New and Emerging Capabilities*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

All contract in NEWC will use full and open competion.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 675004: *New and Emerging Capabilities*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
New and Emerging Capabilities	Various	Various:Various,	-	-		1.351	Oct 2011	-		1.351	0.000	1.351	1.351
		Subtotal	-	-		1.351		-		1.351	0.000	1.351	1.351

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

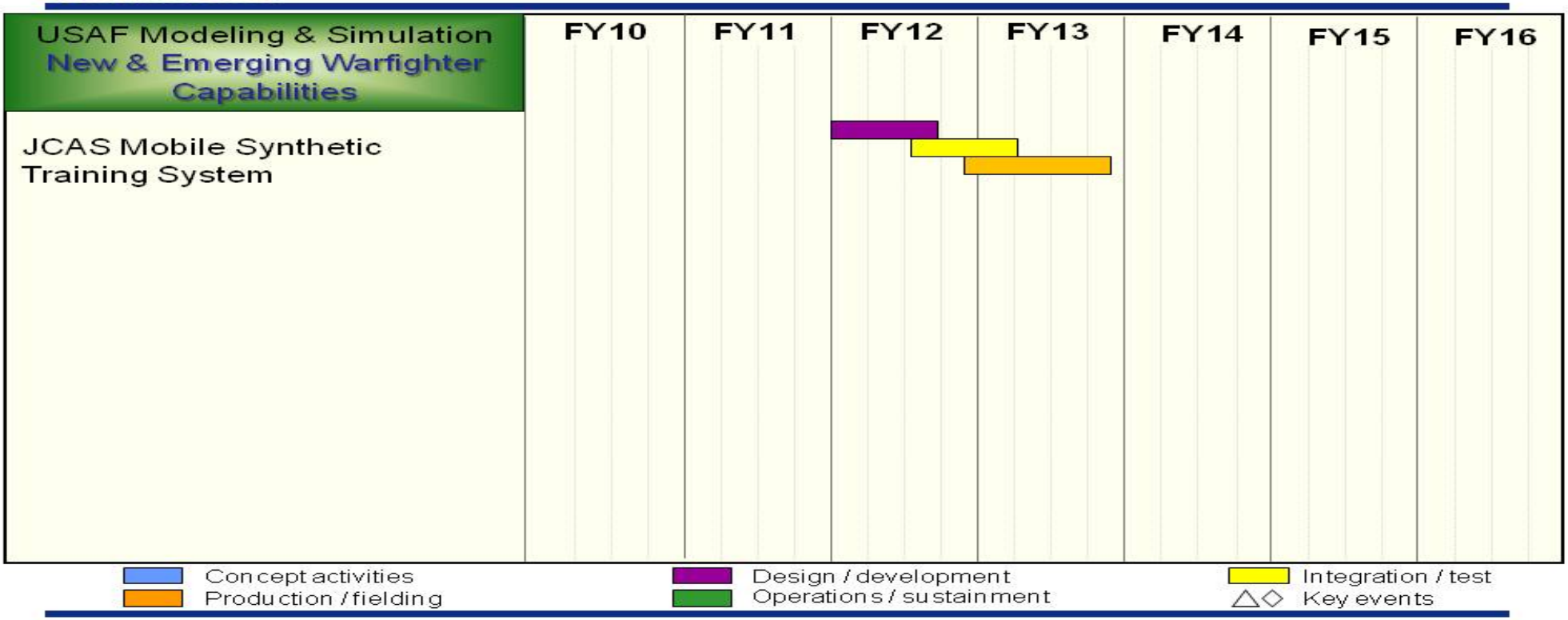
	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		1.351		-		1.351	0.000	1.351	1.351

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 675004: *New and Emerging Capabilities*

PE 27601 – USAF Modeling & Simulation
New & Emerging Capabilities (675004) Schedule

U.S. AIR FORCE



Integrity - Service - Excellence

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207601F: *USAF Modeling and Simulation*	**PROJECT** 675004: *New and Emerging Capabilities*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
New and Emerging Capabilities	1	2012	4	2013

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 675135: *Warfighter Readiness*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675135: *Warfighter Readiness*	15.663	10.986	10.017	-	10.017	9.042	9.397	9.883	9.939	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Modeling and Simulation support to our Warfighter's Readiness is a United States Air Force (USAF) corporate imperative to ensure air, space, cyberspace training, and mission rehearsal activities are supported with realistic, interoperable, and readily available, tools, data, services and environments. Warfighter Readiness supports Department of Defense (DoD) Training Transformation (T2) and Joint National Training Capability (JNTC) along with the USAF priorities and core functions. It includes several complimentary programs, initiatives and areas for investment: Warfighter and Joint Training Integration supports the Chief of Staff of the Air Force (CSAF) directed Live-Virtual-Constructive (LVC) Integration efforts and is a critical piece to the USAF's implementation of the Strategic Plan for Transforming DoD Training. The goal of LVC training and mission rehearsal is to prepare our warfighters for the full range of military operations and maintain the combat readiness levels required by the Combatant Commands (COCOMs). This can only be accomplished by training and rehearsing in realistic operational environments. These environments include live training ranges and virtual simulators enhanced with constructive entities. Specific training and mission rehearsal events can include some or all of these simultaneously; making the ability to integrate LVC capabilities a necessity. The Air, Space, and Cyberspace Constructive Environment (ASCCE) is the USAF's authoritative federation of constructive training models and tools realistically representing the tactical and operational capabilities the USAF brings to the Joint fight. It includes: 1) The Air Force Modeling and Simulation Training Toolkit (AFMSTT), which provides the authoritative representation of Air Force and Joint theater-level air and space power and is used to train Air and Space Operations Center (AOC) personnel and Combat Commanders (COCOM) battle staffs. The primary model in the AFMSTT is the Air Warfare Simulation (AWSIM). 2) The Information Operations Suite (IOS), which provides the authoritative representation of Air Force information operations. IOS is comprised of a suite of models that support training and mission rehearsal for the Air Force, Joint Task Force commanders, and COCOM battle staffs during Joint and Service exercises and experimentations. Other capabilities, such as the Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) provide for Intelligence, Surveillance, and Reconnaissance (ISR) training and exercise support by using virtual simulators and constructive models for command and staff level training. These capabilities provide commanders, staffs, and operators with common training systems for the employment, tasking, exploitation and dissemination of imagery. The Joint Training Transformation Initiative (JTTI) is a CSAF and Chief of Staff of the Army initiative to improve air, space, and cyberspace power fidelity to the Battle Command Training Program (BCTP), a US Army training event for senior commanders and their staffs, as well as improving ground component fidelity to Air Force operational-level exercises.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Air, Space, and Cyberspace Constructive Environment (ASCCE)	9.101	9.486	9.040	-	9.040
Description: Air Force Modeling & Simulation Training Toolkit (AFMSTT) Modernization/Information Operations Suite (IOS)/Air Warfare Simulation (AWSIM)					
FY 2010 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 675135: *Warfighter Readiness*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Maintain, improve, certify, and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE) and integrated with other Service models in support of major Service, Joint, and COCOM exercises, experiments, and mission rehearsals. ***FY 2011 Plans:*** Maintain, improve, certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE) and integrated with other Service models in support of major Service, Joint, and COCOM exercises, experiments, and mission rehearsals. ***FY 2012 Base Plans:*** Maintain, improve, certify and accredit the Air, Space, and Cyberspace Constructive Environment (ASCCE) and integrated with other Service models in support of major Service, Joint, and COCOM exercises, experiments, and mission rehearsals. ***FY 2012 OCO Plans:***					
Title: DMOI/Warfighter & JTTI ***Description:*** Distributed Mission Operations Integration (DMOI)/Warfighter & Joint Training Integration (JTTI) ***FY 2010 Accomplishments:*** DMOI/Warfighter & Joint Training Integration (JTTI) ***FY 2011 Plans:*** DMOI/Warfighter & Joint Training Integration (JTTI) ***FY 2012 Base Plans:*** DMOI/Warfighter & Joint Training Integration (JTTI) ***FY 2012 OCO Plans:***	6.562	1.500	0.977	-	0.977
Accomplishments/Planned Programs Subtotals	15.663	10.986	10.017	-	10.017

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207601F: *USAF Modeling and Simulation*	**PROJECT** 675135: *Warfighter Readiness*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Electronic Systems Center (ESC) at Hanscom AFB, MA manages the Warfighter Readiness project. ESC incrementally develops, verifies and validates models, tools, data and simulations/simulation environments. All major contracts are awarded after full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 675135: *Warfighter Readiness*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AFMSTT Modernization/ IOS (Air Warfare Simulation (AWSIM))	Various	ESC:Hanscom AFB, MA	9.101	9.486	Dec 2010	9.400	Dec 2011	-		9.400	Continuing	Continuing	TBD
DMOI/Warfighter & Joint Training Integration/JTTI	Various	ESC:Hanscom AFB, MA	6.562	1.500	Dec 2010	0.617	Dec 2011	-		0.617	Continuing	Continuing	TBD
		Subtotal	15.663	10.986		10.017		-		10.017			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	15.663	10.986		10.017		-		10.017			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207601F: *USAF Modeling and Simulation*	PROJECT 675135: *Warfighter Readiness*

PE 27601 – USAF Modeling & Simulation Warfighter Readiness (675135) Schedule

U.S. AIR FORCE

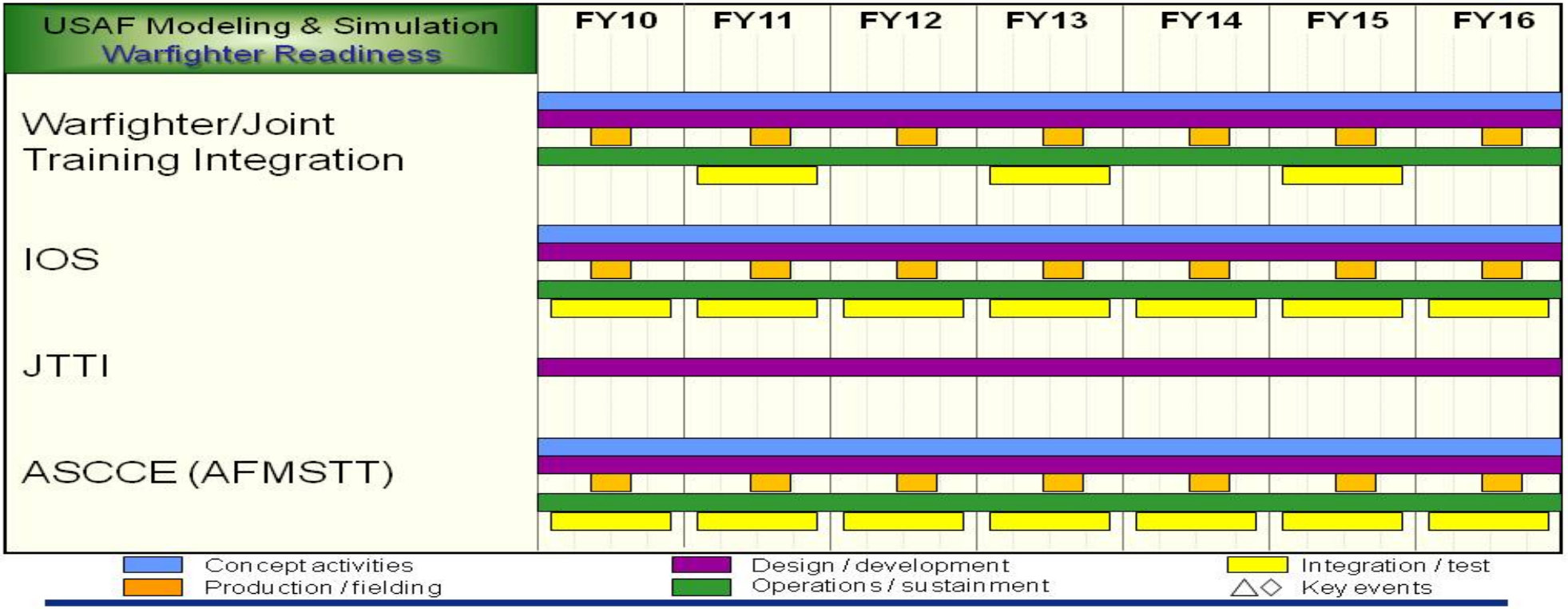


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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207601F: *USAF Modeling and Simulation*	**PROJECT** 675135: *Warfighter Readiness*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Warfighter/Joint Training Integration	1	2010	4	2016
Information Operations Suite (IOS)	1	2010	4	2016
Joint Training Transformation Initiative (JTTI)	1	2010	4	2016
Air, Space, and Cyberspace Constructive Environment (ASCCE) Air Force Modeling & Simulation Training Toolkit (AFMSTT)	1	2010	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207605F: *Wargaming and Simulation Centers*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	6.790	6.020	5.779	-	5.779	5.594	5.668	5.752	5.856	Continuing	Continuing
672888: *Distributed Mission Operations Center (DMOC)*	6.790	6.020	5.779	-	5.779	5.594	5.668	5.752	5.856	Continuing	Continuing

Note

The program funding includes reductions for Air Force efficiencies that are not intended to impact program content. The efficiencies reductions total $.118M in FY12.

A. Mission Description and Budget Item Justification

The United States Air Force (USAF) Distributed Mission Operations Center (DMOC) is an Air Combat Command, USAF Warfare Center, 505th Command and Control Wing (505th CCW) organization. It provides joint interoperability training and testing to geographically separated Live, Virtual, and Constructive (LVC) assets--real-world weapon systems, operator-in-the-loop (OITL), and computer-driven simulations. Responsibilities include: development and integration of Distributed Mission Operations (DMO) training and test events, networks, scenarios, and databases in support of service, joint, and coalition warfighters. Activities also include studies and analysis to support both current program planning and execution and future program planning. DMOC is the lead integrator for Air Force DMO and virtual contributions to the Joint National Training Capability (JNTC). Additionally, DMOC is the lead agency for Virtual Flag (VF) exercises and the DMO Multi-Level Security (MLS)/Cross-Domain Solution (CDS) testbed. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	7.018	6.020	5.897	-	5.897
Current President's Budget	6.790	6.020	5.779	-	5.779
Total Adjustments	-0.228	-	-0.118	-	-0.118
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.199	-			
• Other Adjustments	-0.029	-	-0.118	-	-0.118

Change Summary Explanation

FY 2012: The program has been funded to latest cost estimate, less efficiencies. The reduction for efficiencies are not intended to impact program content. Amounts of the reductions are: $.118M/FY12, $.148M/FY13, $.148M/FY14, $.148M/FY15, $.148M/FY16.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207605F: *Wargaming and Simulation Centers*	PROJECT 672888: *Distributed Mission Operations Center (DMOC)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
672888: *Distributed Mission Operations Center (DMOC)*	6.790	6.020	5.779	-	5.779	5.594	5.668	5.752	5.856	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The program funding includes reductions for Air Force efficiencies that are not intended to impact program content. The efficiencies reductions total $.118M in FY12

A. Mission Description and Budget Item Justification

The United States Air Force (USAF) Distributed Mission Operations Center (DMOC) is an Air Combat Command, USAF Warfare Center, 505th Command and Control Wing (505th CCW) organization. It provides joint interoperability training and testing to geographically separated Live, Virtual, and Constructive (LVC) assets--real-world weapon systems, operator-in-the-loop (OITL), and computer-driven simulations. Responsibilities include: development and integration of Distributed Mission Operations (DMO) training and test events, networks, scenarios, and databases in support of service, joint, and coalition warfighters. Activities also include studies and analysis to support both current program planning and execution and future program planning. DMOC is the lead integrator for Air Force DMO and virtual contributions to the Joint National Training Capability (JNTC). Additionally, DMOC is the lead agency for Virtual Flag (VF) exercises and the DMO Multi-Level Security (MLS)/Cross-Domain Solution (CDS) testbed. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Mission Rehearsal	4.328	3.100	3.670	-	3.670
Description: Continue to maintain core structure to support users conducting RDT&E, mission rehearsal, and concepts of operation development					
FY 2010 Accomplishments: Developed Next Generation Threat System (NGTS) core architecture to improve system performance and create sustainable baseline. Develop Combat Air Force (CAF) DMO, Joint, and International (Modeling and Simulation) M&S standards. Develop Combat Survivor Evader Locator for integration into VF. Develop other capabilities to integrate systems into VF and monitor system performance.					
FY 2011 Plans: Will develop Red and Blue Air simulations and integrate ISR and Combat Air Support (CAS) simulators.					
FY 2012 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207605F: *Wargaming and Simulation Centers*	PROJECT 672888: *Distributed Mission Operations Center (DMOC)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue to develop Red and Blue Air simulations and integrate ISR and Combat Air Support (CAS) simulators. ***FY 2012 OCO Plans:***					
Title: V,V & A ***Description:*** Continue to support requirements definition, test support, scenario development, analysis, systems engineering support, and Verification, Validation, and Accreditation (VV&A) of core systems ***FY 2010 Accomplishments:*** Developed Next Generation Threat System (NGTS) core architecture to improve system performance and create sustainable baseline. Develop CAF DMO, Joint, and International M&S standards. Develop Combat Survivor Evader Locator for integration into VF. Develop other capabilities to integrate systems into VF and monitor system performance. ***FY 2011 Plans:*** Will develop Red and Blue Air simulations and integrate ISR and CAS simulators. ***FY 2012 Base Plans:*** Continue to develop Red and Blue Air simulations and integrate ISR and Combat Air Support (CAS) simulators. ***FY 2012 OCO Plans:***	0.676	1.215	1.177	-	1.177
Title: DMOC Ops ***Description:*** Communications connectivity between DMOC and various other operational and modeling & simulation (M&S) facilities ***FY 2010 Accomplishments:*** Developed Next Generation Threat System (NGTS) core architecture to improve system performance and create sustainable baseline. Develop CAF DMO, Joint, and International M&S standards. Develop Combat Survivor Evader Locator for integration into VF. Develop other capabilities to integrate systems into VF and monitor system performance. ***FY 2011 Plans:*** Will develop Red and Blue Air simulations and integrate ISR and CAS simulators. ***FY 2012 Base Plans:***	1.264	1.178	0.416	-	0.416

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207605F: *Wargaming and Simulation Centers*	PROJECT 672888: *Distributed Mission Operations Center (DMOC)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue to develop Red and Blue Air simulations and integrate ISR and Combat Air Support (CAS) simulators. ***FY 2012 OCO Plans:***					
Title: PMO Support ***Description:*** Program Management Office (PMO) support ***FY 2010 Accomplishments:*** Provided PMO support in the development of Next Generation Threat System (NGTS) core architecture to improve system performance and create sustainable baseline. ***FY 2011 Plans:*** Will provide PMO support in the development of Red and Blue Air simulations and integrate ISR and CAS simulators. ***FY 2012 Base Plans:*** Will provide PMO support in the development of Red and Blue Air simulations and integrate ISR and CAS simulators. ***FY 2012 OCO Plans:***	0.522	0.527	0.516	-	0.516
Accomplishments/Planned Programs Subtotals	6.790	6.020	5.779	-	5.779

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

The Distributed Mission Operations Center supports AF DMO and the Joint National Training Capability (JNTC) by awarding full and open contracts that manage the acquisition, development, testing, and integration of DMO standards, training, model and simulation, multi-level security testbed, and exercises on Air Force and Joint DMO networks.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207605F: *Wargaming and Simulation Centers*	PROJECT 672888: *Distributed Mission Operations Center (DMOC)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Rehearsals/Concept of Operations (Brief/Debrief and Mission Replay tools, Rapid Scenario Generation, Next Generation Threat System (NGTS) Dev, DMO "Flag" events)	C/CPFF	Lockheed Martin:705 CTS, Kirtland AFB, NM	4.328	3.100	Oct 2010	3.670	Oct 2011	-		3.670	Continuing	Continuing	TBD
Verify, Validate, and Accredit Core Systems (Common Battlespace Architecture, DMO Standards, MLS/CDS)	C/CPFF	Lockheed Martin:705 CTS, Kirtland AFB, NM	0.676	1.215	Oct 2010	1.177	Oct 2011	-		1.177	Continuing	Continuing	TBD
Communications Connectivity (DMO Architecture, Joint National Training Capabililty (JNTC) Warfighter Capability, LVC and Information Operations (IO) Range Integration)	C/CPFF	Lockheed Martin:705 CTS, Kirtland AFB, NM	0.408	0.428	Oct 2010	0.416	Oct 2011	-		0.416	Continuing	Continuing	TBD
		Subtotal	5.412	4.743		5.263		-		5.263			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical support for systems engineering and exercise operations	C/CPAF	Scientific Research:705 CTS, Kirtland AFB, NM	0.428	-		-		-		-	Continuing	Continuing	TBD
Tech support for systems engineering and exercise operations	C/CPFF	L-3 Comm Govt Svcs:705 CTS, Kirtland AFB, NM,	0.428	0.750	Apr 2011	-		-		-	Continuing	Continuing	TBD
		Subtotal	0.856	0.750		-		-		-			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207605F: *Wargaming and Simulation Centers*	PROJECT 672888: *Distributed Mission Operations Center (DMOC)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Office Support	C/CPFF	705 CTS:Kirtland AFB, NM	0.522	0.527	Oct 2010	0.516	Oct 2011	-		0.516	Continuing	Continuing	TBD
		Subtotal	0.522	0.527		0.516		-		0.516			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	6.790	6.020		5.779		-		5.779			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207605F: *Wargaming and Simulation Centers*	PROJECT 672888: *Distributed Mission Operations Center (DMOC)*

PE 27605 – Wargaming & Sim Centers

Distributed Mission Operations Center (672888) Schedule

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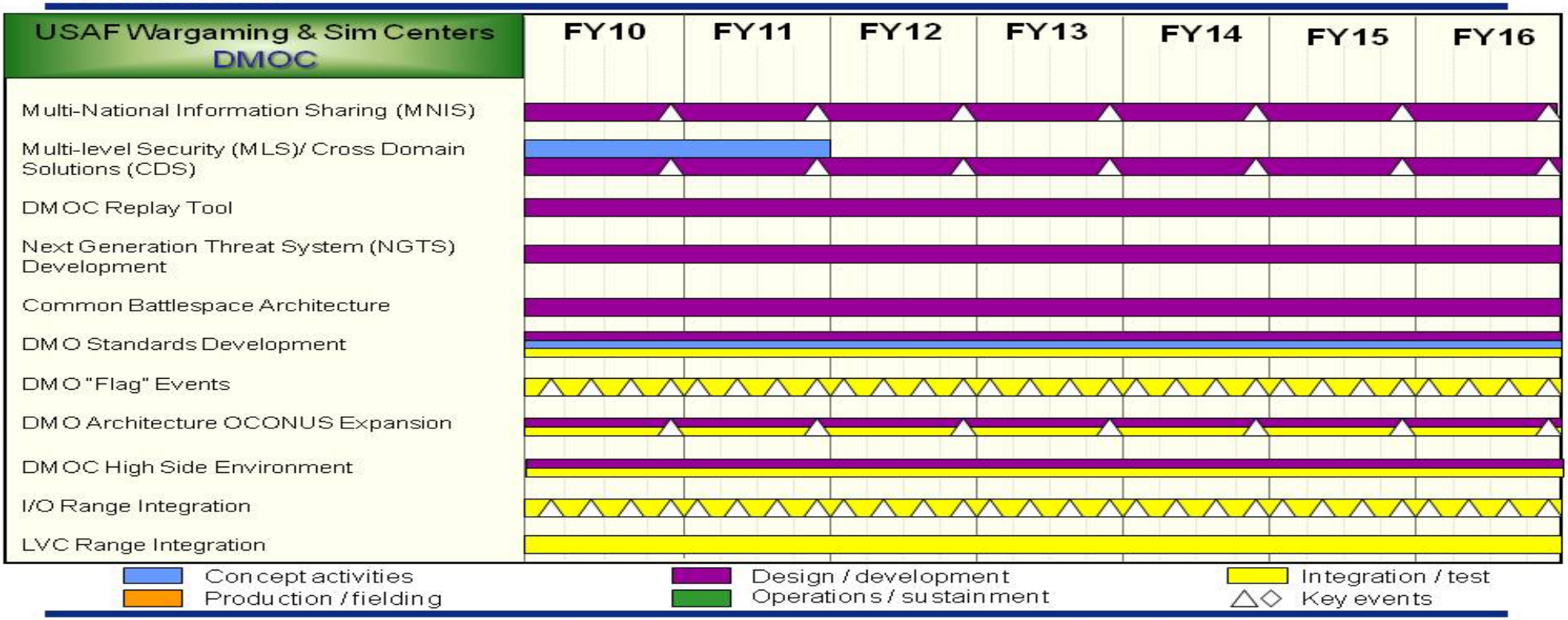

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207605F: *Wargaming and Simulation Centers*	**PROJECT** 672888: *Distributed Mission Operations Center (DMOC)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Multi-National Information Sharing (MNIS)	1	2010	4	2016
Multi-Level Security (MLS)/Cross-Domain Solutions (CDS)	1	2010	4	2016
DMOC Replay Tool	1	2010	4	2016
Next Generation Threat System Dev	1	2010	4	2016
Common Battlespace Architecture	1	2010	4	2016
DMO Standards Development	1	2010	4	2016
DMO "Flag" Events	1	2010	4	2016
DMO Architecture OCONUS Expansion	1	2010	4	2016
DMOC High Side Environment	1	2010	4	2016
IO Range Integration	1	2010	4	2016
LVC Range Integration	1	2010	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0207697F: *Distributed Training and Exercises*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	6.493	2.863	5.264	-	5.264	4.417	4.038	4.071	4.143	Continuing	Continuing
675190: *JFCOM Wargaming*	6.493	2.863	5.264	-	5.264	4.417	4.038	4.071	4.143	Continuing	Continuing

A. Mission Description and Budget Item Justification

In September 03, the AF/CV directed the establishment of an 11-person AF Liaison Office (LNO) at USJFCOM with representatives from across the AF to increase participation in joint transformation activities including joint concept development and experimentation and joint Doctrine, Organization, Training, Material, Leadership & Education, Personnel & Facilities (DOTMLPF) recommendations. Air Force A5XS ensures accurate representation of air and space capabilities in joint activities, through modeling and simulation and wargaming activities. This program is categorized in Budget Activity (BA) 07 because it supports the development efforts of operational systems.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	6.740	2.863	4.757	-	4.757
Current President's Budget	6.493	2.863	5.264	-	5.264
Total Adjustments	-0.247	-	0.507	-	0.507
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.247	-	0.507	-	0.507

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207697F: *Distributed Training and Exercises*	PROJECT 675190: *JFCOM Wargaming*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675190: *JFCOM Wargaming*	6.493	2.863	5.264	-	5.264	4.417	4.038	4.071	4.143	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

In September 03, the AF/CV directed the establishment of an 11-person AF Liaison Office (LNO) at USJFCOM with representatives from across the AF to increase participation in joint transformation activities including joint concept development and experimentation and joint Doctrine, Organization, Training, Material, Leadership & Education, Personnel & Facilities (DOTMLPF) recommendations. Air Force A5XS ensures accurate representation of air and space capabilities in joint activities, through modeling and simulation and wargaming activities. This program is categorized in Budget Activity (BA) 07 because it supports the development efforts of operational systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: MAJOR THRUST 1 ***Description:*** Develops air and space wargaming specific functionality in existing simulation and analysis tools (e.g., JWARS, THUNDER/STORM) ***FY 2010 Accomplishments:*** Develops air and space wargaming specific functionality in existing simulation and analysis tools (e.g., JWARS, THUNDER/STORM) ***FY 2011 Plans:*** Develops air and space wargaming specific functionality in existing simulation and analysis tools (e.g., JWARS, THUNDER/STORM) ***FY 2012 Base Plans:*** Develops air and space wargaming specific functionality in existing simulation and analysis tools (e.g., JWARS, THUNDER/STORM) ***FY 2012 OCO Plans:***	1.500	1.400	2.507	-	2.507
Title: MAJOR THRUST 2 ***Description:*** Provides for capabilities, Requirements, and Risk Assessment (CRRA) ***FY 2010 Accomplishments:***	1.600	0.500	1.000	-	1.000

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207697F: *Distributed Training and Exercises*	PROJECT 675190: *JFCOM Wargaming*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Provides for capabilities, Requirements, and Risk Assessment (CRRA) ***FY 2011 Plans:*** Provides for capabilities, Requirements, and Risk Assessment (CRRA) ***FY 2012 Base Plans:*** Provides for Capabilities, Requirements, and Risk Assessment (CRRA) ***FY 2012 OCO Plans:***					
Title: MAJOR THRUST 3 ***Description:*** Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation ***FY 2010 Accomplishments:*** Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation ***FY 2011 Plans:*** Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation ***FY 2012 Base Plans:*** Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation ***FY 2012 OCO Plans:***	1.500	0.500	0.757	-	0.757
Title: MAJOR THRUST 4 ***Description:*** Supplies platforms for software in operational environments and for programmed replacement costs ***FY 2010 Accomplishments:*** Supplies platforms for software in operational environments and for programmed replacement costs ***FY 2011 Plans:***	1.893	0.463	1.000	-	1.000

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207697F: *Distributed Training and Exercises*	PROJECT 675190: *JFCOM Wargaming*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Supplies platforms for software in operational environments and for programmed replacement costs ***FY 2012 Base Plans:*** Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	6.493	2.863	5.264	-	5.264

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

All contracts will be awarded based on full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207697F: *Distributed Training and Exercises*	PROJECT 675190: *JFCOM Wargaming*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	TBD	TBD:TBD,	6.493	2.863	Nov 2011	5.264	Nov 2012	-		5.264	Continuing	Continuing	TBD
		Subtotal	6.493	2.863		5.264		-		5.264			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	6.493	2.863		5.264		-		5.264			

Remarks

Note: Funding is for a continuous series of updates and modifications. There is no contract award associated with this funding.

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0207697F: *Distributed Training and Exercises*	PROJECT 675190: *JFCOM Wargaming*

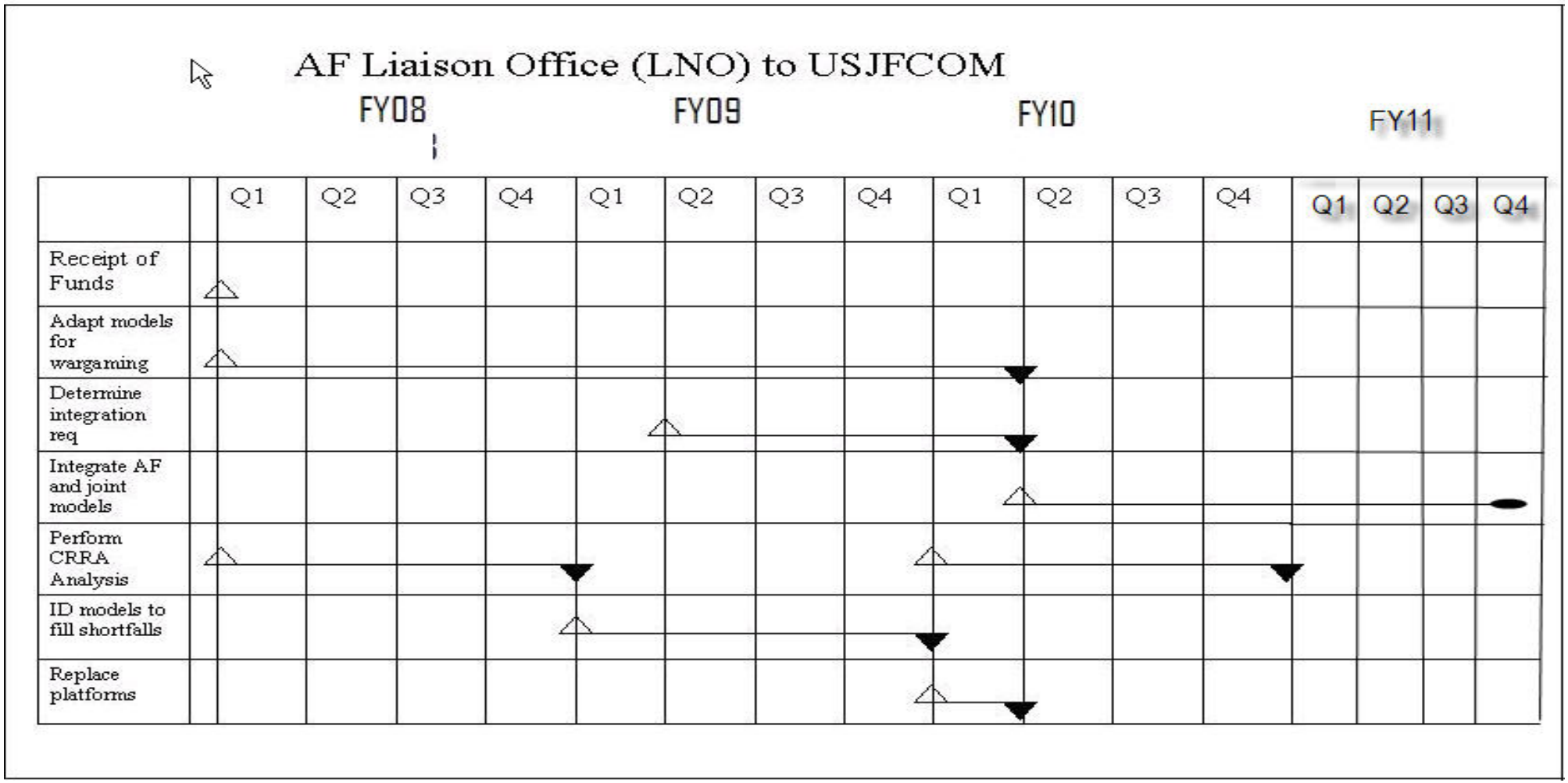

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207697F: *Distributed Training and Exercises*	**PROJECT** 675190: *JFCOM Wargaming*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Adapt STORM/THUNDER and JWARS for wargaming	1	2010	4	2011
Determine other model integration/adaptation requirements	2	2010	3	2011
Perform CRRA analysis biannually, integratin wargaming/CRAA processes.	1	2010	4	2011
Joint Concept Development and Implementation	3	2010	4	2011

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	76.650	83.555	69.918	-	69.918	72.037	78.534	90.995	92.164	Continuing	Continuing
673858: *Mission Planning Systems (MPS)*	74.776	37.273	29.991	-	29.991	30.092	33.651	35.381	37.398	Continuing	Continuing
675302: *Mobility Air Forces (MAF) Planning Systems*	1.874	6.110	4.256	-	4.256	4.340	8.557	15.309	17.458	Continuing	Continuing
675380: *Combat Air Forces (CAF) Planning Systems*	-	40.172	35.671	-	35.671	37.605	36.326	40.305	37.308	Continuing	Continuing

Note

In FY 2011, some Project 673858, Mission Planning Systems, efforts were transferred to PE 0208006F, Mission Planning Systems, Project 675302, Mobility Air Forces Planning Systems (previously titled Precision Aerial Delivery System) and Project 675380, Combat Air Forces Planning Systems, in order to more accurately group and reflect the products being developed within the program.

CY funding totals include $4.443 for Overseas Contingency Operations (OCO).

The program funding includes reductions for overhead efficiencies that are not intended to impact program content. The efficiencies reductions total $2.664M in FY12.

A. Mission Description and Budget Item Justification

Mission planning involves the creation of a flight plan based on threats, targets, terrain, weather, aircraft performance capability, and configuration. It is an essential task that must be completed prior to any fixed or rotary wing aircraft sortie. The planner must have the ability to plan weapon, cargo, passenger, and/or fuel delivery, calculate fuel requirements, and assess the route based on known enemy threat location and type. Mission planners must be able to optimize and de-conflict flight routes with other aircraft; review, print, and brief the mission plan; and download pertinent flight information to on-board aircraft avionics.

The Mission Planning Systems (MPS) program is a collaborative program with the Army and Navy to leverage technical solutions and business practices for all Department of Defense (DoD) platforms. It provides automated mission-planning tools and support for fixed and rotary wing aircraft and guided munitions. It will replace two closed architecture legacy mission planning systems (Unix-based MPS (Unix-MPS) and the PC-based Portable Flight Planning Software (PFPS)), with a single multi-service open architecture system more commonly referred to as the Joint Mission Planning System (JMPS). MPS will compress the mission planning cycle by providing an improved integrated planning environment, reducing the time required to respond to changing situations and urgent needs such as striking time sensitive/critical targets and conducting combat search and rescue. The MPS development program will migrate a variety of Air Force aircraft, weapons, and airdrop payload systems from legacy mission planners to MPS. These systems include the A-10, B-1B, C-5, C-17, C-130, E-3, E-8, F-15, F-16, F-22A, RC-135, HH-60, and their associated weapons (e.g. Small Diameter Bomb (SDB), Joint Direct Attack Munitions (JDAM), Joint Air-to-Surface Standoff Munitions (JASSM), etc…) and airdrop payloads. In addition, basic MPS products have the potential to support all DoD fixed-wing and rotary-wing aircraft and will be shared with other AF programs as

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0208006F: *Mission Planning Systems*

well as the Army and Navy. MPS will deliver significant benefits to command and control performance by enhancing information superiority for the warfighter and by providing unique capabilities in support of both precision engagement and dominant maneuver. Additionally, elements of Mission Planning Systems will be utilized to continue the development of a Joint Precision Airdrop System (JPADS) in conjunction with the Army.

The JPADS System of Systems (SoS) capability provides a planning and execution capability for DoD airdrop requirements. It is the primary airdrop mission planning and execution system when the mission profile or surface-to-air threat assessment warrants a high-altitude and/or standoff precision delivery. JPADS enables high-altitude, precise airdrop delivery to forward ground forces, mitigating surface-to-air threats, reducing risk of Improvised Explosive Device (IED) & insurgent attack on ground convoys. JPADS allows the warfighter to consider weather, terrain, aircraft capabilities, threat, etc…to accurately deliver payload.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	81.577	79.112	74.172	-	74.172
Current President's Budget	76.650	83.555	69.918	-	69.918
Total Adjustments	-4.927	4.443	-4.254	-	-4.254
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-2.100	-			
• SBIR/STTR Transfer	-2.485	-			
• Other Adjustments	-0.342	4.443	-4.254	-	-4.254

Change Summary Explanation

FY11 increase of $4.443M for Overseas Contingency Operations (OCO).

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 673858: *Mission Planning Systems (MPS)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
673858: *Mission Planning Systems (MPS)*	74.776	37.273	29.991	-	29.991	30.092	33.651	35.381	37.398	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Mission planning involves the creation of a flight plan based on threats, targets, terrain, weather, aircraft performance capability and configuration. It is an essential task that must be completed prior to any fixed or rotary wing aircraft sortie. The planner must have the ability to plan weapon, cargo, passenger, and/or fuel delivery, calculate fuel requirement and assess the route based on known enemy threat location and type. Mission planners must be able to optimize and de-conflict flight routes with other aircraft; review, print and brief the plan; and download pertinent flight information to on-board aircraft avionics.

This project provides for the continuous improvement of mission planning software capabilities that cut across all platforms and systems. It includes all FY10 and prior development activities for migrating selected CAF and MAF platforms to MPS. It also allows for the investigation of new technologies and products that have the potential for improving mission planning systems. This includes the continuous upgrading of the MPS framework. The framework is the underlying baseline for all mission planning systems. It will require continuous upgrades to: 1) reduce timelines for route planning; 2) transmit near real-time intelligence data to the platforms; 3) increase the accuracy of the mapping products; 4) provide a Windows-based, Commercial Off The Shelf-based, user friendly product; and 5) retain compatibility with platform changes to avionics and operational flight programs. Development and modernization activities within this project are as follows:

a. MPS Increment III - completes all FY10 and prior year development activities to migrate selected CAF and MAF platforms to the MPS Increment III planning systems capability. This includes the initial migration of all designated Increment III platforms.

b. MPS Increment IV - continues all FY10 and prior year development activities to migrate selected CAF and MAF platforms to the MPS Increment IV planning systems capability. This includes the initial migration of all designated Increment IV platforms. FY2011 and outyear development activities for Increment IV will be completed as part of respective projects for CAF and MAF planning systems.

c. MPS Modernization - continues the modernization of overarching technologies (including the framework) to support development of Mission Planning Environments (MPEs) for various CAF and MAF platforms.

d. Test, Training and Certification - continues all MPS-related integration, test, and certification activities for all CAF and MAF platforms.

e. Operational and Technical Support - continues all program office management operations and support activities to ensure the timely delivery of mission planning systems to the warfighter.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 673858: *Mission Planning Systems (MPS)*

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: MPS Increment III Development ***Description:*** Continue contractor-executed software development and test activities to migrate selected platforms to new MPS Increment III mission planning capability. ***FY 2010 Accomplishments:*** Completed development of F-22 Increment 3.1 v11 unique planning component (UPC) software and integration of common components to deliver the F-22 MPE to support the Operational Flight Program Follow-on Test and Evaluation. ***FY 2011 Plans:*** None - Initial development activities for Increment will be complete. ***FY 2012 Base Plans:*** None - development activities for this activity are complete. ***FY 2012 OCO Plans:***	3.039	-	-	-	-
Title: MPS Increment IV Development ***Description:*** Continue contractor-executed software development and test activities required to migrate selected CAF and MAF platforms to the new MPS Increment IV mission planning capability. ***FY 2010 Accomplishments:*** Continued the development, integration and migration of selected AF platforms from legacy planning systems to MPS as well as continuing the development of framework 1.4 software. ***FY 2011 Plans:*** Continue the development, testing, and fielding of FW 1.4 software. ***FY 2012 Base Plans:*** None - development activities for this activity are complete. ***FY 2012 OCO Plans:***	19.325	7.322	-	-	-
Title: MPS Modernization	30.564	10.135	12.188	-	12.188

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 673858: *Mission Planning Systems (MPS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Continues development (i.e. modernization) of MPEs for previously migrated platforms to enable use of new capabilities being developed in the Operational Flight Programs (OFPs). ***FY 2010 Accomplishments:*** Modernized previously-fielded mission planning software for selected platforms (e.g. B-1, F-15, and F-16 aircraft) ***FY 2011 Plans:*** Conduct system engineering and integration activities to support the continued modernization of previously migrated Combat Air Forces (CAF) and Mobility Air Forces (MAF) platforms and requirements analysis for updates to the MPS Framework (FW 1.5). ***FY 2012 Base Plans:*** Conduct system engineering and integration activities to support the continued modernization of previously migrated Combat Air Forces (CAF) and Mobility Air Forces (MAF) platforms and continue software development of Framework 1.5. ***FY 2012 OCO Plans:***					
Title: Test, Training and Certification ***Description:*** Continues Test, Training, and Certification (TT&C) activities to evaluate and ensure the operational performance of all newly developed and modernized MPS software and hardware. ***FY 2010 Accomplishments:*** Conducted and supported formal Government testing of software and other development efforts for MPS Increment III, MPS Increment IV, and MPS modernization efforts. ***FY 2011 Plans:*** Continue formal Government testing of software and other development efforts for MPS Increment IV and MPS modernization. ***FY 2012 Base Plans:*** Continue formal Government testing for MPS Increment IV, and MPS modernization efforts. ***FY 2012 OCO Plans:***	9.526	9.412	8.846	-	8.846
Title: Operations/Technical Support	12.322	10.404	8.957	-	8.957

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 673858: *Mission Planning Systems (MPS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Continues all program management office technical and administrative activities and operations necessary to support development and fielding of all MPS capabilities. ***FY 2010 Accomplishments:*** Provided technical support for MPS Increment III, MPS Increment IV and, MPS modernization activities. ***FY 2011 Plans:*** Provide technical support for MPS Increment IV and MPS modernization efforts. ***FY 2012 Base Plans:*** Provide technical support for MPS Increment IV and MPS modernization activities. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	74.776	37.273	29.991	-	29.991

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Mission Planning Systems utilizes an evolutionary acquisition approach to develop and deliver an interoperable, network-centric, mission planning system tailored for numerous Air Force platforms using competition and multiple contract vehicles.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 673858: *Mission Planning Systems (MPS)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Planning Enterprise Contract	C/Various	Various:Various,	64.439	1.826	Nov 2010	-		-		-	0.000	66.265	TBD
Mission Planning Enterprise Contract II	C/Various	Various:Various,	15.290	1.332	Nov 2010	3.572	Nov 2011	-		3.572	Continuing	Continuing	TBD
Systems Engineering and Integration	C/Various	Various:Various,	26.915	14.300	Nov 2010	2.728	Nov 2011	-		2.728	Continuing	Continuing	TBD
MPS Modernization	C/Various	Various:Various,	8.131	-		12.188	Nov 2011	-		12.188	Continuing	Continuing	TBD
		Subtotal	114.775	17.458		18.488		-		18.488			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Engineering Institute (SEI)	C/TBD	SEI:Pittsburgh, PA	0.300	0.300	Nov 2010	0.292	Nov 2011	-		0.292	Continuing	Continuing	TBD
Tecolote	C/TBD	Tecolote Inc:Bedford, MA	0.560	0.577	Nov 2010	0.678		-		0.678	Continuing	Continuing	TBD
		Subtotal	0.860	0.877		0.970		-		0.970			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Responsible Test Organization (RTO)	PO	46TW:Eglin AFB, FL	7.543	8.140	Nov 2010	2.270	Nov 2011	-		2.270	Continuing	Continuing	TBD
Certification and Accreditation	MIPR	JITC:Indian Head, MO	0.071	0.064	Jan 2011	0.063	Jan 2012	-		0.063	Continuing	Continuing	TBD
Type I Training	PO	Ogden Air Logistics Center:Hill AFB, UT	2.178	1.208	Nov 2010	1.200	Nov 2011	-		1.200	Continuing	Continuing	TBD
		Subtotal	9.792	9.412		3.533		-		3.533			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 673858: *Mission Planning Systems (MPS)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FFRDC Support	RO	Mitre Corp:Bedford, MA	4.673	4.870	Nov 2010	3.500	Nov 2011	-		3.500	Continuing	Continuing	TBD
Program Office Support	Various	Various:Various,	7.649	4.656	Nov 2010	3.500	Oct 2011	-		3.500	Continuing	Continuing	TBD
		Subtotal	12.322	9.526		7.000		-		7.000			

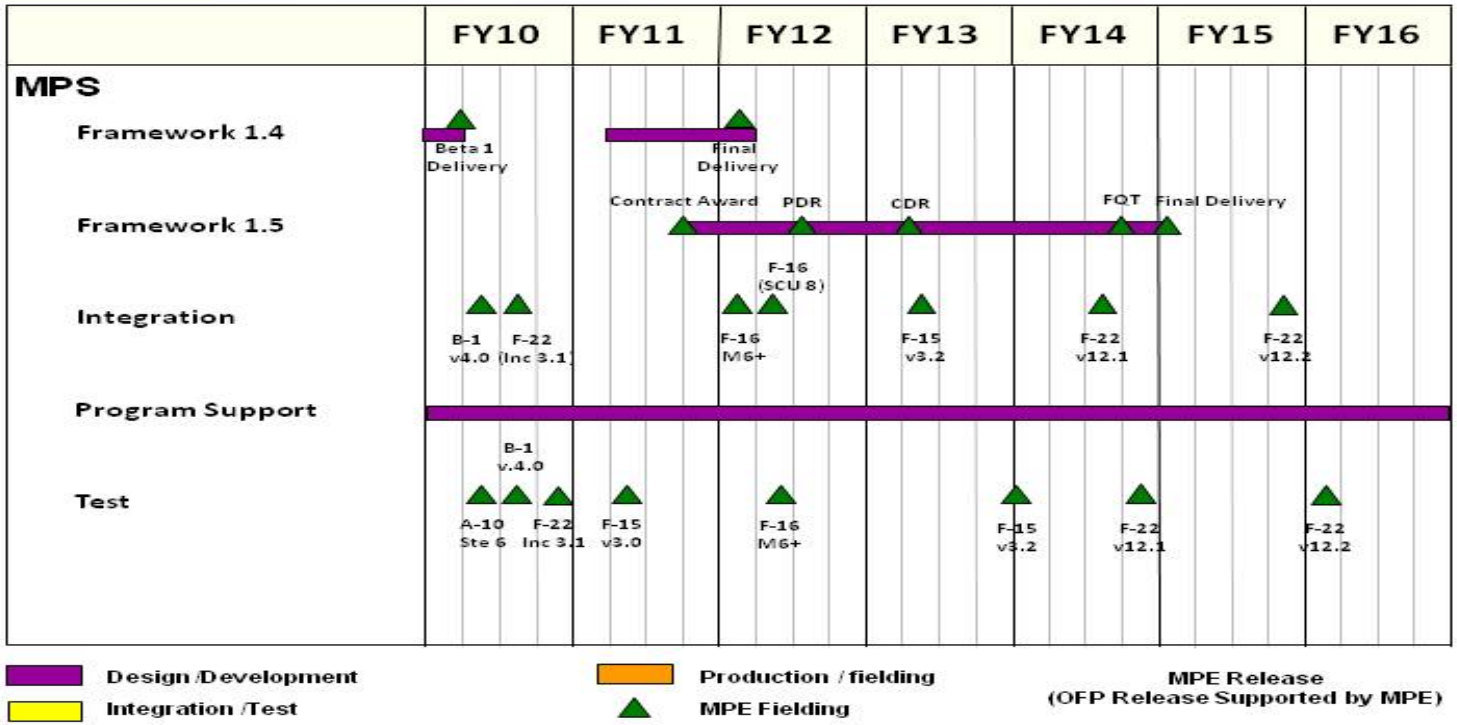
	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	137.749	37.273		29.991		-		29.991			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 673858: *Mission Planning Systems (MPS)*

Mission Planning System
PE 0208006F, Project 673858

As of: 5 Jan 2011



Integrity - Service - Excellence

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0208006F: *Mission Planning Systems*	**PROJECT** 673858: *Mission Planning Systems (MPS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Framework 1.4 Development & Test	1	2011	1	2012
Framework 1.4 Software Delivery	1	2012	1	2012
Framework 1.5 Preliminary Design Review	3	2012	3	2012
Integration / F-16 M6+	1	2012	1	2012
Integration / F-16 (SCU 8)	2	2012	2	2012
Integration / F-15 v3.2	2	2013	2	2013
Test / F-15 v3.0	2	2011	2	2011
Test / F-16 M6+	2	2012	2	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 675302: *Mobility Air Forces (MAF) Planning Systems*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675302: *Mobility Air Forces (MAF) Planning Systems*	1.874	6.110	4.256	-	4.256	4.340	8.557	15.309	17.458	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

CY funding totals include $4.443M for Overseas Contingency Operations.

A. Mission Description and Budget Item Justification

Mission planning involves the creation of a flight plan based on threats, targets, terrain, weather, aircraft performance capability and configuration. It is an essential task that must be completed prior to any fixed or rotary wing aircraft sortie. The planner must have the ability to plan weapon, cargo, passenger, and/or fuel delivery, calculate fuel requirement and assess the route based on known enemy threat location and type. Mission planners must be able to optimize and de-conflict flight routes with other aircraft; review, print and brief the plan; and download pertinent flight information to on-board aircraft avionics. This project develops mission planning systems and related components for Mobility Air Forces (MAF) platforms. It completes (and then stops) development of a Mission Planning Environment (MPE) for a limited number of platforms that comprise the Tanker, Airlift and Special Mission (TASM) suite of aircraft (more commonly known as TASM Sprial 1). It will also modernize the mission planning software required for MAF mission planning, including versions required to keep pace with software and hardware upgrades to Spiral 1 aircraft (e.g. E-3, E-8) and common components such as Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) and Air Refueling. The initial development and modernization efforts are as follows: Additionally, this project continues the development of a Joint Precision Airdrop System (JPADS) in conjunction with the Army. The JPADS System of Systems (SoS) capability provides a planning and execution capability for DoD airdrop requirements. It is the primary airdrop mission planning and execution system when the mission profile or surface-to-air threat assessment warrants a high-altitude and/or standoff precision delivery. JPADS enables high-altitude, precise airdrop delivery to forward ground forces, mitigating surface-to-air threats, reducing risk of Improvised Explosive Device (IED), and insurgent attack on ground convoys. JPADS allows the warfighter to consider weather, terrain, aircraft capabilities, threat, etc... to accurately deliver payload. The initial development and modernization efforts are as follows: a. Joint Precision Airdrop System (JPADS) - continues development of software required to provide a precision airdrop capability for AF and other services (i.e. the Army). b. MPS Increment IV - completes development of an MPE for the migration of a limited number of TASM aircraft [e.g. E-3, E-8, RC-135, HC-130]. It also upgrades several Common Components capabilities (e.g. weather) that support more than one platform. c. MAF Modernization - modifies MAF Mission Planning Environments (MPEs) developed and deployed during previous mission planning increments. The modernization activities will provide new and improved mission planning capabilities for individual MPEs as required to meet evolving Operational Flight Program (OFP) requirements, such as avionics upgrades, communication systems, etc... for various MAF platforms. The modernization effort will also complete a variety of studies and analyses to evaluate emerging Information Technology (IT) infrastructure technologies in support of future system upgrades. RATIONAL FOR OVERSEAS CONTINGENCY OPERATIONS (OCO) FUNDING: In FY11 OCO funds are required to refractor prototype software for the Joint Precision Airdrop System (JPADS) weather component. JPADS prototype hardware and software was rapidly fielded to provide an immediate capability for Operation ENDURING FREEDOM (OEF). The prototype weather software now needs to be re-factored to integrate into the AF C-130 and C-17 mission planning environment and provide extensibility and maintainability to meet increased ground force demands for airdrop missions in OEF. Airdrop requirements in OEF doubled in 2008 and are expected to nearly double again in 2009 and weather data modeling and weather calculations in JPADS software are at the very essence of the AF capability to expand airdrop and provide improved delivery

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 675302: *Mobility Air Forces (MAF) Planning Systems*

accuracy in support of increased numbers of ground forces in OEF. OEF uniquely requires the AF to provide greater airdrop delivery accuracy because of the rough, varied high-altitude terrain and associated small drop zones and the key to improving accuracy is better weather data collection and processing in the computed air release point calculation in JPADS software.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: JPADS Development ***Description:*** Continue development of a Joint Precision Airdrop System (JPADS) capability for precise, high altitude delivery of material to forward ground forces. ***FY 2010 Accomplishments:*** Continued development, integration and testing of JPADS Phase 2 software. Completed requirements analysis of JPADS Phase 3 software and initiate preliminary studies and analyses for JPADS Phase 4 (MPS Consolidated Airdrop Tool). ***FY 2011 Plans:*** Continue development of JPADS Phase 3 software and re-architect the WindPads component of the Consolidated Airdrop Tool (CAT). Will also utilize requested FY11 OCO funds to re-factor JPADS prototype weather software. ***FY 2012 Base Plans:*** Complete development of JPADS Phase 3 software and continue development of Phase 4 software. ***FY 2012 OCO Plans:*** Complete re-factoring of JPADS prototype weather software.	1.874	6.110	2.824	-	2.824
Title: MAF Increment IV Development ***Description:*** Continues development (and initial migration) of MPS Increment IV Mission Planning Environments (MPE) for MAF platforms (e.g. HH-60) ***FY 2010 Accomplishments:*** FY10 development efforts completed in Project 673858 ***FY 2011 Plans:***	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 675302: *Mobility Air Forces (MAF) Planning Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
No development efforts scheduled for this activity due to termination of Tanker Airlift Special Mission (TASM) Mission Planning Environment. ***FY 2012 Base Plans:*** Begin software design and development to transition HH-60 off legacy mission planning system and on to MPS. ***FY 2012 OCO Plans:***					
Title: MAF Modernization ***Description:*** Continues the modernization of Mission Planning Environments (MPE) for MAF platforms ***FY 2010 Accomplishments:*** No development activities planned for this activity. ***FY 2011 Plans:*** No development efforts scheduled for this activity due to termination of Tanker Airlift Special Mission (TASM) Mission Planning Environment. ***FY 2012 Base Plans:*** Continue the modernization of previously fielded mission planning software environments for the E-3, E-8, and RC-135. ***FY 2012 OCO Plans:***	-	-	1.432	-	1.432
Accomplishments/Planned Programs Subtotals	1.874	6.110	4.256	-	4.256

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPAF: *PE 0208006F, Mission Planning Systems*	16.589	11.680	9.516	0.000	9.516	8.389	8.542	9.694	9.868	Continuing	Continuing

D. Acquisition Strategy

MPS MAF Planning Systems utilizes an evolutionary acquisition approach to develop and deliver an interoperable, network-centric, mission planning system tailored for numerous Air Force platforms using competition and multiple contract vehicles.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 675302: *Mobility Air Forces (MAF) Planning Systems*

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 675302: *Mobility Air Forces (MAF) Planning Systems*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Planning Enterprise Contract	C/Various	Various:Various,	-	-		-		-		-	Continuing	Continuing	TBD
Mission Planning Enterprise Contract II	C/Various	Various:Various,	-	-		1.432	Nov 2011	-		1.432	Continuing	Continuing	TBD
JPADS Software Development Contract	C/CPFF	Tybrin:Ft Walton Beach, FL	1.874	6.110	Nov 2010	2.824	Nov 2011	-		2.824	Continuing	Continuing	TBD
		Subtotal	1.874	6.110		4.256		-		4.256			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Remarks

Technical support cost are programmed in project 673858

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Remarks

Government test and certification support cost are programmed in project 673858.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 675302: *Mobility Air Forces (MAF) Planning Systems*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Managment and other program support costs are programmed in project 673858

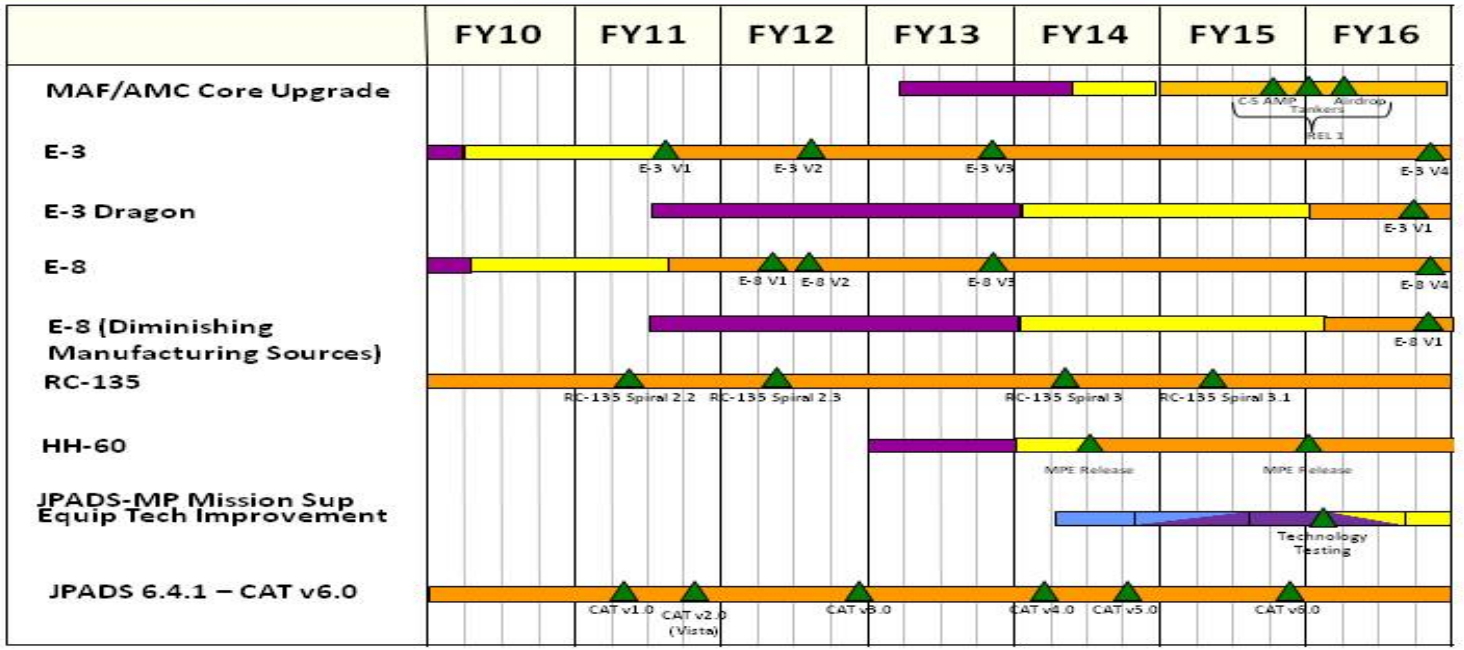
	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.874	6.110		4.256		-		4.256			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 675302: *Mobility Air Forces (MAF) Planning Systems*

As of: 6 Jan 11 1330

Mobility Air Forces
PE 0208006F, Project 675302



Concept activities
Production / fielding
Design / development
Pre-Production
Integration / test
Fielding / Milestone / Key Events

Integrity - Service - Excellence

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0208006F: *Mission Planning Systems*	**PROJECT** 675302: *Mobility Air Forces (MAF) Planning Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
E-3 v1.0 Fielding	3	2011	3	2011
E-3 v2.0 Fielding	3	2012	3	2012
E-3 v3.0 Fielding	4	2013	4	2013
E-8 v1.0 Fielding	2	2012	2	2012
E-8 v2.0 Fielding	3	2012	3	2012
RC-135 Spiral 2.2 Fielding	2	2011	2	2011
RC-135 Spiral 2.3 Fielding	2	2012	2	2012
CAT v3.0 Fielding	4	2012	4	2012
E-8 v1.0 Fielding (1)	2	2012	3	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 675380: *Combat Air Forces (CAF) Planning Systems*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675380: *Combat Air Forces (CAF) Planning Systems*	-	40.172	35.671	-	35.671	37.605	36.326	40.305	37.308	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Mission planning involves the creation of a flight plan based on threats, targets, terrain, weather, aircraft performance capability and configuration. It is an essential task that must be completed prior to any fixed or rotary wing aircraft sortie. The planner must have the ability to plan weapon, cargo, passenger, and/or fuel delivery, calculate fuel requirement and assess the route based on known enemy threat location and type. Mission planners must be able to optimize and de-conflict flight routes with other aircraft; review, print and brief the plan; and download pertinent flight information to on-board aircraft avionics. This project focuses on developing mission planning systems for the Combat Air Forces (CAF). It will also modernize the Mission Planning Systems (MPS) software required for CAF mission planning, including versions required to keep pace with upgrades to the A-10, B-1B, F-15, F-16, and F-22A aircraft as well as common components such as the Precision Guided Munitions Planning System (PGMPS) and the Joint Air-to-Surface Standoff Missile (JASSM). Mission Planning CAF increments and modernization efforts are as follows:

a. MPS Increment IV Development – This efforts continues update-development activities for platforms that previously transitioned to MPS (e.g. F-15, F-16, A-10, B-1B, and F-22A) to provide capabilities IAW the Increment IV Capability Development Document (CDD). In addition, it also upgrades several Common Components that are utilized on a variety of CAF platforms.

b. CAF MPE Modernization - Will modernize CAF Mission Planning Environments (MPEs) that were developed and deployed in Increments II-IV. The modernization activities will provide new and improved mission planning capabilities for individual MPEs as required to meet evolving Operational Flight Program (OFP) requirements (such as new weapons, avionics upgrades, communication systems, etc...) for the various affected platforms. The modernization effort will also complete a variety of studies and analyses to evaluate emerging Information Technology (IT) infrastructure technologies in support of future system upgrades.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Increment IV CAF Development ***Description:*** Continues development of MPS Increment IV Mission Planning Environments (MPE) for CAF platforms (e.g. F-15, F-16, F-22, B-1B)	-	8.802	13.375	-	13.375

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 675380: *Combat Air Forces (CAF) Planning Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: ***FY 2011 Plans:*** Complete development and fielding activities for B-1B, F-22A, and A-10 Mission Planning Environment. ***FY 2012 Base Plans:*** Complete development of the unique planning component portion of the Mission Planning Environment (MPE) for the A-10 and F-22A platforms. ***FY 2012 OCO Plans:***					
Title: CAF Modernization ***Description:*** Continues the modernization of previously fielded Mission Planning Environments (MPEs) to enable efficient use of new and improved capabilities being developed in the Operational Flight Programs (OFPs) of CAF platforms. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** Continues modernization of previously fielded mission planning software environments for B-1B, F-15, F-16, and F-22A. Includes design, code integration, and documentation of software components. Will also support training for units that will receive the additional functional capabilities being developed and incorporated in platform Operational Flight Programs (OFPs). ***FY 2012 Base Plans:*** Continues the modernization of previously fielded mission planning software environments for the B-1B, F-15, F-16, and F-22A. Future funding will incorporate changes to the requirements by the Operational Flight Programs as the warfighter transitions to the Joint Mission Planning System. Air Combat Command (ACC) and Air Mobility Command (AMC) supplies functional and performance requirements that must be implemented relative to each particular platform mission planning requirements. This will include the implementation of specific UPC improvements based upon fielded problems, developer evaluations, and Developmental and Operational testing as agreed to by HQ ACC and AMC. As part of the modernization effort MPE software shall interoperate with the baseline JMPS Framework, PGMPS, Weapons Data link, and key handling software for the newly identified SDB-II capability. ***FY 2012 OCO Plans:***	-	31.370	22.296	-	22.296

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 675380: *Combat Air Forces (CAF) Planning Systems*

B. Accomplishments/Planned Programs ($ in Millions)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Accomplishments/Planned Programs Subtotals	-	40.172	35.671	-	35.671

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPAF: *PE 0208006F, Mission Planning Systems*	11.424	9.426	9.013	0.000	9.013	8.718	8.878	10.030	10.158	Continuing	Continuing

D. Acquisition Strategy

MPS Combat Air Forces (CAF) Planning Systems utilizes an evolutionary acquisition approach to develop and deliver an interoperable, network-centric, mission planning system tailored for numerous Air Force platforms using competition and multiple contract vehicles.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 675380: *Combat Air Forces (CAF) Planning Systems*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Planning Enterprise Contract II	C/Various	Various:Various,	-	30.786	Nov 2010	22.296	Nov 2011	-		22.296	Continuing	Continuing	TBD
MPS Modernization	C/Various	Various:Various,	-	9.386	Nov 2010	13.375	Nov 2011	-		13.375	Continuing	Continuing	TBD
		Subtotal	-	40.172		35.671		-		35.671			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Remarks

Technical support cost are programmed in project 673858

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Remarks

Test and Evaluation support cost are programmed in project 673858

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Remarks

Management and other program support cost are programmed in project 673858

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 675380: *Combat Air Forces (CAF) Planning Systems*

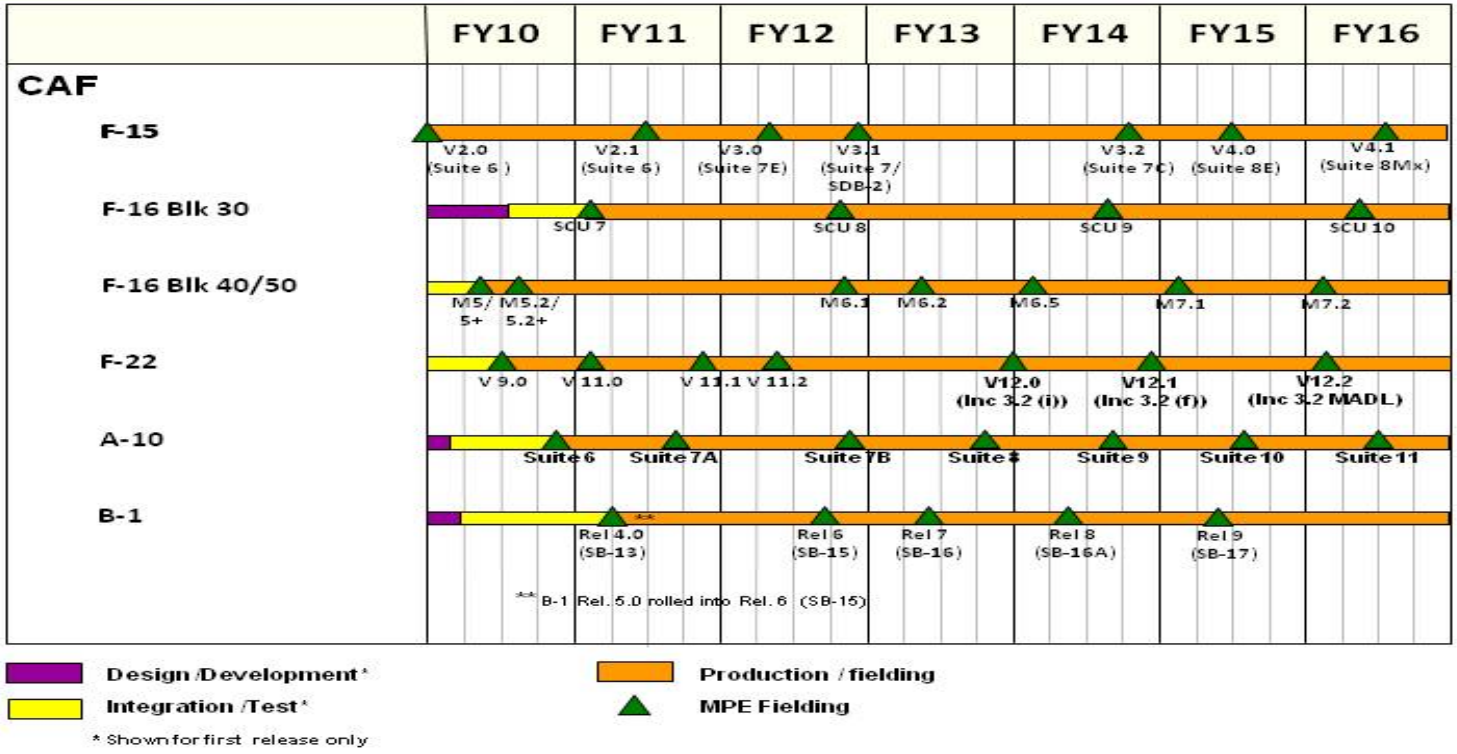
	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	40.172		35.671		-		35.671			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208006F: *Mission Planning Systems*	PROJECT 675380: *Combat Air Forces (CAF) Planning Systems*

As of: 5 Jan 2011 1500

Combat Air Forces
PE 0208006F, Project 675380



Integrity - Service - Excellence

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0208006F: *Mission Planning Systems*	**PROJECT** 675380: *Combat Air Forces (CAF) Planning Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
F-15 v2.1 Fielding	2	2011	2	2011
F-15 v3.0 Fielding	2	2012	2	2012
F-15 v3.1 Fielding	4	2012	4	2012
F-16 Blk 30 SCU 7 Fielding	1	2011	1	2011
F-16 Blk 40/50 M5.1 Fielding	2	2010	2	2010
F-16 Blk 40/50 M6.1 Fielding	4	2012	4	2012
F-16 Blk 40/50 M6.2 Fielding	2	2013	2	2013
F-22 v11.0 Fielding	1	2011	1	2011
F-22 v11.1 Fielding	4	2011	4	2011
F-22 v11.2 Fielding	2	2012	2	2012
F-22 v12.0 Fielding	4	2013	4	2013
A-10 Suite 7A Fielding	3	2011	3	2011
A-10 Suite 7B Fielding	4	2012	4	2012
A-10 Suite 8 Fielding	4	2013	4	2013
B-1 Rel 4.0 Fielding	1	2011	1	2011
B-1 Rel 6 Fielding	3	2012	3	2012
B-1 Rel 7 Fielding	2	2013	2	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0208021F: *Information Warfare Support*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	13.361	2.294	2.322	-	2.322	2.355	2.390	2.424	2.467	Continuing	Continuing
670374: *Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt*	13.361	2.294	2.322	-	2.322	2.355	2.390	2.424	2.467	Continuing	Continuing

Note

In FY 2011, 670374, Electronic Combat Spt, C3 Protection/Multi-Mission, Technology, RDT&E for Intelligence Support to Counterspace was transferred to PE 0301400F, Space Superiority Intelligence, for proper execution in Air Force Space Command (AFSPC).

A. Mission Description and Budget Item Justification

This Program Element funds research and development of information operations (IO) and intelligence capabilities required to execute counterspace and information operations in support of combatant commanders. Programs that are supported include the Information Warfare Planning Capability (IWPC) and Counterspace Intelligence Support.

IWPC is a full-spectrum, offensive and defensive, planning capability. IWPC is an Air and Space Operations Center (AOC) weapon system component which enables operators to develop strategic courses of action for the Joint Forces Air Component Commander (JFACC), create Air Operations Directives (AODs) and Joint Air Operations Plans (JAOPs), and nominate IO "targets" for inclusion into the Master Air Attack Plan and the Joint Integrated Prioritized Target List (JIPTL). This project funds the development and upgrade, testing and evaluation, and installation and training of an evolving suite of interoperable planning and decision support capabilities comprised of software, hardware, and communications products. This project will identify and implement an open, scalable system architecture that will accommodate growth as the virtual world grows and cyber operations change. The project builds functional software modules that are designed to be interoperable with C2 systems such as the Theater Battle Management Core System (TBMCS) and other AOC tools.

The Counterspace effort provides intelligence support for key find, fix, track, target, engage, and assess (F2T2EA) requirements supporting counterspace activities and also performs developmental intelligence collection to support new capability acquisition and development. This project funds transportable intelligence collection and analysis capabilities that are modular (plug-and-play), and can keep pace with technological advances and emerging threats; intelligence support systems supporting Space Situational Awareness activities that provide the requisite current and predictive knowledge of space events and threat conditions; and, intelligence support to Space Protection Programs by providing architectural survivability analysis of critical mission assets for mission assurance. It also supports phased threat system Analysis and Studies (A&S), test support, lab equipment, and Material Acquisition and Exploitation (MAE) for new system development and vulnerability/susceptibility assessments to support tactics, techniques and procedures (TTP) development, and future threat technology studies necessary for mission area success, the achievement of space superiority, and to preserve the US space advantage across all domains. This PE funds development and continued research to identify existing military and commercial efforts which can satisfy unfulfilled operational requirements for IO planning and integration. Activities also include studies and analysis to support both current program planning and execution and future program planning. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0208021F: *Information Warfare Support*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	13.779	2.294	2.330	-	2.330
Current President's Budget	13.361	2.294	2.322	-	2.322
Total Adjustments	-0.418	-	-0.008	-	-0.008
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-0.058	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.360	-			
• Other Adjustments	-	-	-0.008	-	-0.008

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: 670374: *Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt*		
Congressional Add: *Electromagnetic Battlespace Management*	1.591	-
Congressional Add Subtotals for Project: 670374	1.591	-
Congressional Add Totals for all Projects	1.591	-

Change Summary Explanation

In FY 2011, 670374, Electronic Combat Spt, C3 Protection/Multi-Mission, Technology, RDT&E for Intelligence Support to Counterspace was transferred to PE 0301400F, Space Superiority Intelligence, for proper execution in AFSPC.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208021F: *Information Warfare Support*	PROJECT 670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
670374: *Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt*	13.361	2.294	2.322	-	2.322	2.355	2.390	2.424	2.467	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2011, 670374, Electronic Combat Spt, C3 Protection/Multi-Mission, Technology, RDT&E for Intelligence Support to Counterspace was transferred to PE 0301400F, Space Superiority Intelligence, for proper execution in AFSPC.

A. Mission Description and Budget Item Justification

This Program Element funds research and development of information operations (IO) and intelligence capabilities required to execute counterspace and information operations in support of combatant commanders. Programs that are supported include the Information Warfare Planning Capability (IWPC) and Counterspace Intelligence Support.

IWPC is a full-spectrum, offensive and defensive, planning capability. IWPC is an Air and Space Operations Center (AOC) weapon system component which enables operators to develop strategic courses of action for the Joint Forces Air Component Commander (JFACC), create Air Operations Directives (AODs) and Joint Air Operations Plans (JAOPs), and nominate IO "targets" for inclusion into the Master Air Attack Plan and the Joint Integrated Prioritized Target List (JIPTL). This project funds the development and upgrade, testing and evaluation, and installation and training of an evolving suite of interoperable planning and decision support capabilities comprised of software, hardware, and communications products. This project will identify and implement an open, scalable system architecture that will accommodate growth as the virtual world grows and cyber operations change. The project builds functional software modules that are designed to be interoperable with C2 systems such as the Theater Battle Management Core System (TBMCS) and other AOC tools.

The Counterspace effort provides intelligence support for key find, fix, track, target, engage, and assess (F2T2EA) requirements supporting counterspace activities and also performs developmental intelligence collection to support new capability acquisition and development. This project funds transportable intelligence collection and analysis capabilities that are modular (plug-and-play), and can keep pace with technological advances and emerging threats; intelligence support systems supporting Space Situational Awareness activities that provide the requisite current and predictive knowledge of space events and threat conditions; and, intelligence support to Space Protection Programs by providing architectural survivability analysis of critical mission assets for mission assurance. It also supports phased threat system Analysis and Studies (A&S), test support, lab equipment, and Material Acquisition and Exploitation (MAE) for new system development and vulnerability/susceptibility assessments to support tactics, techniques and procedures (TTP) development, and future threat technology studies necessary for mission area success, the achievement of space superiority, and to preserve the US space advantage across all domains. This PE funds development and continued research to identify existing military and commercial efforts which can satisfy unfulfilled operational requirements for IO planning and integration. Activities also include studies and analysis to support both current program planning and execution and future program planning. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208021F: *Information Warfare Support*	PROJECT 670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: IWPC ***Description:*** IWPC Installation/Training/Upgrades ***FY 2010 Accomplishments:*** This funding allowed the program office to maintain the IWPC program in support of continued warfighter requirements. This project funded the upgrade, installation, and training of the IWPC suite of planning and decision support tools. Software and hardware updates were necessary to keep up with existing technology and maintain interoperability with external programs. The funds also supported required testing and contract support. ***FY 2011 Plans:*** This funding continues the maintainance of the IWPC program to meet warfighter requirements. This project funds the upgrades, installation, and training of the IWPC suite of planning and decision support tools. Software and hardware updates are necessary to keep up with existing technology and maintain interoperability with external programs. These funds also support required testing and contract support. ***FY 2012 Base Plans:*** This funding will support maintainance of the IWPC program to meet continued warfighter requirements. This project will fund training and upgrades of the IWPC suite of planning an decision support tools. Software and hardware updates are necessary to keep up with existing technology and maintain interoperability with external programs. Will also fund required testing and contract support. ***FY 2012 OCO Plans:***	2.240	2.294	2.322	-	2.322
Title: Counterspace Intel Support ***Description:*** Counterspace Intelligence Support ***FY 2010 Accomplishments:*** Funding provided intelligence support to counterspace activities. The project supported space situational awareness activities providing predictive threat conditions and survivability analysis for mission assurance. Project funds supported testing, lab environment, and material acquisition and exploitation along with tactics, techniques, and procedures development. ***FY 2011 Plans:***	9.530	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0208021F: *Information Warfare Support*	**PROJECT** 670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*

B. Accomplishments/Planned Programs ($ in Millions)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2012 Base Plans:					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	11.770	2.294	2.322	-	2.322

	FY 2010	FY 2011
Congressional Add: Electromagnetic Battlespace Management	1.591	-
FY 2010 Accomplishments: Congressional Add: Electromagnetic Battlespace Management.		
FY 2011 Plans:		
Congressional Adds Subtotals	1.591	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0208021F: *Information Warfare Support, O&M*	0.799	0.239	1.153	0.000	1.153	1.194	1.234	0.690	0.000	Continuing	Continuing

D. Acquisition Strategy

IWPC site installations of Ver 4.25 will continue through end of FY11. Future upgrades will be delivered as maintenance releases with incremental increases in capability.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208021F: *Information Warfare Support*	PROJECT 670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IWPC Prime Contract	SS/FFP	General Dynamics:San Antonio, TX	0.855	1.195	Oct 2010	1.158	Oct 2011	-		1.158	Continuing	Continuing	TBD
Counterspace and R&D Intelligence Support	Various	Various:Lackland AFB, TX	2.424	-		-		-		-	0.000	2.424	0.000
Architecture Upgrade Support to SSA,SSP & Counterspace	Various	Various:Lackland AFB, TX	1.510	-		-		-		-	0.000	1.510	0.000
Data Analysis and Product Development for R&D	Various	Various:Lackland AFB, TX	5.217	-		-		-		-	0.000	5.217	0.000
Deployment Support for Testing and Data Collection	Various	Various:Lackland AFB, TX	0.437	-		-		-		-	0.000	0.437	0.000
		Subtotal	10.443	1.195		1.158		-		1.158			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Support	C/CPAF	Various:San Antonio, TX	0.435	0.475	Nov 2010	0.493	Nov 2011	-		0.493	Continuing	Continuing	0.000
Engineering Support	Various	Various:San Antonio, TX	0.481	0.358	Oct 2010	0.391	Oct 2011	-		0.391	Continuing	Continuing	0.000
Congressional Add	Various	Various:Lackland AFB, TX	1.583	-		-		-		-	0.000	1.583	0.000
		Subtotal	2.499	0.833		0.884		-		0.884			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IWPC 46 Det 2 Test Support	C/CPAF	46th TS:Eglin AFB, FL	0.290	0.180	Apr 2011	0.180	Mar 2012	-		0.180	Continuing	Continuing	TBD
IWPC 605th Test Support	C/CPAF	605th:Eglin AFB, FL	0.129	0.086	May 2011	0.100	Apr 2012	-		0.100	Continuing	Continuing	TBD
		Subtotal	0.419	0.266		0.280		-		0.280			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208021F: *Information Warfare Support*	PROJECT 670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*

Management Services ($ in Millions)

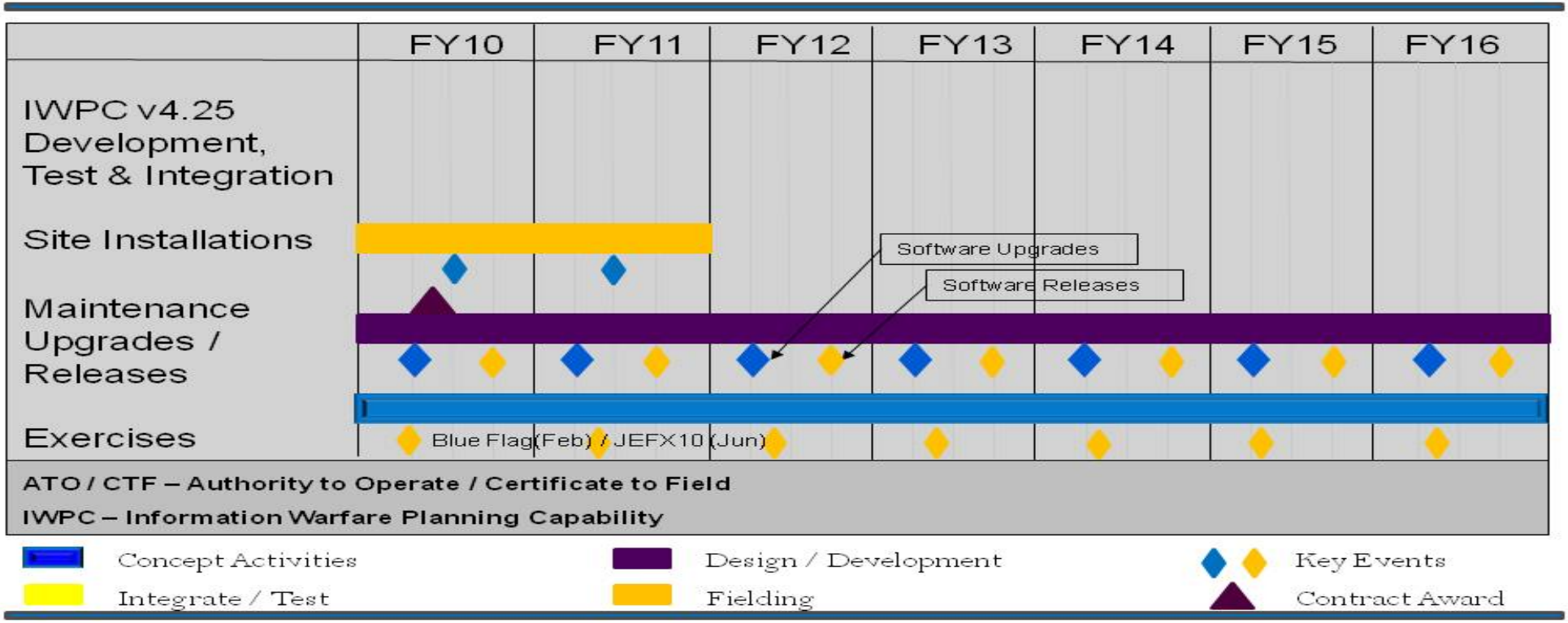
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	13.361	2.294		2.322		-		2.322			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208021F: *Information Warfare Support*	PROJECT 670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*

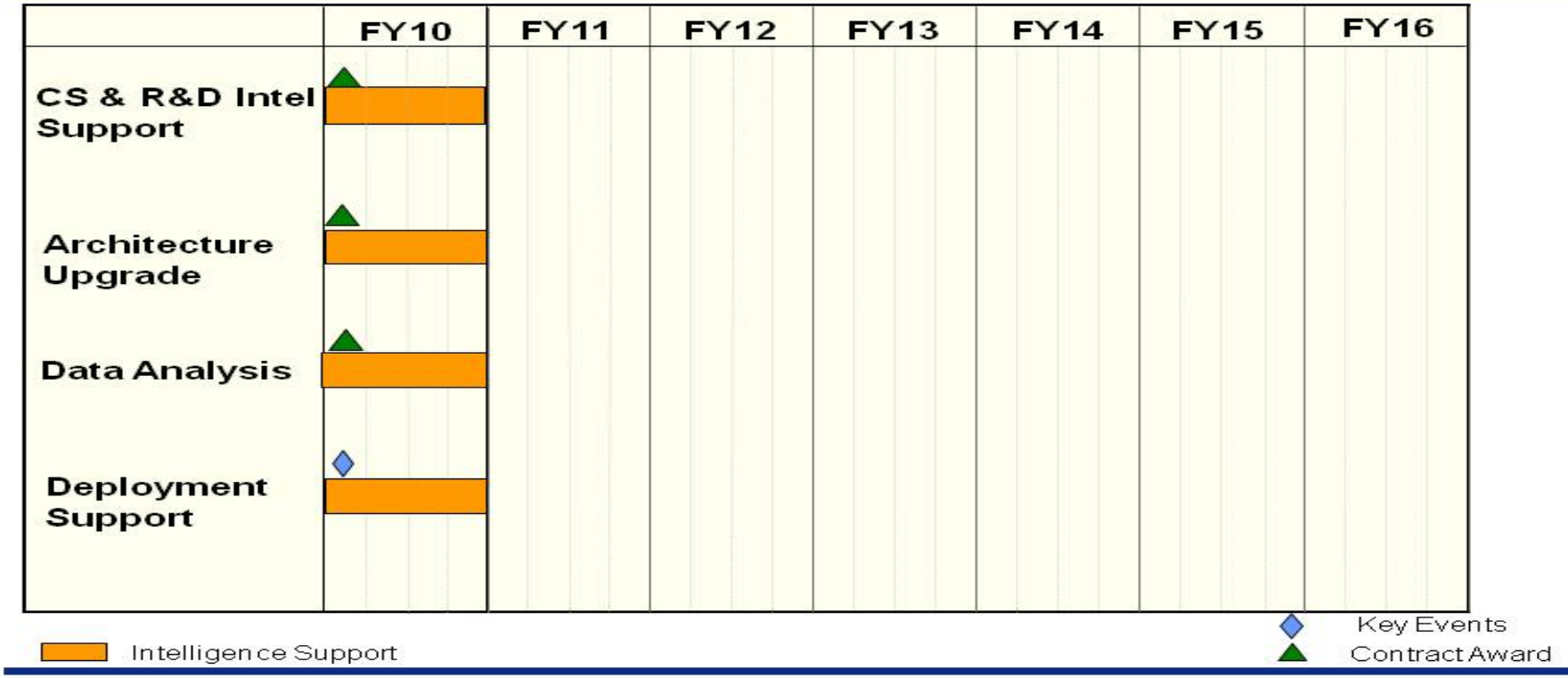
IWPC Schedule



Current As Of: Jan 2011

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208021F: *Information Warfare Support*	PROJECT 670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*

CS Intelligence Program Schedule



Current As Of: Jan 2011

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0208021F: *Information Warfare Support*	**PROJECT** 670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
IWPC Development Test & Integration	3	2011	3	2016
IWPC Fielding/Site Installation	1	2010	4	2011
IWPC Upgrades/Maintenance Releases	1	2010	4	2016
Exercises	1	2010	4	2016
Counterspace and R&D Intelligence Support	1	2010	4	2010
Architecture Upgrade Supporting SSA, SSP, & Counterspace	1	2010	4	2010
Data Analysis and Product Development for R&D	1	2010	4	2010
Deployment Support for Testing and Data Collection	1	2010	4	2010

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0208059F: *CYBER Command*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	-	1.117	0.702	-	0.702	0.516	0.515	0.406	0.413	Continuing	Continuing
676002: *CYBER SYSTEMS MODERNIZATION*	-	1.117	0.702	-	0.702	0.516	0.515	0.406	0.413	Continuing	Continuing

A. Mission Description and Budget Item Justification

Funding was inadvertently placed in PE 0208059F and should be moved to PE 0307141F.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	-	0.702	-	0.702
Current President's Budget	-	1.117	0.702	-	0.702
Total Adjustments	-	1.117	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	1.117	-	-	-

Change Summary Explanation

FY11: The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208059F: *CYBER Command*	PROJECT 676002: *CYBER SYSTEMS MODERNIZATION*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
676002: *CYBER SYSTEMS MODERNIZATION*	-	1.117	0.702	-	0.702	0.516	0.515	0.406	0.413	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Funding was inadvertently placed in PE 0208059F and should be moved to PE 0307141F.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: MAJOR THRUST 1	-	1.117	0.702	-	0.702
Description: CYBER System Modernization					
FY 2010 Accomplishments: CYBER System Modernization					
FY 2011 Plans: CYBER System Modernization					
FY 2012 Base Plans: CYBER System Modernization					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	-	1.117	0.702	-	0.702

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0208059F: *CYBER Command*	**PROJECT** 676002: *CYBER SYSTEMS MODERNIZATION*

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208059F: *CYBER Command*	PROJECT 676002: *CYBER SYSTEMS MODERNIZATION*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CYBER Systems Modernization	TBD	TBD:TBD,	-	1.117		0.702		-		0.702	0.000	1.819	0.000
		Subtotal	-	1.117		0.702		-		0.702	0.000	1.819	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

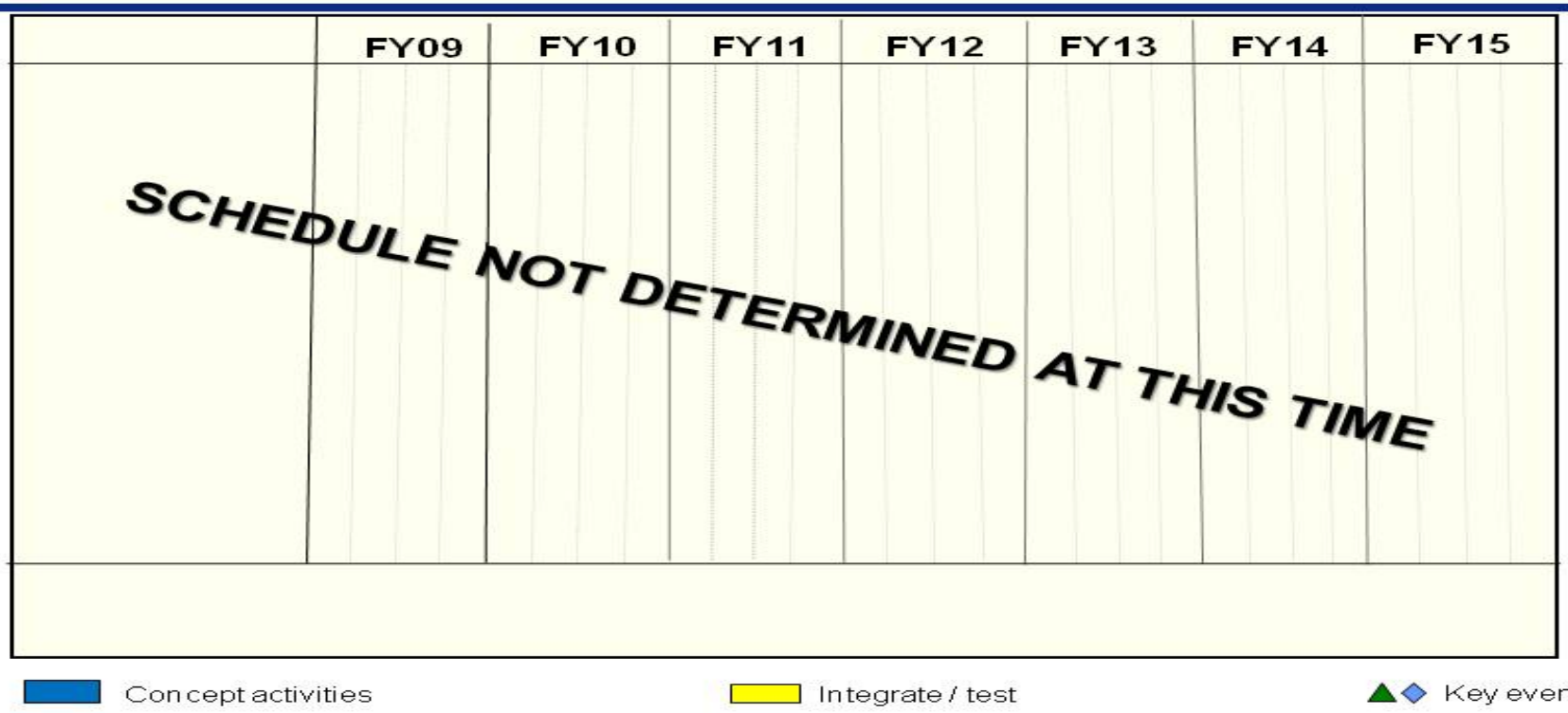
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	1.117		0.702		-		0.702	0.000	1.819	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0208059F: *CYBER Command*	PROJECT 676002: *CYBER SYSTEMS MODERNIZATION*

CYBER COMMAND ACTIVITIES



PB11 R-Docs

1

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0208059F: *CYBER Command*	**PROJECT** 676002: *CYBER SYSTEMS MODERNIZATION*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CYBER Systems Modernization	1	2011	4	2011

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0301400F: *SPACE SUPERIORITY INTELLIGENCE*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	-	10.006	11.866	-	11.866	12.017	12.182	12.355	12.534	Continuing	Continuing
670374: *Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt*	-	10.006	11.866	-	11.866	12.017	12.182	12.355	12.534	Continuing	Continuing

Note

Beginning in FY11, RDT&E in support of Intel Support to Counterspace is moved to PE 0301400F. Funding and content in Project Number 670374, Electronic Combat Spt, C3 Protection/Multi-Mission Technology and Spt, were transferred from PE 0208021F, Information Warfare Support, to PE 0301400F. In FY11 PB, all of PE 0301400F RDT&E funds were requested to be in BPAC 67A051, Space Superiority -- Advanced Intelligence Systems.

A. Mission Description and Budget Item Justification

Provides Electronic Support (ES) for key find, fix, track, target, engage and assess (F2T2EA) requirements supporting Space Superiority activities. Additionally funding provides for developmental intelligence collection to support new capability acquisition and development. This project funds transportable intelligence collection and analysis capabilities that are modular (plug-and-play), and can keep pace with technological advances and emerging threats. It provides intelligence support systems for Space Situational Awareness activities that provide the requisite current and predictive knowledge of space events and threat conditions and intelligence support to Space Protection Programs by providing architectural survivability analysis of critical mission assets for mission assurance. Additionally, funding supports phased threat system analysis and studies (A&S), test support, lab equipment, and Material Acquisition and Exploitation (MAE) for system development and vulnerability/ susceptibility assessments to support tactics, techniques and procedures (TTP) development. Also funded are future threat technology studies necessary for mission area success and achievement of space superiority, helping preserve the US space advantage across all domains. This program is in Budget Activity 7, Operational System Development, because it studies, develops, and fields IO tools.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	10.006	11.906	-	11.906
Current President's Budget	-	10.006	11.866	-	11.866
Total Adjustments	-	-	-0.040	-	-0.040
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.040	-	-0.040

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0301400F: *SPACE SUPERIORITY INTELLIGENCE*

Change Summary Explanation

Funding and content transferred from PE 0208021F, Information Warfare Support effective in FY2011.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0301400F: *SPACE SUPERIORITY INTELLIGENCE*	PROJECT 670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
670374: *Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt*	-	10.006	11.866	-	11.866	12.017	12.182	12.355	12.534	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Beginning in FY11, RDT&E in support of Intel Support to Counterspace is moved to PE 0301400F. Funding and content in Project Number 670374, Electronic Combat Spt, C3 Protection/Multi-Mission Technology and Spt, were transferred from PE 0208021F, Information Warfare Support, to PE 0301400F. In FY11 PB, all of PE 0301400F RDT&E funds were requested to be in BPAC 67A051, Space Superiority -- Advanced Intelligence Systems.

A. Mission Description and Budget Item Justification

Provides Electronic Support (ES) for key find, fix, track, target, engage and assess (F2T2EA) requirements supporting Space Superiority activities. Additionally funding provides for developmental intelligence collection to support new capability acquisition and development. This project funds transportable intelligence collection and analysis capabilities that are modular (plug-and-play), and can keep pace with technological advances and emerging threats. It provides intelligence support systems for Space Situational Awareness activities that provide the requisite current and predictive knowledge of space events and threat conditions and intelligence support to Space Protection Programs by providing architectural survivability analysis of critical mission assets for mission assurance. Additionally, funding supports phased threat system analysis and studies (A&S), test support, lab equipment, and Material Acquisition and Exploitation (MAE) for system development and vulnerability/ susceptibility assessments to support tactics, techniques and procedures (TTP) development. Also funded are future threat technology studies necessary for mission area success and achievement of space superiority, helping preserve the US space advantage across all domains.

This program is in Budget Activity 7, Operational System Development, because it studies, develops, and fields IO tools.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Develop transportable collection and analysis capability	-	10.006	11.866	-	11.866
Description: Developing transportable intelligence collection and analysis capabilities that are modular (plug-and-play), and can keep pace with technological advances and emerging threats.					
FY 2010 Accomplishments: Not Applicable					
FY 2011 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0301400F: *SPACE SUPERIORITY INTELLIGENCE*	PROJECT 670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Providing Space Superiority and Space Control R&D intelligence support; architecture upgrade support to Space Situation Awareness, Space Protection Program & Space Superiority; data analysis and product development for R&D deployment activities; support for testing and data collection. ***FY 2012 Base Plans:*** Continue Space Superiority and Space Control R&D intelligence support; architecture upgrade support to Space Situation Awareness, Space Protection Program & Space Superiority; data analysis and product development for R&D deployment activities; support for testing and data collection. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	-	10.006	11.866	-	11.866

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• RDT&E AF: *PE 0208021F, Info Warfare Spt, BA07*	9.989	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• OMAF: *PE 0301400F*	20.930	10.000	7.430	0.000	7.430	7.184	7.303	7.353	7.513	Continuing	Continuing

D. Acquisition Strategy

All contracts funded in this program will be awarded using competitive procedures to the maximum extent possible.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0301400F: *SPACE SUPERIORITY INTELLIGENCE*	PROJECT 670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Space Superiority and R&D intelligence Support	Various	Various:,	-	2.505	Nov 2010	2.977	Nov 2011	-		2.977	Continuing	Continuing	TBD
Architecture upgrade support to SSA, SPP, and Space Superiority	Various	Various:,	-	1.601	Nov 2010	1.905	Nov 2011	-		1.905	Continuing	Continuing	TBD
Data analysis and product development for R&D	Various	Various:,	-	5.400	Nov 2010	6.389	Nov 2011	-		6.389	Continuing	Continuing	TBD
Deployment support for testing and data collection	Various	Various:,	-	0.500	Nov 2010	0.595	Nov 2011	-		0.595	Continuing	Continuing	TBD
		Subtotal	-	10.006		11.866		-		11.866			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0301400F: *SPACE SUPERIORITY INTELLIGENCE*	PROJECT 670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	10.006		11.866		-		11.866			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0301400F: *SPACE SUPERIORITY INTELLIGENCE*	PROJECT 670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*

U.S. AIR FORCE

SSI Schedule

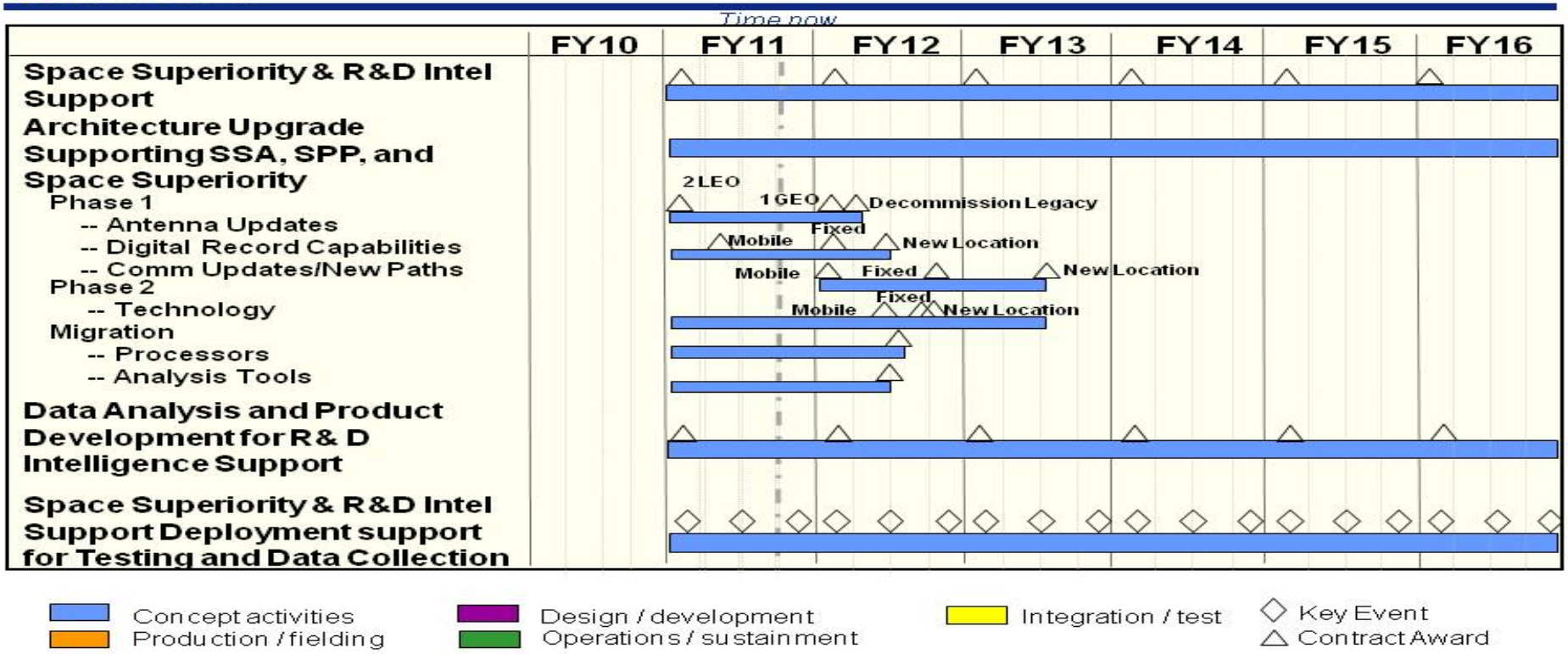


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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0301400F: *SPACE SUPERIORITY INTELLIGENCE*	**PROJECT** 670374: *Electronic Combat Spt, C3 Protection/ Multi-Mission, Technology and Spt*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Space Superiority R&D intelligence support	1	2011	4	2016
Architecture upgrade supporting SSA, SPP, and Space Superiority	1	2011	4	2016
-- Phase 1	1	2011	3	2013
-- Phase 2	1	2011	3	2013
Data analysis and product development for R&D intelligence support	1	2011	4	2016
Deployment support for testing and data collection	1	2011	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	25.219	12.532	5.845	-	5.845	25.506	9.225	5.164	9.189	Continuing	Continuing
674777: *E-4B Aircraft Modernization*	16.672	12.532	5.845	-	5.845	25.506	9.225	5.164	9.189	Continuing	Continuing
675301: *Next Generation NAOC*	8.547	-	-	-	-	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

The four aircraft E-4B National Airborne Operations Center (NAOC) fleet satisfies the military need for an airborne operations center with communications capabilities that permit military and civilian leadership to monitor and control military and civil national assets during all phases of nuclear and non-nuclear conflict or natural disaster. The E-4B NAOC fleet also satisfies the military requirement to provide a highly survivable node of the National Military Command System (NMCS). Developmental modifications include, but are not limited to, upgrades and enhancements to aircraft structures, propulsion system, fuel system, environmental control system, electrical generation and distribution systems, flight safety and navigation systems (with their associated communications equipment), and the related aircraft operations center facilities, equipment, and communications necessary for the E-4B fleet to execute its mission. Additionally, funds may be utilized to explore modifications, upgrades, and future systems required to meet mission requirements.

Developmental modifications and studies/projects currently underway or planned for accomplishment under this program include:

- Electromagnetic Pulse (EMP) testing will be conducted to validate the E-4B fleet compliance with updated EMP protection Mil Standards.

- Continue analysis for a replacement fleet based on the recommendations of the E-4B NAOC Aircraft Replacement AoA. These funds have been used to develop a Technology Development Strategy, Test and Evaluation Strategy, Systems Engineering Plan, Lifecycle Management Plan, Initial Capabilities Document, and other required documents leading up to a Milestone A decision. A number of risk reduction studies, such as a sustainability study and antenna/communications technology study, are also planned.

- The Secure Data Crypto modification replaces various E-4B cryptographic systems currently scheduled to be decertified by the National Security Agency (NSA). This modification ensures the continued transmission and receipt of critical strategic force orders. Funds for this modification will be used to design an engineering solution, develop compatible software, procure new secure data devices, and integrate NSA approved and Internet Protocol Version 6 (IPv6) compliant secure data cryptographic devices and associated peripherals on the aircraft.

- The Super High Frequency (SHF) Multiplexor (MUX) project integrates a more capable and logistically supportable MUX to replace the obsolete and temporary solution used today. The current SHF MUX is prone to intermittent disconnects and poor performance. A new device will allow the E-4B to better meet requirements of transmitting combined secure and non-secure digital data streams via satellite.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*

- The Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) efforts upgrades the air traffic communications systems to improve Navigation and Instrument Approach capabilities. These ongoing efforts are required to comply with both U.S. and international air traffic management requirements and maintain world-wide (anytime/anywhere) availability. This effort will add Automatic Dependent Surveillance - Broadcast Out (ADS-B Out) capability, a Mode 5 IFF capability, and a Multi-Mode Receiver for Global Positioning System (GPS) Precision Instrument Approaches and replace the obsolete Flight Management Computer (FMC) and upgrade required systems to meet domestic and foreign CNS/ATM requirements. This is expected to be an on-going program to meet evolving CNS/ATM requirements.

- Secure, Survivable Communication efforts will upgrade and replace existing systems required to meet existing National Security Presidential Directive (NSPD)-28 and NSPD-51/Homeland Security Presidential Directive (HSPD)-20 requirements and to ensure continued connectivity and interoperability as satellite and communications infrastructure evolves. Expected modifications requiring RDT&E include, but are not limited to, installation of Family of Beyond-Line-of-Site Terminals (FAB-T), Presidential National Voice Conferencing (PNVC), modification of the current Super High Frequency (SHF) system to meet immediate needs, and eventual replacement of the SHF System. FAB-T Command Post Terminals will replace the MILSTAR Terminal and provide access to protected wideband Advanced Extremely High Frequency (AEHF) satellite networks. PNVC replaces Survivable Emergency Conferencing Network (SECN), which will not be supported once the AEHF satellite network is in place. Upgrade of the current SHF system is required in the near-term to replace the most critically obsolete components to ensure that the system remains operable and logistically supportable until a replacement system is fielded. A replacement to the SHF system is required as secure, survivable communications capability transitions from the Defense Satellite Communications System (DSCS).

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	26.107	12.532	5.762	-	5.762
Current President's Budget	25.219	12.532	5.845	-	5.845
Total Adjustments	-0.888	-	0.083	-	0.083
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.779	-			
• Other Adjustments	-0.109	-	0.083	-	0.083

Change Summary Explanation

The change in funding from FY11 to FY12 is due to a reduction in the number of modifications requiring development efforts in FY12 and the conclusion of some development effort during FY11.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*	PROJECT 674777: *E-4B Aircraft Modernization*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674777: *E-4B Aircraft Modernization*	16.672	12.532	5.845	-	5.845	25.506	9.225	5.164	9.189	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

E-4B four aircraft NAOC fleet satisfies the military need for an airborne operations center with communications capabilities that permit military and civilian leadership to monitor and control military and civil national assets during all phases of nuclear and non-nuclear conflict or natural disaster. The E-4B NAOC fleet also satisfies the military requirement to provide a highly survivable node of the National Military Command System (NMCS). Developmental modifications include, but are not limited to, upgrades and enhancements to aircraft structures, propulsion system, fuel system, environmental control system, electrical generation and distribution systems, flight safety and navigation systems (with their associated communications equipment), and the related aircraft operations center facilities, equipment, and communications necessary for the E-4B fleet to execute its mission. Additionally, funds may be utilized to explore modifications, upgrades, and future systems required to meet mission requirements.

Developmental modifications and studies/projects currently underway or planned for accomplishment under this program include:

- Electromagnetic Pulse (EMP) testing will be conducted to validate the E-4B fleet compliance with updated EMP protection Mil Standards.

- The Secure Data Crypto modification replaces various E-4B cryptographic systems currently scheduled to be decertified by the National Security Agency (NSA). This modification ensures the continued transmission and receipt of critical strategic force orders. Funds for this modification will be used to design an engineering solution, develop compatible software, procure new secure data devices, and integrate NSA approved and Internet Protocol Version 6 (IPv6) compliant secure data cryptographic devices and associated peripherals on the aircraft.

- The Super High Frequency (SHF) Multiplexor (MUX) project integrates a more capable and logistically supportable MUX to replace the obsolete and temporary solution used today. The current SHF MUX is prone to intermittent disconnects and poor performance. A new device will allow the E-4B to better meet requirements of transmitting combined secure and non-secure digital data streams via satellite.

- The Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) effort upgrades the air traffic communications systems to improve Navigation and Instrument Approach capabilities. These ongoing efforts are required to comply with both U.S. and international air traffic management requirements and maintain world-wide (anytime/anywhere) availability. This effort will add Automatic Dependent Surveillance - Broadcast Out (ADS-B Out) capability, a Mode 5 IFF capability, and a Multi-Mode Receiver for Global Positioning System (GPS) Precision Instrument Approaches and replace the obsolete Flight Management Computer (FMC) and upgrade required systems to meet domestic and foreign CNS/ATM requirements. This is expected to be an on-going program to meet evolving CNS/ATM requirements.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*	PROJECT 674777: *E-4B Aircraft Modernization*

- Secure, Survivable Communication efforts will upgrade and replace existing systems required to meet existing National Security Presidential Directive (NSPD)-28 and NSPD-51/Homeland Security Presidential Directive (HSPD)-20 requirements and to ensure continued connectivity and interoperability as satellite and communications infrastructure evolves. Expected modifications requiring RDT&E include, but are not limited to, installation of Family of Beyond-Line-of-Site Terminals (FAB-T), Presidential National Voice Conferencing (PNVC), modification of the current Super High Frequency (SHF) system to meet immediate needs, and eventual replacement of the SHF System. FAB-T Command Post Terminals will replace the MILSTAR Terminal and provide access to protected wideband Advanced Extremely High Frequency (AEHF) satellite networks. PNVC replaces Survivable Emergency Conferencing Network (SECN), which will not be supported once the AEHF satellite network is in place. Upgrade of the current SHF system is required in the near-term to replace the most critically obsolete components to ensure that the system remains operable and logistically supportable until a replacement system is fielded. A replacement to the SHF system is required as secure, survivable communications capability transitions from the Defense Satellite Communications System (DSCS).

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: EMP Testing ***Description:*** Completed EMP Testing to validate compliance with applicable EMP hardness Mil Standards ***FY 2010 Accomplishments:*** Completed initial EMP Test at Patuxent River Naval Air Station ***FY 2011 Plans:*** Completing EMP Testing on two E-4Bs at Patuxent River Naval Air Station. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***	6.000	2.000	-	-	-
Title: SHF MUX ***Description:*** Develop, install, and test a more capable and logistically supportable Super High Frequency (SHF) Multiplexor (MUX). ***FY 2010 Accomplishments:*** Developed SHF MUX replacement prototype ***FY 2011 Plans:***	0.954	0.285	0.068	-	0.068

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*	PROJECT 674777: *E-4B Aircraft Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Installing and testing prototype SHF MUX replacement. ***FY 2012 Base Plans:*** Will install and test prototype SHF MUX replacement. ***FY 2012 OCO Plans:***					
Title: CNS/ATM ***Description:*** Develop, install, and test a prototype installation kit to modernize applicable CNS/ATM systems in accordance with domestic and foreign air traffic management requirements ***FY 2010 Accomplishments:*** Developed a CNS/ATM roadmap based on applicable air traffic management requirements. Developed prototype CNS/ATM installation kit. ***FY 2011 Plans:*** Prototyping and developing CNS/ATM upgrade/replacement kits. ***FY 2012 Base Plans:*** Will prototype and develop CNS/ATM upgrade/replacement kits. ***FY 2012 OCO Plans:***	8.918	2.747	0.300	-	0.300
Title: Secure, Survivable Voice Comms ***Description:*** Develop, install, and test a prototype installation kit to replace the most critically obsolete components of the current SHF System ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** Developing, installing, and testing a prototype installation kit to replace the most critically obsolete components of the current SHF System ***FY 2012 Base Plans:*** Will perform technology studies for secure, survivable voice comms capability. ***FY 2012 OCO Plans:***	-	7.000	4.177	-	4.177

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*	PROJECT 674777: *E-4B Aircraft Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Secure Data Crypto ***Description:*** Develop, install, and test a prototype installation kit to replace the decertified cryptographic equipment. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** Will develop prototype for the Secure Data Crypto ***FY 2012 OCO Plans:***	-	-	1.000	-	1.000
Title: SPO Support ***Description:*** SPO support and travel ***FY 2010 Accomplishments:*** Performed SPO support and travel ***FY 2011 Plans:*** Completing EMP Testing on two E-4Bs at Patuxent River Naval Air Station ***FY 2012 Base Plans:*** Will perform SPO support and travel ***FY 2012 OCO Plans:***	0.800	0.500	0.300	-	0.300
Accomplishments/Planned Programs Subtotals	16.672	12.532	5.845	-	5.845

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*	PROJECT 674777: *E-4B Aircraft Modernization*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• APAF: PE 0302015F: *E-4B NAOC*	76.541	38.973	58.753	0.000	58.753	37.807	11.091	13.252	16.723	Continuing	Continuing

D. Acquisition Strategy

Implementation of modifications will be contracted under the sole source Product Support Integration (PSI) with Boeing - Wichita. Patuxent River NAS will be providing EMP test support and execution.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*	PROJECT 674777: *E-4B Aircraft Modernization*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Secure Data Crypto	SS/CPIF	Boeing, Wichita Development & Modification Center:Wichita, KS	-	-		1.000	Feb 2012	-		1.000	Continuing	Continuing	TBD
SHF MUX Upgrade Development and Integration	SS/CPIF	Boeing, Wichita Development & Modification Center:Wichita, KS	0.954	0.285		0.068	Jan 2012	-		0.068	0.000	1.307	1.307
CNS/ATM Development and Integration	SS/CPIF	Boeing, Wichita Development & Modification Center:Wichita, KS	8.918	2.747		0.300	Feb 2012	-		0.300	Continuing	Continuing	TBD
Secure Survivable Communication	SS/CPIF	Boeing, Wichita Development & Modification Center:Wichita, KS	-	7.000	Mar 2011	4.477	Mar 2012	-		4.477	0.000	11.477	11.477
		Subtotal	9.872	10.032		5.845		-		5.845			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMP Test Support - Boeing	SS/CPIF	Boeing, Wichita Development & Modification Center:Wichita, KS	4.000	1.333	Mar 2011	-		-		-	0.000	5.333	5.333
EMP Test Support - NAVAIR	MIPR		2.000	0.667	Mar 2011	-		-		-	0.000	2.667	2.667

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*	PROJECT 674777: *E-4B Aircraft Modernization*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Naval Air Warfare Center:Patuxent River NAS, MD											
		Subtotal	6.000	2.000		-		-		-	0.000	8.000	8.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
E-4B Program Office contractor support	C/Various	Chickasaw Nation Industries, Inc.:Oklahoma City, OK	0.250	0.250	Mar 2011	-		-		-	Continuing	Continuing	TBD
E-4B Program Office Govt TDY/PMA	C/TBD	TBD:TBD,	0.550	0.250		-		-		-	Continuing	Continuing	TBD
		Subtotal	0.800	0.500		-		-		-			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.672	12.532		5.845		-		5.845			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*	PROJECT 674777: *E-4B Aircraft Modernization*

E-4B NAOC RDT&E Mod Schedule

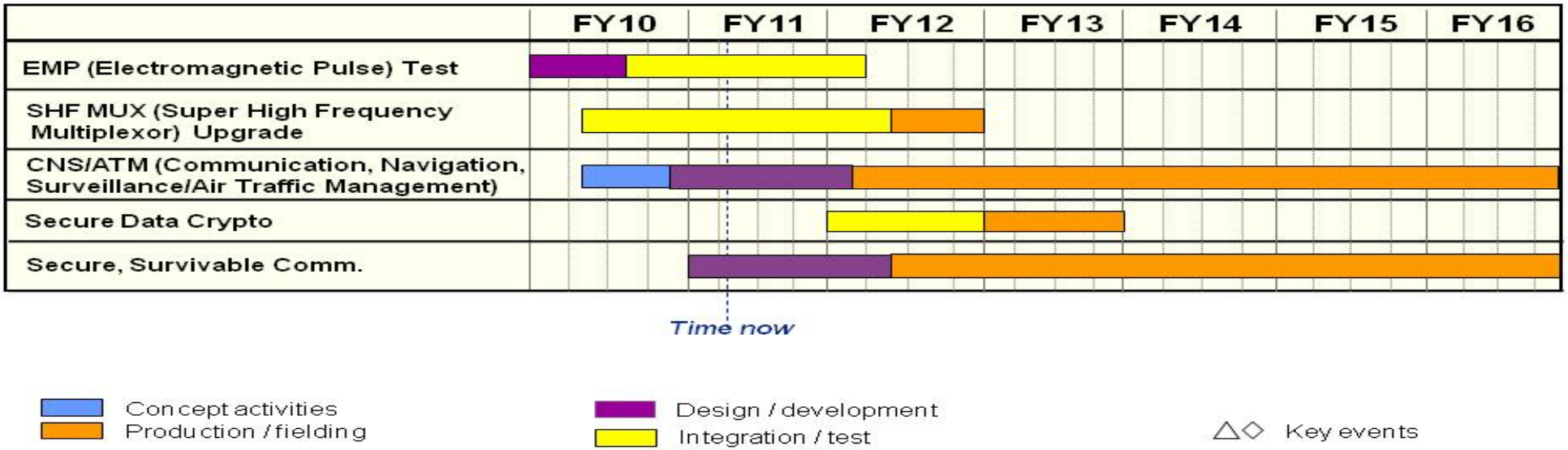

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*	PROJECT 674777: *E-4B Aircraft Modernization*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
EMP Design and Development	1	2010	3	2010
EMP Integration and Test	3	2010	1	2012
SHF MUX Integration and Test	2	2010	2	2012
CNS/ATM Concept Development	2	2010	4	2010
CNS/ATM Design and Development	4	2010	1	2012
Secure Data Crypto Integration and Test	1	2012	4	2012
Secure, Survivable Communications Design and Development	1	2011	2	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*	PROJECT 675301: *Next Generation NAOC*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675301: *Next Generation NAOC*	8.547	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The four aircraft E-4B NAOC fleet satisfies the military need for an airborne operations center with communications capabilities that permit military and civilian leadership to monitor and control military and civil national assets during all phases of nuclear and non-nuclear conflict or natural disaster. The E-4B NAOC fleet also satisfies the military requirement to provide a highly survivable node of the National Military Command System (NMCS).

The Air Force received RDT&E funds in FY10 to continue analysis for a replacement fleet based on the recommendations of the E-4B NAOC Aircraft Replacement AoA. These funds have been used to develop a Technology Development Strategy, Test and Evaluation Strategy, Systems Engineering Plan, Lifecycle Management Plan, Initial Capabilities Document, and other required documents leading up to a Milestone A decision. A number of risk reduction studies, such as a sustainability study and antenna/communications technology study, are also planned.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Program Acquisition Documentation ***Description:*** Develope documentation leading to a Milestone A decision as well as execute a number of risk reduction studies, such as a sustainability study and antenna/communications technology study. ***FY 2010 Accomplishments:*** Developed documentation leading to a Milestone A decision as well as execute a number of risk reduction studies, such as a sustainability study and antenna/communications technology study. ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***	8.547	-	-	-	-
Accomplishments/Planned Programs Subtotals	8.547	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*	PROJECT 675301: *Next Generation NAOC*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Air Force Electronic Systems Center (ESC) is the NAOC Replacement contracting authority for the $8.5M FY10 RDT&E, AF. The contracts awarded will be firm fixed price (FFP) contracts awarded on a sole source basis. ESC will lead risk reduction and technology exploration studies leading up to a Material Development Decision and Milestone A Decision.

Each study will be supported by contract support with required expertise and may request data and other support from E-4B Product Support Integrator, Boeing Wichita Development & Modification Center.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*	PROJECT 675301: *Next Generation NAOC*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Data and Analytical Support	SS/FFP	Boeing, Wichita Development & Modification Center:Wichita, KS	0.943	-		-		-		-	0.000	0.943	0.943
Project Management Support	SS/FFP	Booz Allen Hamilton:McLean, VA	1.931	-		-		-		-	Continuing	Continuing	TBD
		Subtotal	2.874	-		-		-		-			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
A&AS Support and Govt TDY	C/TBD	Jacobs Technology, Inc.:Lincoln, MA	5.673	-		-		-		-	0.000	5.673	5.673
		Subtotal	5.673	-		-		-		-	0.000	5.673	5.673

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*	PROJECT 675301: *Next Generation NAOC*

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.547	-		-		-		-			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*	PROJECT 675301: *Next Generation NAOC*

E-4B NAOC Replacement Program ("E-XX")

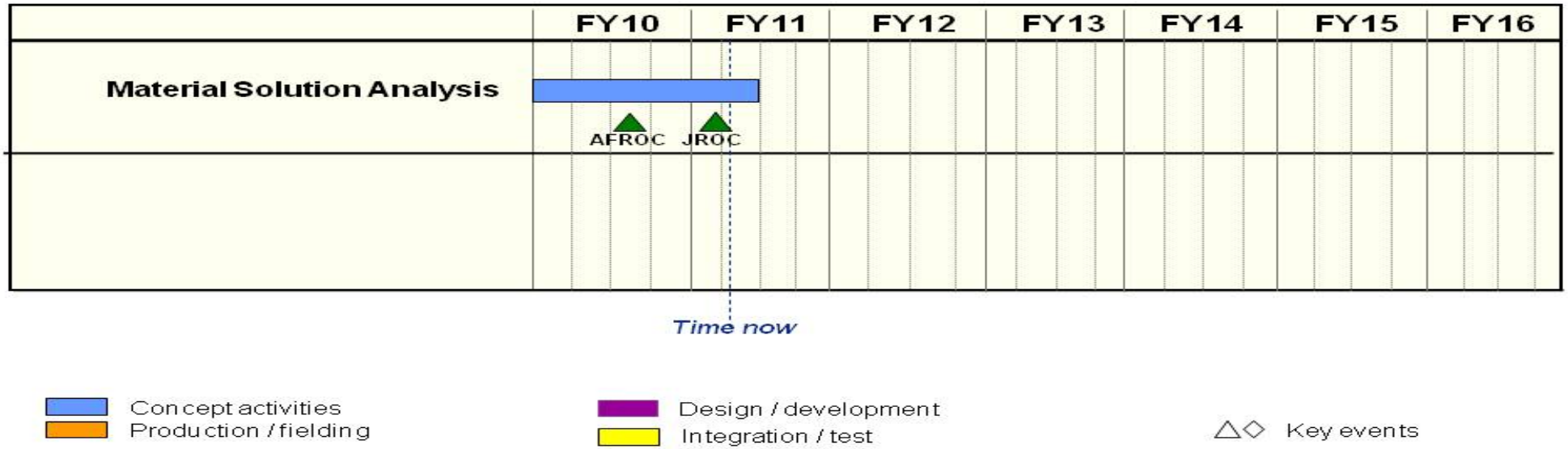

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0302015F: *E-4B NATIONAL AIRBORNE OPERATIONS CENTER*	**PROJECT** 675301: *Next Generation NAOC*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Material Solutions Analysis	1	2010	2	2011

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	82.056	78.784	43.811	-	43.811	19.787	13.791	5.862	0.927	Continuing	Continuing
672832: *MEECN System Improvements*	1.790	1.299	0.786	-	0.786	0.822	0.851	0.887	0.927	Continuing	Continuing
674610: *Minuteman MEECN Program (MMP)*	21.127	32.029	10.465	-	10.465	-	-	-	-	Continuing	Continuing
675047: *Ground Element MEECN System (GEMS)*	59.139	45.456	14.491	-	14.491	6.063	-	-	-	Continuing	Continuing
675378: *Long Term Solution*	-	-	18.069	-	18.069	12.902	12.940	4.975	-	Continuing	Continuing

Note

In FY 2012, Project 675378 Long Term Solution (LTS) includes new start efforts.

The program funding for Project 672832 MEECN System Improvements (MSI) includes reductions for Reports/Studies/Board efficiencies that are not intended to impact program content. The efficiencies reductions total $292K in FY12.

A. Mission Description and Budget Item Justification

Minimum Essential Emergency Communications Network (MEECN) systems provide assured communications connectivity between the President and the strategic deterrent forces in stressed environments. There are four on-going MEECN activities working to modernize strategic forces' communication networks.

MEECN System Improvements (MSI) is a long-range planning process with users (Air Force Global Strike Command (AFGSC), Air Combat Command (ACC), Air Force Space Command (AFSPC), Air Mobility Command (AMC), US Strategic Command (USSTRATCOM), and the Navy) to develop positions for current and future requirements/issues based on available technology.

Minuteman MEECN Program Upgrade (MMPU) updates existing systems composed of Minuteman ICBM Launch Control Center (LCC) Very Low Frequency/Low Frequency (VLF/LF) communications along with a Minuteman ICBM LCC Extremely High Frequency (EHF) communications capability. MMPU will provide a capability in the LCC for the Missile Combat Crew Members to have operator control of the terminal to switch among various EHF/Advanced EHF (AEHF) satellite constellations and be compatible with Advanced EHF (AEHF). AEHF is an Extended Data Rate (XDR) waveform that provides more secure transmit/receive at High Data Rate (HDR) frequencies than the Low Data Rate (LDR) frequencies currently used on MILSTAR satellites.

Ground Element MEECN Systems (GEMS) provides secure, survivable inter-site, intra-site, and mobile VLF and EHF communication to bomber, tanker, reconnaissance units and other communications facilities with strategic responsibilities. GEMS will also be upgraded to be compatible with AEHF.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*

Long Term Solution (LTS) will replace the current Nuclear Command, Control and Communications (NC3) Hybrid Solution and provide a worldwide, robust, non-survivable NC3 network for specialized messaging services to meet Nuclear Technical Performance Criteria (NTPC) requirements for Emergency Action Message (EAM) dissemination.

This program is in Budget Activity 07, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	72.360	78.784	10.855	-	10.855
Current President's Budget	82.056	78.784	43.811	-	43.811
Total Adjustments	9.696	-	32.956	-	32.956
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	9.999	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.303	-	32.956	-	32.956

Change Summary Explanation

FY10 funding increase includes $6.715M for MMPU to complete remaining RDT&E effort, $2.997M for GEMS due to programmatic/technical issues, and a funding decrease includes $303K due to higher AF priorities.

FY12 funding changes include $18.069M initial funding for new start LTS, additional $10.465M to complete MMPU integration and test, additional $4.952M for GEMS due to program delays, and decreases for MSI including a $292K reduction for Reports/Studies/Boards efficiencies and $238K for other higher AF priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 672832: *MEECN System Improvements*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
672832: *MEECN System Improvements*	1.790	1.299	0.786	-	0.786	0.822	0.851	0.887	0.927	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

MEECN System Improvements (MSI) is a long-range planning process with users (Air Combat Command (ACC), Air Force Space Command (AFSPC), Air Force Global Strike Command (AFGSC), Air Mobility Command (AMC), US Strategic Command (USSTRATCOM), and the Navy) to develop positions for current and future requirements/issues based on available technology. Trade-off analysis is performed to identify benefits and drawbacks of maintaining current systems. Studies are conducted to monitor communications system technology and potential integration complexities into current and future capabilities. MSI provides pro-active support to the Nuclear and National C2 community: Develops an Air Force National Command and Control (NC2) Roadmap for FYDP budget inputs. Partner with Navy on Common VLF Receiver (CVR) requirements and architectural design. .

This program is in Budget Activity 07, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and antipcate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: MEECN System Improvements	1.790	1.299	0.786	-	0.786
Description: NC2 Studies & Analysis					
FY 2010 Accomplishments: Develop NC2 Architecture Roadmap; conduct Common VLF Receiver Trade-off Analysis					
FY 2011 Plans: Develop NC2 Architecture Roadmap; conduct Common VLF Receiver Trade-off Analysis					
FY 2012 Base Plans: Develop NC2 Architecture Roadmap; conduct Common VLF Receiver Trade-off Analysis					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	1.790	1.299	0.786	-	0.786

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 672832: *MEECN System Improvements*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A: *None*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Johns Hopkins University (JHU) Applied Physics Lab (APL) is on contract to provide updates to the NC2 Roadmap and assist with a VLF/LF Modernization initiative.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 672832: *MEECN System Improvements*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Circular Error Probable (CEP) Analysis	MIPR	JHU APL:Laurel, MD	0.805	-		-		-		-	0.000	0.805	0.805
NC2 Roadmap	MIPR	JHU APL:Laurel, MD	3.805	0.665	Dec 2010	0.305	Dec 2011	-		0.305	Continuing	Continuing	TBD
Simulation/Modeling Equipment	MIPR	Lincoln Labs:Bedford, MA	2.224	-		-		-		-	0.000	2.224	2.224
Vol VII EAM Format Updates	C/CPAF	GDCS:Needham, MA	0.500	-		-		-		-	0.000	0.500	0.500
VLF/LF Modernization Studies	MIPR	SPAWAR:San Diego, CA	0.605	0.100	Nov 2010	0.100	Nov 2011	-		0.100	Continuing	Continuing	TBD
		Subtotal	7.939	0.765		0.405		-		0.405			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Acquisition Support	Various	Various:Various,	9.658	0.534	Jan 2011	0.381	Jan 2012	-		0.381	Continuing	Continuing	TBD
MITRE	TBD	TBD:Bedford, MA	0.633	-		-		-		-	0.000	0.633	0.633
		Subtotal	10.291	0.534		0.381		-		0.381			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 672832: *MEECN System Improvements*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	18.230	1.299		0.786		-		0.786			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 672832: *MEECN System Improvements*

MSI

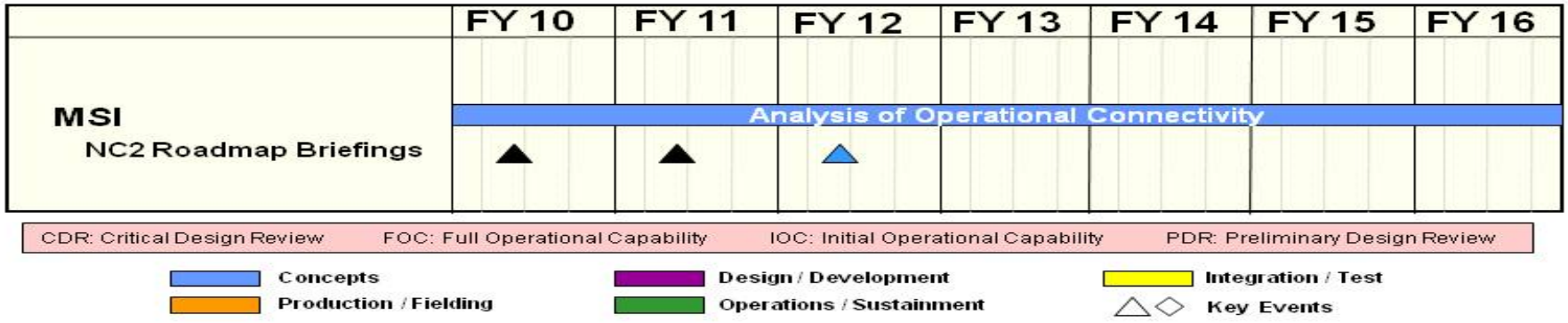

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 672832: *MEECN System Improvements*

Schedule Details

	Start		End	
Events	Quarter	Year	Quarter	Year
NC2 Studies and Analysis	1	2010	4	2016
NC2 Roadmap Debriefs	2	2012	2	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 674610: *Minuteman MEECN Program (MMP)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674610: *Minuteman MEECN Program (MMP)*	21.127	32.029	10.465	-	10.465	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Minuteman MEECN Program Upgrade (MMPU) modernizes existing Minuteman ICBM Launch Control Center (LCC) Extremely High Frequency (EHF) communications to provide a capability for Missile Combat Crew Members to have operator control of the terminal in the LCC to switch rapidly among various EHF/ Advanced EHF (AEHF) satellite constellations. This upgrade will be compatible with AEHF satellite and the supporting key management infrastructure (crypto interoperability). AEHF is an Extended Data Rate (XDR) waveform that provides more secure transmit/receive at High Data Rate (HDR) frequencies than the Low Data Rate (LDR) frequencies currently used on MILSTAR satellites. The AEHF terminal will provide both receive and report-back capability. The terminal operator control modification will allow missile combat crews to transition between MILSTAR and AEHF satellite constellations without dispatch of a maintenance team. These modifications comply with USSTRATCOM requirement for MMP terminals to communicate at higher data rates. Due to late availability of AEHF satellite and supporting ground and over the air infrastructure, additional MMPU regression testing is planned for FY11 and FY12.

This program is in Budget Activity 07, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and antipcate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: MMP Upgrade Engineering and Manufacturing Development	21.127	32.029	10.465	-	10.465
Description: MMP Upgrade Engineering and Manufacturing Development ***FY 2010 Accomplishments:*** Continued Engineering and Manufacturing Development (combined MILSTAR LDR/AEHF XDR modem design, cryptographic upgrade, hardware and software development, antenna integration, development and prime item testing with on-orbit MILSTAR satellite and AEHF satellite simulator (SATSIM)). ***FY 2011 Plans:*** Continue EMD phase and conduct weapon system testing (WST) and operational testing (OT) with on-orbit MILSTAR LDR satellite. Also continue AEHF development testing and conduct AEHF on-orbit XDR testing to verify interoperability with AEHF satellite and supporting connunications/cryptographic infrastructure in preparation for combined MILSTAR LDR/AEHF XDR on-orbit WST and OT. ***FY 2012 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 674610: *Minuteman MEECN Program (MMP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Complete integration and test with MILSTAR LDR/AEHF XDR satellites and supporting communications/ cryptographic infrastructure.					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	21.127	32.029	10.465	-	10.465

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE0303131F: *MEECN, MPAF*	0.000	0.000	40.991	0.000	40.991	16.573	12.376	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

The ICBM Prime Integrating Contract (IPIC), through OO-ALC, Hill AFB, UT, was used as a contracting vehicle for the legacy Minuteman MEECN Program (MMP) and the contractor will continue to serve in an advisory role for integration support for the MMPU program.

Two Concept and Technology Demonstration (C&TD) contracts were awarded to separate vendors following full and open competition. The MMPU EMD effort was a full and open competition and was awarded to Raytheon Company, Marlborough, MA on 15 Jan 08.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 674610: *Minuteman MEECN Program (MMP)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MMP Development	C/CPAF	Northrop Grumman:Layton, UT	46.069	-		-		-		-	0.000	46.069	46.069
MMP Upgrade Technology Development	C/FFP	Rockwell Collins & Raytheon:Various,	16.566	-		-		-		-	0.000	16.566	16.566
MMP Upgrade Program Integrator (Advisor)	C/TBD	Northrop Grumman:Layton, UT	6.122	3.494	Feb 2011	1.050	Feb 2012	-		1.050	0.000	10.666	10.600
MMP Upgrade Engineering Manufacturing & Development	C/CPAF	Raytheon Company:Marlboro, MA	59.989	23.880	Dec 2010	6.465	Dec 2011	-		6.465	0.000	90.334	83.977
		Subtotal	128.746	27.374		7.515		-		7.515	0.000	163.635	157.212

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Acquisition Support	Various	Various:Various,	9.135	2.164	Dec 2010	1.950	Dec 2011	-		1.950	0.000	13.249	13.288
MITRE	SS/CPFF	MITRE:Bedford, MA	7.437	1.983	Oct 2010	0.750	Oct 2012	-		0.750	0.000	10.170	10.067
PMA	Various	Various:Various,	0.591	0.378	Dec 2010	0.100	Dec 2011	-		0.100	0.000	1.069	0.940
		Subtotal	17.163	4.525		2.800		-		2.800	0.000	24.488	24.295

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	Various	Various:Various,	0.276	0.130	Mar 2011	0.150	Mar 2012	-		0.150	0.000	0.556	0.492
		Subtotal	0.276	0.130		0.150		-		0.150	0.000	0.556	0.492

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 674610: *Minuteman MEECN Program (MMP)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	146.185	32.029		10.465		-		10.465	0.000	188.679	181.999

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	**PROJECT** 674610: *Minuteman MEECN Program (MMP)*

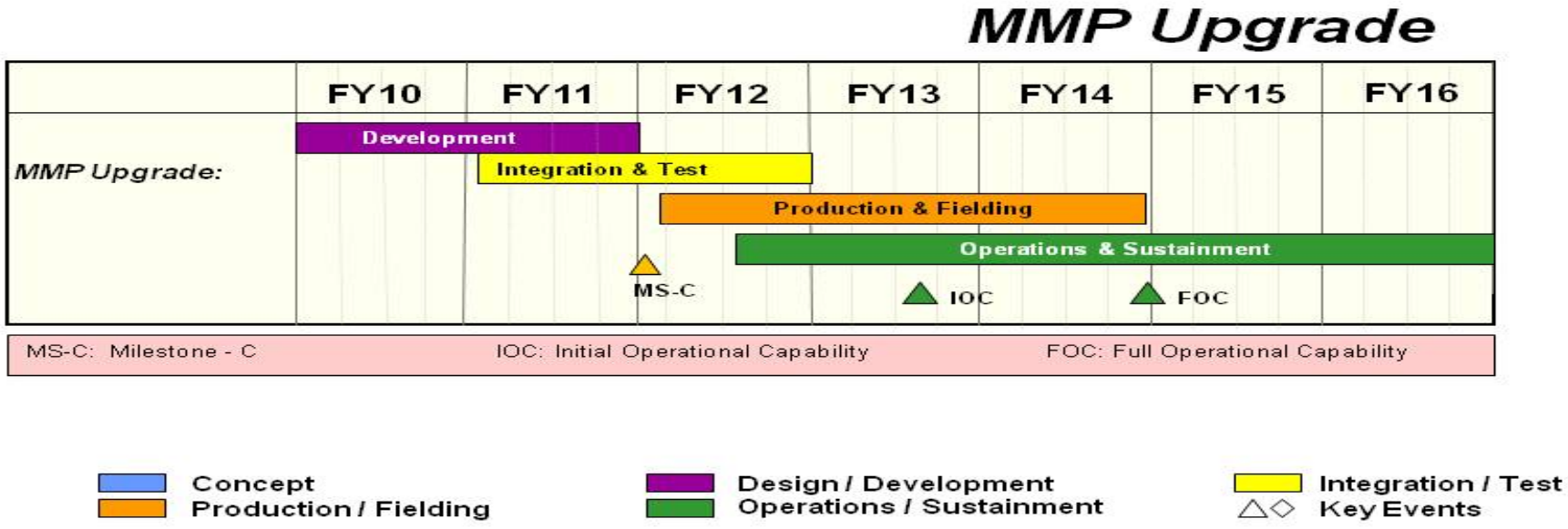

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	**PROJECT** 674610: *Minuteman MEECN Program (MMP)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Engineering Manufacturing & Development (started in 2008)	1	2010	4	2011
Integration and Test	1	2011	4	2012
Milestone C	1	2012	1	2012
Initial Opertional Capabilty	3	2013	3	2013
Full Operational Capability	4	2014	4	2014

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 675047: *Ground Element MEECN System (GEMS)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675047: *Ground Element MEECN System (GEMS)*	59.139	45.456	14.491	-	14.491	6.063	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Ground Element MEECN Systems (GEMS) will be comprised of EHF/AEHF, VLF/LF, HF, UHF and Aircrew Alerting components and will provide secure, survivable inter-site, intra-site and mobile communications to bomber, tanker, reconnaissance and other communications facilities with strategic responsibilities. GEMS terminals will be developed and fielded to replace strategic mobile and fixed-site Single Channel Anti-jam Man-Portable (SCAMP) terminals. GEMS will also replace the Aircraft Alerting Communications Electromagnetic Pulse System/Electromagnetic Pulse Hardened Dispersal Communications (AACE/EHDC) systems. - GEMS' primary mission is to provide strategic Wing Command Posts and mobile support teams survivable communication paths to receive EAMs and Force Management messages from Nuclear Command and Control (NC2) nodes and disseminate them to bomber, tanker, and recce aircrews. - GEMS will provide solutions to existing capability shortfalls for NC2 and has significant potential to provide distributed and transportable command and control capabilities beyond the traditional NC2 mission - GEMS is the last line of operational comm when all other peacetime links fail.

This program is in Budget Activity 07, Operational System Development, because this budget activity includes developoment efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequen fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Engineering and Manufacturing Development	59.139	45.456	14.491	-	14.491
Description: Engineering and Manufacturing Development ***FY 2010 Accomplishments:*** Engineering and Manufacturing Development to include: EHF, VLF, HF and UHF integration of modem design, cryptographic upgrade, software development, antenna integration and pager/klaxon development. ***FY 2011 Plans:*** Engineering and Manufacturing Development to include: EHF, VLF, HF and UHF integration of modem design, cryptographic upgrade, software development, antenna integration and pager/klaxon development. ***FY 2012 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 675047: *Ground Element MEECN System (GEMS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Engineering and Manufacturing Development to include: EHF, VLF, HF and UHF integration of modem design, cryptographic upgrade, software development, antenna integration and pager/klaxon development. Integration and test of the developed hardware and software.					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	59.139	45.456	14.491	-	14.491

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE0303131F: *MEECN, OPAF*	0.000	0.000	0.000	0.000	0.000	0.000	38.803	33.104	33.714	Continuing	Continuing

D. Acquisition Strategy

Two Concept and Technology Demonstration (C&TD) contracts were awarded to separate vendors following full and open competition. Rockwell Collins of Cedar Rapids, IA was awarded the Cost Plus Award Fee (CPAF) Engineering Manufacturing and Development (EMD) and production contract on 23 June 2005.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 675047: *Ground Element MEECN System (GEMS)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Manufacturing Development	SS/CPAF	Rockwell Collins:Cedar Rapids, IA	238.355	39.143	Dec 2010	10.097	Dec 2011	-		10.097	Continuing	Continuing	TBD
		Subtotal	238.355	39.143		10.097		-		10.097			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Acquisition Support	Various	Various:Various,	15.329	2.991	Dec 2010	2.100	Dec 2011	-		2.100	Continuing	Continuing	TBD
MITRE	WR	MITRE:Bedford, MA	10.544	2.522	Oct 2010	1.600	Oct 2011	-		1.600	Continuing	Continuing	TBD
		Subtotal	25.873	5.513		3.700		-		3.700			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	Various	Various:Various,	1.943	0.275	Feb 2011	0.544	Feb 2012	-		0.544	Continuing	Continuing	TBD
		Subtotal	1.943	0.275		0.544		-		0.544			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMA	Various	Various:Various,	2.066	0.525	Dec 2010	0.150	Dec 2011	-		0.150	Continuing	Continuing	TBD
		Subtotal	2.066	0.525		0.150		-		0.150			

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	268.237	45.456		14.491		-		14.491			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 675047: *Ground Element MEECN System (GEMS)*	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	**PROJECT** 675047: *Ground Element MEECN System (GEMS)*

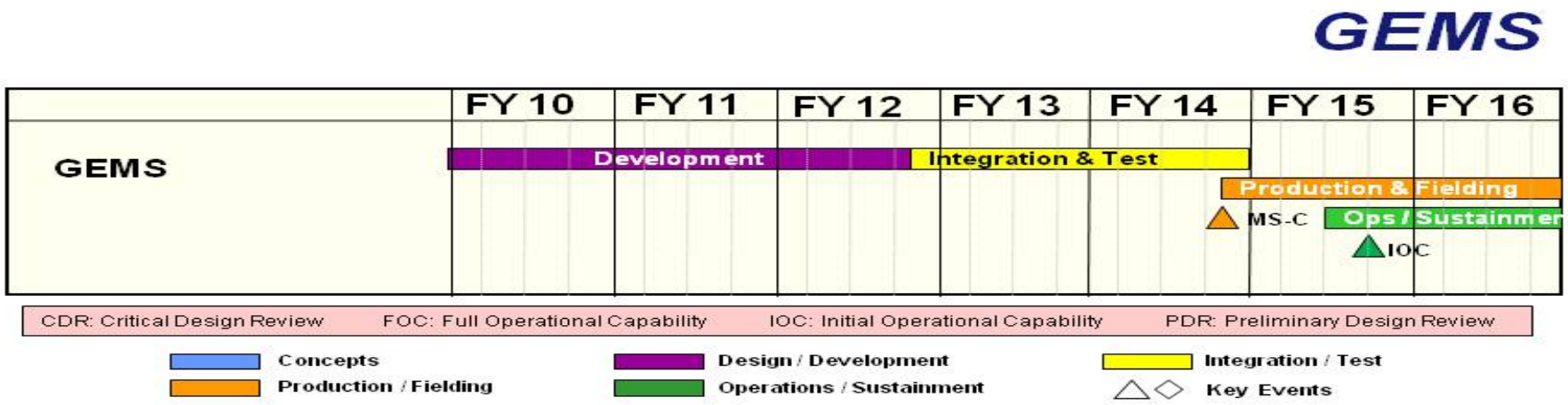

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	**PROJECT** 675047: *Ground Element MEECN System (GEMS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Engineering Manufacturing & Development (started FY05)	1	2010	4	2012
Integration and Test	4	2012	4	2014
Milestone C	4	2014	4	2014

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 675378: *Long Term Solution*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675378: *Long Term Solution*	-	-	18.069	-	18.069	12.902	12.940	4.975	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Long Term Solution (LTS) is an FY12 New Start.

A. Mission Description and Budget Item Justification

LTS will replace the current Nuclear Command, Control and Communications (NC3) Hybrid Solution which consists of Navy's Nova system and Air Forces's Strategic Authomated Command and Control System (SACCS), and will provide a worldwide, robust, non-survivable NC3 network for specialized messaging services to meet Nuclear Technical Performance Criteria (NTPC) requirements for Emergency Action Message (EAM) dissemination. The mission of the NC3 message service is to provide accurate and reliable delivery of time-crtical messages from the Executing Command Authority to nuclear forces and other authorized subscribers. NC3 LTS provides NC3 messaging sevices to the JS-approved NC2 subscribers and critical interfaces (~350).

This program is in Budget Activity 07, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Engineering and Manufacturing Development	-	-	18.069	-	18.069
Description: Design & develop IP based NC3 communications network					
FY 2010 Accomplishments:					
FY 2011 Plans:					
FY 2012 Base Plans: Design and develop IP based NC3 communications network. Support Milestone B decision process.					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	-	-	18.069	-	18.069

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 675378: *Long Term Solution*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• MEECN: *PE0303131F, OPAF*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	19.987	21.977	Continuing	Continuing

D. Acquisition Strategy

LTS Program Engineering and Manufacturing Development effort will be a full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 675378: *Long Term Solution*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Design IP-based NC2	C/TBD	TBD:TBD,	-	-		16.440	Dec 2011	-		16.440	Continuing	Continuing	TBD
		Subtotal	-	-		16.440		-		16.440			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Acquisition Support	Various	TBD:,	-	-		1.629	Dec 2011	-		1.629	Continuing	Continuing	TBD
		Subtotal	-	-		1.629		-		1.629			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Cost Totals	-	-		18.069		-		18.069			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	**PROJECT** 675378: *Long Term Solution*

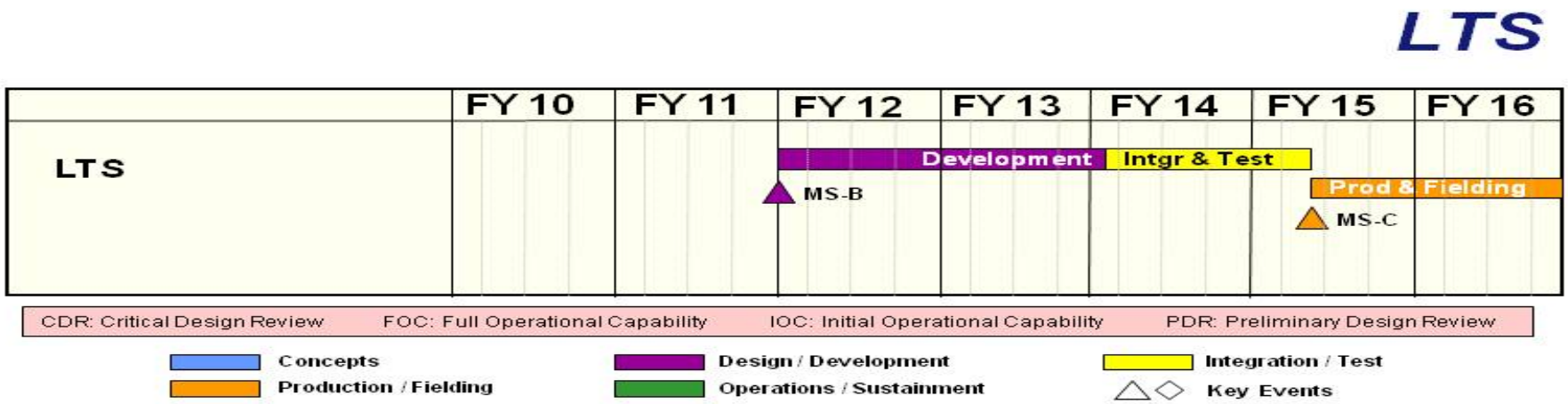

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303131F: *Minimum Essential Emergency Communications Network (MEECN)*	PROJECT 675378: *Long Term Solution*

Schedule Details

	Start		End	
Events	Quarter	Year	Quarter	Year
Long Term Solution (LTS) Milestone B	1	2012	1	2012
LTS Milestone C	2	2015	2	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	161.509	140.017	101.788	-	101.788	82.372	72.547	69.073	84.318	Continuing	Continuing
674861: *EKMS (Electronic Key Management System)*	3.535	2.540	1.777	-	1.777	2.029	2.059	0.599	0.637	Continuing	Continuing
675100: *Cryptographic Modernization*	131.928	118.787	77.518	-	77.518	63.366	58.864	54.877	69.775	Continuing	Continuing
675231: *AF Key Management Infrastructure (AF KMI)*	12.127	15.369	16.471	-	16.471	10.697	5.186	7.093	7.134	Continuing	Continuing
677820: *Computer Security RDT&E: Firestarter*	13.919	3.321	6.022	-	6.022	6.280	6.438	6.504	6.772	Continuing	Continuing

Note

The program funding includes reductions for CENTCOM Fourth Estate Baseline Review efficiencies that are not intended to impact program content. The efficiencies reductions total $0.455M in FY12.

The program funding includes reductions for Reports, Studies, Boards and Commissions Review efficiencies that are not intended to impact program content. The efficiencies reductions total $0.572M in FY12.

The program funding includes reductions for Reducing Reliance of DoD Services Support Contractors efficiencies that are not intended to impact program content. The efficiencies reductions total $0.012M in FY12.

A. Mission Description and Budget Item Justification

The overall focus of the RDT&E efforts within this program is two-fold. Focus one is to provide the capability to protect and defend USAF Command, Control, Communications, Computers, and Intelligence, Surveillance, and Reconnaissance (C4ISR) and Weapon Systems from Information Warfare (IW) attacks and to ensure their recovery from such attacks. To this end, the project does research and development of information protection tools and transitions them to operational systems. Focus two is transforming electronic key delivery and DoD cryptographic devices to meet the next generation warfighting requirements. This includes: 1) a totally "man-out-of-the-loop" electronic crypto key distribution system -- from the actual generation of the key in the Key Processor all the way into the using End Crypto Unit (ECU) -- thus eliminating the current key vulnerability to compromise by individuals transporting or loading the key; and 2) an inventory of cryptographic devices that requires less quantities since they are more robust, stronger, able to communicate extremely large amounts of data at greatly increased data rates, be upgraded more easily and less expensively, and are net-centric and Global Information Grid-compatible. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303140F: *Information Systems Security Program*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	165.401	140.017	117.844	-	117.844
Current President's Budget	161.509	140.017	101.788	-	101.788
Total Adjustments	-3.892	-	-16.056	-	-16.056
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-3.892	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-16.056	-	-16.056

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: 677820: *Computer Security RDT&E: Firestarter*		
Congressional Add: *Remote Suspect Identification*	2.531	-
Congressional Add Subtotals for Project: 677820	2.531	-
Congressional Add Totals for all Projects	2.531	-

Change Summary Explanation

$1.039M reduction in FY12 to support AF efficiencies
$15.02M reduction in FY12 for other AF priorities

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 674861: *EKMS (Electronic Key Management System)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674861: *EKMS (Electronic Key Management System)*	3.535	2.540	1.777	-	1.777	2.029	2.059	0.599	0.637	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Air Force Electronic Key Management System (AFEKMS) Program consists of multiple developments supporting the Air Force requirements portion of the DoD EKMS Program. (The National Security Agency [NSA] acts as the Executive Agency for the DoD EKMS Program.) AFEKMS, in concert with the overarching DoD EKMS Program, provides a secure and flexible capability for the electronic generation, distribution, accounting, and management of key material, voice callwords, and communications security (COMSEC) publications for the current generation of DoD Command, Control, Communications, Computers, and Intelligence (C4I) and for current generation of weapon systems. DoD EKMS replaced the previous manual distribution and management system providing cryptographic keying material for U.S. DoD Information Assurance. Information Assurance emphasizes confidentiality, access control, multi-level secure databases, trusted computing and information integrity. DoD EKMS has a three-tier hierarchical structure. This tiered structure provides capability to distribute, manage and account for COMSEC keying material. Tier 1 installations comprise the key material general and control capability. Tier 2 installations comprise the local distribution network (COMSEC accounts) and Tier 3 is where keying material is transferred from the EKMS infrastructure to the consumers End Cryptographic Units (ECUs).

EKMS improved protection of national security-related information by substantially enhancing confidentiality, integrity, and non-repudiation characteristics over the legacy manual key management systems. EKMS has and continues to greatly accelerate availability of crypto key materials through electronic transmission through Public Switched Telephone Network (PSTN) versus the manual handling and shipping of materials. While the current EKMS level-of-effort is directed at enhancing current and developing systems, the ultimate goal is for it to seamlessly transition to the net-centric DoD Key Management Infrastructure (KMI), currently scheduled to begin in FY2012. The AFEKMS Program continues to provide software development to support emerging requirements during the KMI transition period.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

NOTE: Software development (e.g., Data Management Device - DMD, Common User Application Software - CUAS, and Simple Key Loader - SKL) is rolled up into Tier 2/Tier 3 Development. Software upgrades are able to be bundled and tracked as a unit, thereby allowing less management overhead and more focus on configuration management and control.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Systems Engineering ***Description:*** Support AFEKMS Program for planning and migration to Key Management Infastructure (KMI).	0.230	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 674861: *EKMS (Electronic Key Management System)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Continued program office contract support to the AFEKMS Program for planning and migration to KMI. Provided support to develop a technical solution to maintain EKMS data synchronization while transitioning to KMI. Successfully tested and fielded the EKMS Tier 1 Maintenance Release 3. Evaluated the Phase V software suite and started the initial fielding for EKMS Phase V. ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***					
Title: Tier 2/Tier 3 Development ***Description:*** Tier 2 (base COMSEC account)/Tier 3 (key material field devices) development for emerging requirements. ***FY 2010 Accomplishments:*** Continued software development for Tier 2/Tier 3 Components (e.g. CUAS and DMD) to ensure emerging requirements identified in FY 10 as well as those requirements due in FY 11 meet operational timelines. ***FY 2011 Plans:*** Software incorporated into the next software release for Tier 2/Tier 3 cryptographic devices are Development for Tier 2/Tier 3 Components (e.g., CUAS and DMD). Software incorporated into the next software release for Tier 2/Tier 3 cryptographic devices are Development for EKMS continues to ensure emerging requirements identified in FY 10 as well as those requirements due in FY 11 meet operational timelines. ***FY 2012 Base Plans:*** Software development for Tier 2/Tier 3 EKMS cryptographic devices continues in order to deliver software enhancements for AF Systems emerging requirements identified in FY 11 and requirements due in FY 12. These components require software upgrades until such time as KMI is capable of providing support to the respective operational communities. ***FY 2012 OCO Plans:***	3.196	2.334	1.600	-	1.600
Title: Fill/Load Device ***Description:*** Fill/Load Device Post Production Software Development	0.109	0.206	0.177	-	0.177

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 674861: *EKMS (Electronic Key Management System)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Developed, Tested and Evaluated new Simple Key Loader User Application Software. Developed SKL load profiles to enable new End Crypto Units the abilities to be loaded using the SKL. ***FY 2011 Plans:*** Develop, Test and Evaluate new Simple Key Loader User Application Software. Develop SKL load profiles to enable new End Crypto Units the abilities to be loaded using the SKL. ***FY 2012 Base Plans:*** Develop, Test and Evaluate new Simple Key Loader User Application Software. Develop SKL load profiles to enable new End Crypto Units the abilities to be loaded using the SKL. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	3.535	2.540	1.777	-	1.777

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0303140F: *Information Systems Security Program, OPAF*	20.729	8.958	11.485	0.000	11.485	3.738	4.763	2.602	1.549	Continuing	Continuing

D. Acquisition Strategy

All major contracts within this Project are open to full and open competition with technology knowledge, expertise, and prior experience on similar projects weighted heavily in the evaluation process.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 674861: *EKMS (Electronic Key Management System)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AFEKMS Program Office contractor support for planning and migration to KMI	SS/TBD	MITRE:San Antonio, TX	6.116	-		-		-		-	Continuing	Continuing	TBD
Tier 2/3 software development	Various	Various:,	10.132	2.334	Jan 2011	1.600	Jan 2012	-		1.600	Continuing	Continuing	TBD
Fill/Load Device Post Production Software Development	C/TBD	Mantech Sensor Technologies, Inc.:Red Bank, NY	0.109	0.206	Mar 2011	0.177	Mar 2012	-		0.177	Continuing	Continuing	TBD
		Subtotal	16.357	2.540		1.777		-		1.777			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.357	2.540		1.777		-		1.777			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
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	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 674861: *EKMS (Electronic Key Management System)*

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U.S. AIR FORCE

AF EKMS Schedule

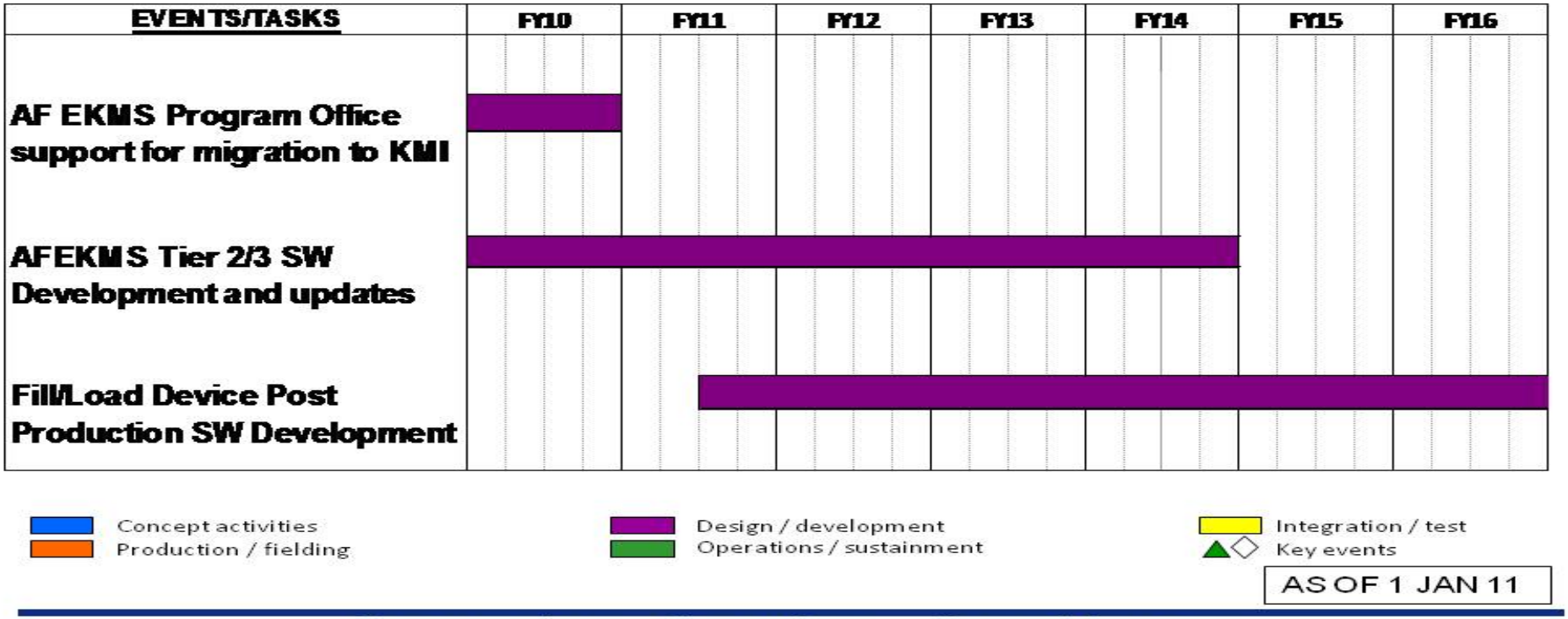

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303140F: *Information Systems Security Program*	**PROJECT** 674861: *EKMS (Electronic Key Management System)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
AFEKMS Program office contractor support for planning and migration to KMI	1	2010	4	2010
Tier 2/3 S/W development and updates	1	2010	4	2014
Fill/Load Device Post Production SW Development	3	2011	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 675100: *Cryptographic Modernization*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675100: *Cryptographic Modernization*	131.928	118.787	77.518	-	77.518	63.366	58.864	54.877	69.775	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Cryptographic Modernization Program modernizes cryptographic devices protecting critical information across the cyber domain operations and national security. In September 2000, the Defense Review Board (DRB) tasked NSA to evaluate the security posture of the cryptographic inventory. Systems with aging algorithms, those approaching non-sustainability, and those generally incompatible with modern key management systems were identified. Priority systems that required immediate replacement were also identified. In addition, NSA documented the need to modernize the cryptographic inventory with capabilities designed to enable network-centric operations. Replacements/Modernization of the near term vulnerable systems must occur within the timeframe specified in Chairman Joint Chiefs of Staff Notice (CJCSN) 6510. The DoD Cryptographic Modernization Program was established to develop a modern cryptographic base that provides assured security robustness, interoperability, advanced algorithms, releasability, programmability, and compatibility with the future Key Management Infrastructure (KMI). The program supports an integrated effort across the cyber domain to transform to next generation cryptographic capabilities providing U.S. forces and multinational and interagency partners the security needed to protect the flow and exchange of operational decision making information IAW national and international policy/standards, the validated operational requirements of the warfighters, and the Intelligence Communities.

The Cryptographic Modernization Program is a collection of projects accomplished in three phases: Replacement, Modernization, and Transformation. The Replacement Phase of the program focused on updating and/or replacing out-of-date algorithms along with unsustainable cryptographic products. The Modernization Phase provides common solutions to existing multiple cryptographic end items, as well as updating mid-term aging/unsupportable crypto equipment. Manpower and logistics requirements will be reduced and manpower efficiencies gained, while incremental capability enhancements and footprint reduction are provided. The third phase of the Cryptographic Modernization Program, Transformation, provides common joint solutions which enable secure transparent network-centric capabilities across the cyber domain. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: KG-3X ***Description:*** KG-3X Develops and acquires Cryptographic Modernization (CM) to replace the aging cryptographic capability for the KG-30 CLOCK START system, part of the Nuclear Command and Control, Minimum Essential Emergency Communications Network.	7.570	1.104	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Continued KG-3X CM development and test efforts of replacement crypto devices. Includes two new cryptographic devices and a software upgrade package for an existing device. ***FY 2011 Plans:*** Complete KG-3X CM development and test efforts of replacement crypto devices. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***					
Title: Remote Rekey (RRK) ***Description:*** Remote ReKey program will develop, acquire and install replacement of the CI-13 cryptographic system at remote and/unmanned NORAD surveillance sites. Modernized system complements Identification Friend or Foe (IFF) Mode 5 system upgrade and will distribute cryptographic keys for 23 different End-Crypto-Units that are net ready and compatible across multiple communication paths. ***FY 2010 Accomplishments:*** Continued development and initiate test efforts of replacement cryptographic system. ***FY 2011 Plans:*** Complete development and test efforts of replacement cryptographic system. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***	26.172	15.122	-	-	-
Title: Combat Key Generator (CKG) ***Description:*** Develop Combat Key Generator (CKG) (KOK-23), a modernized replacement for KOK-13/ KOK-13A. The CKG will generate cryptographic keys that enable high speed battlefield communications for warfighter integration of battlefield systems and data exchange. ***FY 2010 Accomplishments:*** Completed development and test efforts, initiated production of ten Low Rate Initial Production (LRIP) units (to be delivered in FY11). ***FY 2011 Plans:***	2.267	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2012 Base Plans:					
FY 2012 OCO Plans:					
Title: VINSON/ANDVT Cryptographic Modernization (VACM) ***Description:*** VINSON/ANDVT Cryptographic Modernization (VACM) will develop and acquire cryptographic capability to replace the legacy capability on VINSON/ANDVT secure voice communications on aircraft, ships, and ground fixed and mobile platforms (Devices: KY-57/58, KY-99/100, KYV-5 and ARC-234 with VACM embedded). ***FY 2010 Accomplishments:*** Received Milestone B approval. Awarded software and hardware development contract. Initiated development and ARC 234 Crypto modification effort. ***FY 2011 Plans:*** Continue software and hardware development leading to System Requirements Review (SRR), Preliminary Design Reviews, and continue ARC 234 (VACM-Embedded) development. ***FY 2012 Base Plans:*** Continue development and initiate testing and test production representative engineering models, perform NSA certification testing and developmental testing. ***FY 2012 OCO Plans:***	8.478	27.645	28.242	-	28.242
Title: Space Mission Data (SMD) ***Description:*** Space Mission Data (SMD) will develop and acquire modernized cryptographic devices to secure Intelligence, Surveillance, and Reconnaissance sensor downlink data for all future DoD satellites. ***FY 2010 Accomplishments:*** Completed source selection and initiated SMD (KG-88) development for space and ground devices. ***FY 2011 Plans:*** Continue SMD (KG-88) development through Preliminary Design Review. ***FY 2012 Base Plans:***	6.111	18.990	23.690	-	23.690

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 675100: *Cryptographic Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue KG-88 development through Critical Design Review. Begin Qualification Testing. ***FY 2012 OCO Plans:***					
Title: Space Telemetry Tracking & Commanding (TT&C) ***Description:*** Space Telemetry Tracking & Commanding (TT&C) develops and acquires appropriate upgraded, modernized cryptographic devices to secure Tracking Telemetry & Communication functions for all future DoD satellites. ***FY 2010 Accomplishments:*** Continued Space Telemetry Tracking & Commanding (TT&C) (Aerospace Vehicle Equipment Increment One [AVE I1] [KG-327/327A], completed delta Preliminary Design Review and delivered 3 Engineering Development Models. Continued Ground Operating Equipment Increment One [GOE I1] [KS -252 and GOE-252] development). Accomplished KS-252 Operational Assessment. Continued Space TT&C AVE I2 and GOE I2 (Space Modular) pre-MS B activities. ***FY 2011 Plans:*** Complete Space TT&C AVE I1 (KG-327/327A) development, conduct Critical Design Review and Functional/ Physical Configuration Audits, achieve NSA Certification and Milestone C. Complete GOE I1 (KS -252) development. Continue Space TT&C AVE I2 and GOE I2 (Space Modular) pre-MS B activities. ***FY 2012 Base Plans:*** Accomplish Space TT&C AVE I2 and GOE I2(Space Modular Common Crypto) MS B and enter development phase and initiate directed algorithm modifications activities. ***FY 2012 OCO Plans:***	29.437	17.642	9.989	-	9.989
Title: F-22 multifunction Crypto ***Description:*** Partner with F-22 SPO to upgrade/modernize the KOV-20 and develop and deliver a multi function crypto (KOV-50). The KOV-50 will replace the KOV-20 crypto device. ***FY 2010 Accomplishments:*** Completed concept refinement to satisfy updated information assurance security requirements from NSA and HQ Air Combat Command. Initiated development leading to Preliminary Design in Aug 2010. ***FY 2011 Plans:***	11.012	0.200	0.204	-	0.204

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 675100: *Cryptographic Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue updating KOV-50 devices. Develop and initiate testing of the KOV-50 leading to Critical Design Reviews for Software and Hardware. ***FY 2012 Base Plans:*** Conduct Independent Validation and Verification of design, and deliver production version of the KOV-50 for qualification and flight testing. ***FY 2012 OCO Plans:***					
Title: CONCEPT REFINEMENT ***Description:*** Concept Refinement investigates and refines solutions to meet emerging warfighter requirements. Includes: CM Engineering support, Dynamic Group Keying (DGK), Multi Level Security (MLS), and studies. ***FY 2010 Accomplishments:*** Funded core engineering support to the Crypto Modernization portfolio, Dynamic Group Key (DGK) standards development to support SUAS and airborne community. Continued One Box One Wire Joint Capability Technology Demonstration (JCTD) risk reduction and smaller Multi-level Security (MLS) assessment/toolset efforts. Initiated MLS Deployment Enablers effort collaboration with Air Force Research Laboratory [AFRL] and MLS Multi-Port Cryptographic Prototype effort. ***FY 2011 Plans:*** Complete development and testing of SMDLL. Continue collaborative AFRL effort for MLS Deployment Enablers. Deliver DGK capabilities and fund core engineering support to the Crypto Modernization portfolio. Continue HADDL Type 1 concept refinement and initiate MLS Real-Time Operating System (RTOS) Graphics Controller effort. ***FY 2012 Base Plans:*** Fund core engineering support to the Crypto Modernization portfolio, focusing effort on projects such as MLS Deployment Enablers, MLS Trusted Labeling Interoperability Standard, RTOS Graphic Controller, DGK certification, Advanced Message-Oriented Data Security Module (AMODSM), and Missile Electronic Encryption Device (MEED) study efforts. ***FY 2012 OCO Plans:***	24.427	6.566	3.303	-	3.303
Title: TECHNICAL DEVELOPMENT	16.454	31.518	12.090	-	12.090

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303140F: *Information Systems Security Program*	**PROJECT** 675100: *Cryptographic Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Technology Development plans and executes technology maturation and initiates developmental programs to meet emerging and existing warfighter requirements. ***FY 2010 Accomplishments:*** Supported development and NSA certification of Mini-Crypto-Secure Micro Digital Data Link (MC-SMDDL) for AFSOC Small UAS. Continued to refine Remote Operational Management of End Crypto Units (ROME) standards with feedback from Internet Engineering Task Force (IETF). Initiated development of ROME Reference Implementation. Completed Type 1 Data at Rest (T1DAR). Continue MC-High Assurance DDL (MC-HADDL) concept refinement and initiate initial tech development efforts to meet NSA guidance. ***FY 2011 Plans:*** Complete development and testing of the digital data link module. Continue Type 1 concept refinement and initiate further tech development efforts to meet NSA guidance. Deliver encryption solution for MC-SMDDL project. Continue ROME IETF standard effort and development of Reference Implementation. Initiate technology development activities supporting T1DAR. ***FY 2012 Base Plans:*** Complete concept refinement and initiate development/competitive prototyping effort for a Type 1 solution. Continue development of Mini Crypto High Assurance DDL, as well as other emerging requirements such as T1DAR technology development efforts. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	131.928	118.787	77.518	-	77.518

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0303140F: *Information System Security Program, OPAF*	62.276	49.642	93.914	0.000	93.914	150.449	119.512	25.197	17.925	Continuing	Continuing

D. Acquisition Strategy

The Crypto Modernization portfolio of component acquisition projects is executing using a variety of approaches that vary from an evolutionary acquisition strategy using spiral development (for new component development) to incremental improvement leveraging leading-edge, certified non-developmental items (for

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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modernization). Contract type is selected for each of the individual projects based upon its acquisition approach and its unique technology risks. A mixture of fixed-price and cost-reimbursement contracts have been selected which maximize the best value for the Government as listed in the R-3.

Program Support Administration (PMA) costs are defined as those direct, unique program costs, other than payroll costs for government personnel, which are required for operation of a program office and its management and oversight role. These include costs such as Advisory and Assistance Service (A&AS) (Specialized Cost Services - SCS, Professional Acquisition Support Services - PASS, Engineering and Technology Acquisition Support Services - ETASS, Federally Funded Research and Development Centers - FFRDC) contracted support to a program office. Under PMA, A&AS personnel support the functions of government personnel in managing a weapon system or common item.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 675100: *Cryptographic Modernization*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
KG-3X	C/FFP	Rockwell Collins:Cedar Rapids, IA	46.974	1.104	Apr 2011	-		-		-	0.000	48.078	51.403
Remote ReKey (CI-33)	C/CPIF	General Dynamics C4 Systems:Needham, MA	37.691	10.408	Nov 2010	-		-		-	0.000	48.099	46.121
Combat Key Generator (KOK-23)	C/CPIF	General Dynamics C4 Systems:Needham, MA	14.498	-		-		-		-	0.000	14.498	14.498
VINSON/ANDVT Cryptographic Modernization	C/CPIF	Raytheon Company:Ft Wayne, IN	0.837	14.525	Aug 2011	21.980	Aug 2012	-		21.980	7.111	44.453	TBD
VISON/ANDVT/Cryptographic Modernization (Embedded)	MIPR	Defense Microelectronic Activity:McClellan, CA	-	8.592	Nov 2010	-		-		-	0.000	8.592	TBD
Space Telemetry, Tracking & Commanding Crypto Mod (TT&C) Ground Operating Equipment (GOE)	C/CPIF	VIASAT:Carlsbad, CA	29.697	0.300	Oct 2010	-		-		-	0.000	29.997	10.995
Space Telemetry, Tracking & Commanding Crypto Mod (TT&C) Aerospace Vehicle Equipment (AVE)	C/CPAF	General Dynamics C4 Systems:Scottsdale, AZ	58.448	8.210	Nov 2010	-		-		-	0.000	66.658	TBD
Space Telemetry, Tracking & Commanding Crypto Mod (TT&C) Space Modular Common Crypto	C/CPAF	Multiple:Multiple,	4.484	4.417	Nov 2010	4.785	Dec 2011	-		4.785	Continuing	Continuing	TBD
Space Mission Data Crypto Mod	C/CPIF	L-3 COMM CORP:CAMDEN, NJ	2.130	14.093	Nov 2010	19.647	Nov 2011	-		19.647	8.266	44.136	TBD
F22A Multi Function Crypto (KOV 50)	MIPR	ASC/YFAA:Wright-Patterson AFB OH, OH	22.898	-		-		-		-	0.000	22.898	TBD
Concept Refinement Requirements (previously named Studies & Analyses)	Various	MULTIPLE:MULTIPLE,	60.787	3.701	Feb 2011	-		-		-	Continuing	Continuing	TBD
Tech Development [Mini-Crypto Efforts, Remote Operational ME [ROME], Type-1 Data At Rest [T1	Various	MULTIPLE:MULTIPLE,	104.320	25.311	Feb 2011	9.179	Feb 2012	-		9.179	Continuing	Continuing	TBD

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 675100: *Cryptographic Modernization*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DAR], High Speed Crypto [HSC]]													
		Subtotal	382.764	90.661		55.591		-		55.591			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
KG-3X	C/CPIF	ROCKWELL COLLINS:CEDAR RAPIDS, IA	2.178	-		-		-		-	0.000	2.178	2.178
Remote ReKey (CI-33)	Various	VARIOUS:VARIOUS,	1.000	1.650	Jan 2011	-		-		-	0.000	2.650	2.650
		Subtotal	3.178	1.650		-		-		-	0.000	4.828	4.828

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
KG-3X	C/CPIF	ROCKWELL COLLINS:CEDAR RAPIDS, IA	2.208	-	Jan 2011	-		-		-	0.000	2.208	2.208
Tech Development [Mini-Crypto Efforts, Remote Operational ME [ROME], Type-1 Data At Rest [T1 DAR], High Speed Crypto [HSC]]	Various	MULTIPLE:MULTIPLE,	0.520	0.297	Jan 2011	0.128	Jan 2012	-		0.128	Continuing	Continuing	TBD
Remote ReKey (CI-33)	C/CPIF	General Dynamics C4 Systems:Needham, MA	2.792	0.986	Jan 2011	-		-		-	0.000	3.778	TBD
Space Telemetry, Tracking & Commanding Crypto Mod (TT&C)	Various	MULTIPLE:MULTIPLE,	5.956	1.236	Mar 2011	1.585	Mar 2012	-		1.585	Continuing	Continuing	TBD

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 675100: *Cryptographic Modernization*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Space Mission Data Crypto Mod	Various	MULTIPLE:MULTIPLE,	2.995	2.421	Feb 2011	2.139	Feb 2012	-		2.139	Continuing	Continuing	TBD
VINSON/ANDVT Crypto Mod-Embedded	MIPR	MULTIPLE:MULTIPLE,	1.241	1.517	Feb 2011	1.120	Jan 2012	-		1.120	Continuing	Continuing	TBD
		Subtotal	15.712	6.457		4.972		-		4.972			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration (PMA)	Various	Various:Various,	162.275	20.019	Jan 2011	16.955	Jan 2012	-		16.955	Continuing	Continuing	TBD
		Subtotal	162.275	20.019		16.955		-		16.955			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	563.929	118.787		77.518		-		77.518			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 675100: *Cryptographic Modernization*

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Cryptographic Modernization Schedule (pg 1 of 2)

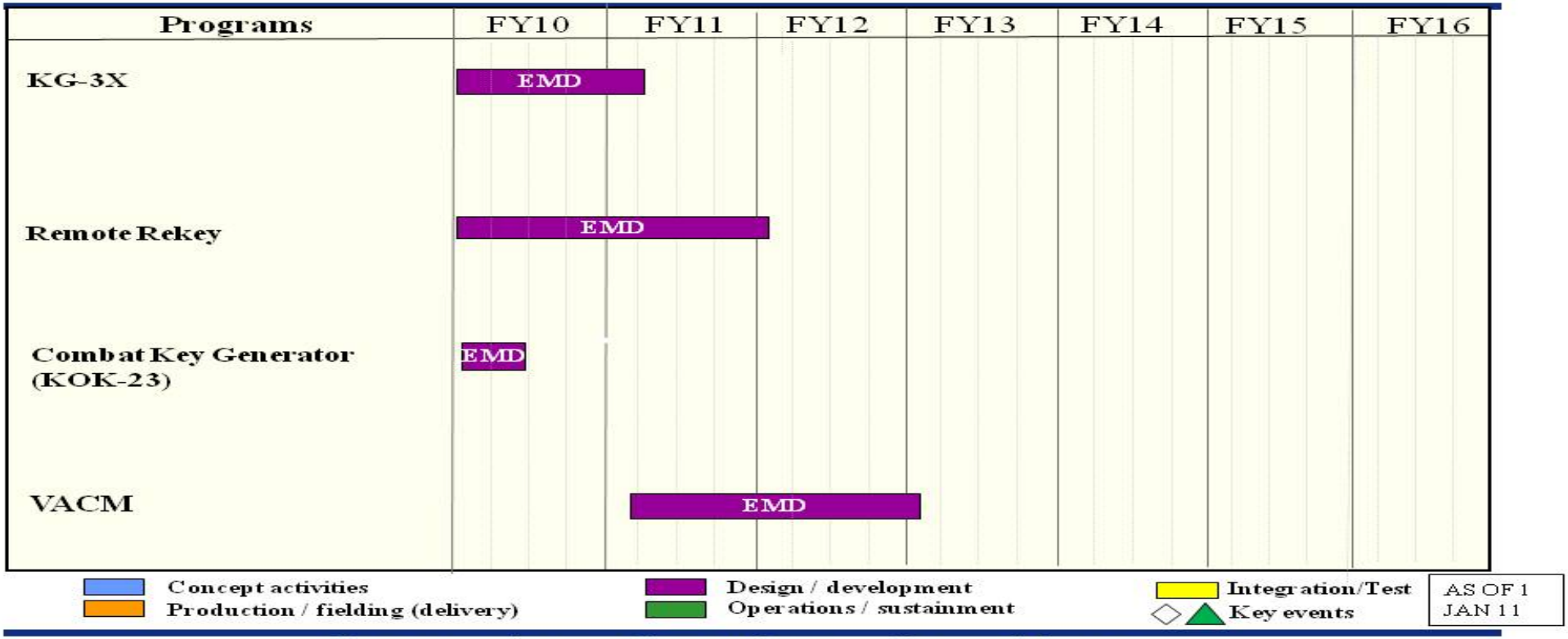

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 675100: *Cryptographic Modernization*

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Cryptographic Modernization Schedule
(pg 2 of 2)

U.S. AIR FORCE

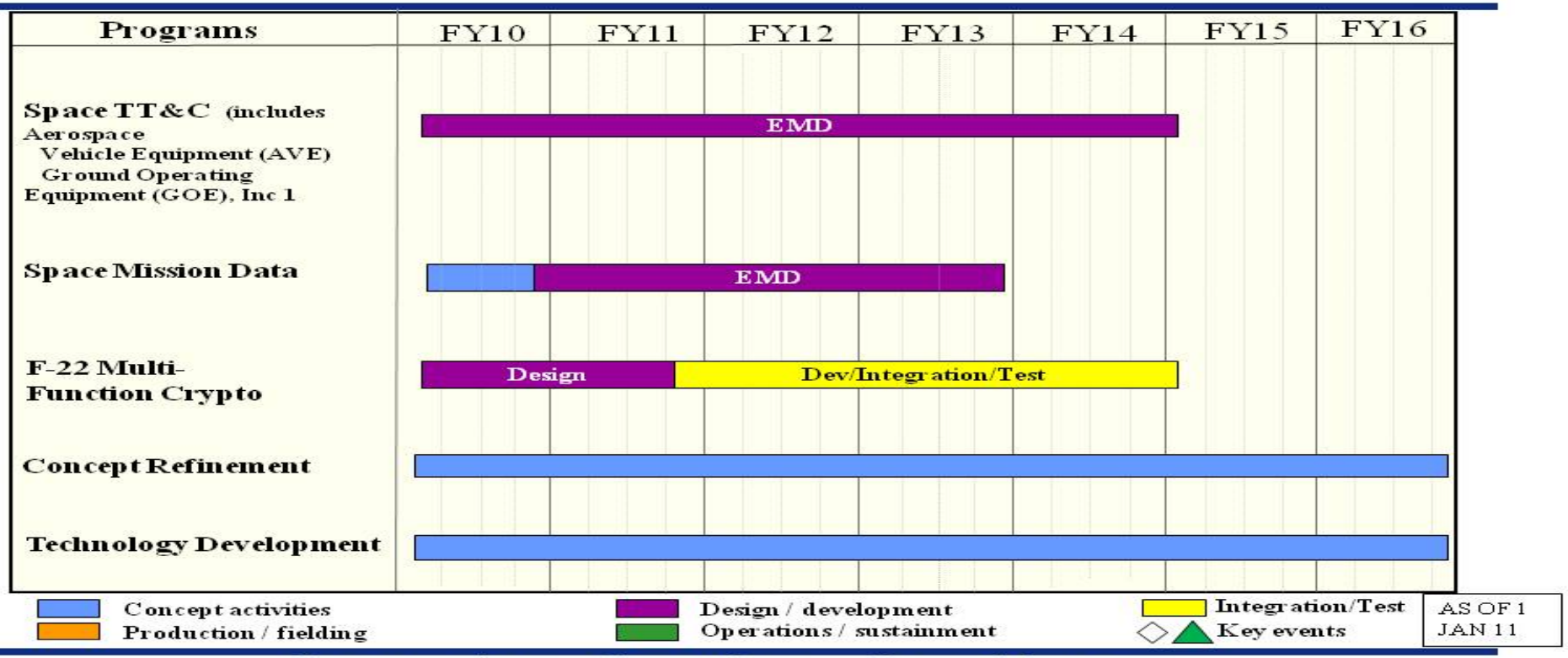

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303140F: *Information Systems Security Program*	**PROJECT** 675100: *Cryptographic Modernization*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
KG-3X CM development, and test efforts (pg1of2)	1	2010	2	2011
Remote Rekey concept refinement and development (pg1of2)	1	2010	1	2012
Combat Key Generator development (pg1of2)	1	2010	2	2010
VINSON-ANDVT Cryptographic Modernization (VACM) concept refinement and development (pg1of2)	1	2011	1	2013
Space Telemetry Tracking and Commanding (Aerospace Vehicle Equipment [AVE] Increment 1, and Ground Operating Equipment [GOE] Increment 1 development (pg2of2)	1	2010	1	2015
Space Mission Data (KG-88) concept activities and development (pg2of2)	1	2010	4	2013
F-22 Multi Function Crypto (CM development of KOV-50) and platform integration (pg2of2)	1	2010	1	2015
Concept Refinement Requirements (includes MLS, Engineering Support, MITRE Support, and DGK) (pg2of2)	1	2010	4	2016
Technology Development Requirements (Includes ROME, High Speed Crypto, and T1 DAR) (pg 2of2)	1	2010	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 675231: *AF Key Management Infrastructure (AF KMI)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675231: *AF Key Management Infrastructure (AF KMI)*	12.127	15.369	16.471	-	16.471	10.697	5.186	7.093	7.134	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Air Force Key Management Infrastructure (AF KMI) Program consists of multiple developments supporting the AF requirements/portion of the DoD Key Management Infrastructure (KMI). (The National Security Agency [NSA] acts as the Executive Agency for the DoD KMI Program.) AF KMI, in concert with this overarching DoD KMI Program, will provide a secure and flexible capability for the electronic generation, distribution, accounting, and management of key material and other communications security (COMSEC) materials for all DoD Command, Control, Communications, Computers, and Intelligence (C4I) and for the Services' weapon systems. KMI represents a broad-scale replacement of the current Electronic Key Management System (EKMS). The new KMI will provide capabilities that will allow networked operation in consonance with the Global Information Grid (GIG) and other DoD, fellow Service, and AF enterprise objectives. It thereby will assure a viable support infrastructure for future weapons and C4I programs to incorporate key management into their system designs.

The DoD KMI will greatly improve protection of national, security-related information by substantially enhancing confidentiality, integrity, and non-repudiation characteristics over the legacy Electronic Key Management System. KMI will greatly accelerate the availability of crypto key materials through electronic transmission versus shipping of materials, will enhance mission responsiveness and flexibility, and will eventually take the man "out-of-the-loop" in the distribution of crypto key materials.

The AF Key Management Infrastructure (KMI) Program is building the AF KMI "Last Mile" architecture. This R&D effort includes defining all of the AF KMI "Last Mile" architecture, building the linkage interfaces that will allow KMI systems to communicate, and other related developments to meet operational needs. AF KMI is addressing requirements in increments. Increment 1 is in the concept development phase conducting development, studies and analysis efforts that includes: Single Point Fill Capability Development, Black Data Distribution System development, and the Legacy ECU Adaptor effort. Increment 1 also includes the studies, analysis, concept development and prototyping efforts of the Next Generation Fill Device which is renamed as the AF KMI Last Mile Load Device (LMLD) and will be developed in conjunction with the KOV-21 Follow-on Crypto Engine as a complete/combined unit to replace the current Simple Key Loader and its KOV-21 Crypto Engine. In addition, the AF KMI program is working with NSA to explore new key delivery methods for KMI: "Mobile" Clients that can be brought out to platforms and remote ECUs; a new COMSEC material device that works with KMI and incorporates netcentricity; and a method called "over-the-air-keying (OTAK)" to ultimately replace the current data transfer devices. Activities also include an integration laboratory and studies and analysis to support both current program planning and execution and future program planning.

In parallel with AFKMI, DoD and the Services are developing a new generation of End Crypto Units (ECUs) under the Joint Crypto Modernization Initiative that will be capable of direct interaction with the KMI. (PE0303140F, BPAC 675100, Cryptographic Modernization, supports this initiative). In some cases these new ECUs, although needing to be supported by KMI, will not be KMI network-connected. "Last mile" transport of black (aka benign, or encrypted) and red (unencrypted) keying material from a KMI client to a new generation ECU or current legacy ECU will need to be handled in the early years by one of two data transfer devices.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303140F: *Information Systems Security Program*	**PROJECT** 675231: *AF Key Management Infrastructure (AF KMI)*

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Systems Engineering ***Description:*** Architectural planning, systems engineering, and studies and analyses for Migration to Key Management Infrastructure (includes acquisition planning, systems integration, engineering support and SPO support). ***FY 2010 Accomplishments:*** Continued architectural planning, systems engineering, and studies and analyses for migration to the Key Management Infrastructure. Developed the Air Force critical path to transition from EKMS to KMI CI-2. Developed the Joint KMI Concept of Operation and the DoD KMI Master Transition Plan. ***FY 2011 Plans:*** Continues architectural planning, systems engineering, and studies and analyses for migration to Key Management Infrastructure. Conduct AF-centric operational testing of KMI CI-2 components such as the Management Client (MGC) in addition to supporting NSA's operational testing plans. ***FY 2012 Base Plans:*** Will continue architectural planning, systems engineering, and studies and analyses for migration to Key Management Infrastructure. ***FY 2012 OCO Plans:***	3.724	3.807	4.135	-	4.135
Title: Air Force KMI "Last Mile" Increment I ***Description:*** Air Force KMI Last Mile concept development; distribution and management elements of last mile; studies and analyses for technology possibilities for the load element of last mile; integrating Black Key Server technology. ***FY 2010 Accomplishments:*** Deployed a Key Management Distribution Pilot system capable of delivering cryptographic key material to geographically separated warfighters. AF KMI team awarded the 2010 DoD Cyber, Identity, and Information Assurnace Team Award for outstanding contributions advancing the DoD Information Assurance Strategy. ***FY 2011 Plans:***	8.403	11.562	12.336	-	12.336

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 675231: *AF Key Management Infrastructure (AF KMI)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Complete the piloting and fielding of a Key Management Distribution system with the baseline capability. Support "Last Mile" specific efforts as required for transitional activities required to support KMI. ***FY 2012 Base Plans:*** Continue fielding and development of a Key Management Distribution Systems future capabilities. Support "Last Mile" specific efforts as required for transitional activities required to support KMI. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	12.127	15.369	16.471	-	16.471

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0303140F: *Information Systems Security Program, OPAF*	0.000	1.689	7.537	0.000	7.537	10.091	11.655	18.015	13.991	Continuing	Continuing

D. Acquisition Strategy

All major contracts within this Project are open to full and open competition with technology knowledge, expertise, and prior experience on similar projects weighted heavily in the evaluation process.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 675231: *AF Key Management Infrastructure (AF KMI)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Architectural Planning and Migration to KMI Infrastructure	SS/TBD	MITRE:San Antonio, TX	2.832	-		-		-		-	Continuing	Continuing	TBD
Studies & Analyses & Systems Engineering	SS/TBD	MITRE:San Antonio, TX	2.474	1.130	Jan 2011	1.797	Jan 2012	-		1.797	Continuing	Continuing	TBD
Operational Capability Engineering Direct Mission Support	C/TBD	Jacobs Engineering:San Antonio, TX	0.359	0.401	Jan 2011	0.412	Jan 2012	-		0.412	Continuing	Continuing	TBD
KMI Last Mile Development Increment 1	TBD	TBD:TBD,	15.933	11.128	Jan 2011	11.253	Jan 2012	-		11.253	Continuing	Continuing	TBD
		Subtotal	21.598	12.659		13.462		-		13.462			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Architectural Planning & Migration to the KMI Infrastructure	SS/TBD	MITRE:San Antonio, TX	-	0.503	Jan 2011	0.770	Jan 2012	-		0.770	Continuing	Continuing	TBD
Engineering & Technical Acquisition Support Service	C/TBD	Jacobs Engineering:San Antonio, TX	0.742	0.163	Jan 2011	0.168	Jan 2012	-		0.168	Continuing	Continuing	TBD
		Subtotal	0.742	0.666		0.938		-		0.938			

Remarks

Test and Evaluation ($ in Millions)

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Administrator	C/TBD	General Dynamics:San Antonio, TX	0.388	0.153	Jan 2011	0.157	Jan 2012	-		0.157	Continuing	Continuing	TBD

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 675231: *AF Key Management Infrastructure (AF KMI)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
KMI Transition Support	TBD	TBD:TBD,	-	0.281	Feb 2011	0.289	Feb 2012	-		0.289	Continuing	Continuing	TBD
		Subtotal	0.388	0.434		0.446		-		0.446			

Remarks

Management Services ($ in Millions)

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Professional Acquisition Support Services	C/TBD	P.E. Systems:San Antonio, TX	3.208	1.610	Jan 2011	1.625	Jan 2012	-		1.625	Continuing	Continuing	TBD
		Subtotal	3.208	1.610		1.625		-		1.625			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	25.936	15.369		16.471		-		16.471			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 675231: *AF Key Management Infrastructure (AF KMI)*

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AF KMI Last Mile Schedule

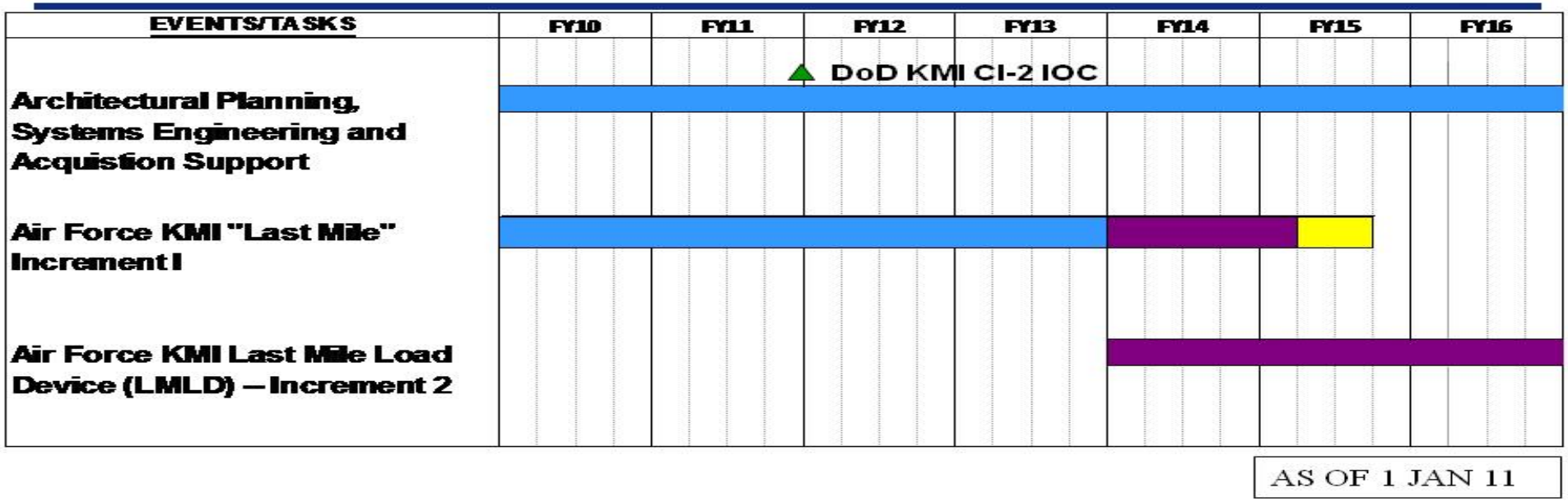

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303140F: *Information Systems Security Program*	**PROJECT** 675231: *AF Key Management Infrastructure (AF KMI)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Architectural Planning, System Engineering and Acquisition Support	1	2010	4	2016
DoD KMI Cabability Increment 2 IOC	4	2011	1	2012
KMI "Last Mile" Increment 1	1	2010	3	2015
AF KMI Increment 2 - Last Mile Load Device (LMLD)	1	2014	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 677820: *Computer Security RDT&E: Firestarter*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
677820: *Computer Security RDT&E: Firestarter*	13.919	3.321	6.022	-	6.022	6.280	6.438	6.504	6.772	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Firestarter program provides technical transition opportunities for research in the area of Information Assurance (IA) technologies and tools needed to defend Air Force Command, Control, Communications, Computer, and Intelligence (C4I) systems from computer network attacks, and ensure recovery in the event of an attack. The emphasis of the program is directed toward computer and network systems security; damage assessment and recovery; cyber threat recognition, attribution, and mitigation; and active response methodologies in response to evolving threats and changes to cyber environment. These areas of emphasis are realized through research and development in the areas of: cyberspace surveillance; cyber indications and warning (CI&W); high-speed and host-based network intrusion detection; fusion and correlation of cyber intelligence; decision support; recovery; digital forensics; active response, etc. Current Air Force systems, such as the Combat Information Transport System/Base Information Protection (CITS/BIP) leverage this technology to meet their information assurance needs/requirements. Additionally, this program utilizes IA and cyber technology investments by the Defense Advanced Research Projects Agency (DARPA), the National Security Agency (NSA), Director of National Intelligence (DNI), Intelligence Advanced Research Projects Activity (IARPA), and the Department of Homeland Security (DHS) to jump-start its development of solutions to existing Air Force IA and cyber requirements. This program coordinates and cooperates with the JTF-GNO, STRATCOM, DISA, NSA and other services to ensure Global Information Grid (GIG) IA requirements are being met. Activities performed include those designed to identify, analyze, test, rapidly acquire, and integrate emerging IA and cyber technology into all regions of the GIG - terrestrial, airborne, and space systems. Activities also include studies and analysis to support both current program planning and execution and future program planning. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Cyber Forensic Tools	1.199	1.020	1.946	-	1.946
Description: Cyber forensic tools & methodologies. Includes: Initial metrics for reliable info assurance; secure coalition IA data management, collaboration and visualization; analysis of cyber security bots.					
FY 2010 Accomplishments: Continued investigation and analysis of Cyber Security Bots.					
FY 2011 Plans: Extend the development of an Integrated Airborne Network Security IO Platform.					
FY 2012 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 677820: *Computer Security RDT&E: Firestarter*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Will develop methods and technologies to enhance “real time” cyber network forensic analysis. ***FY 2012 OCO Plans:***					
Title: Cyber Threat Recognition ***Description:*** Cyber Threat Recognition. Includes: extended effort for info assurance metrics; integrated airborne network security IO platform ***FY 2010 Accomplishments:*** Extended effort to develop metrics for reliable information assurance (IA) measurement and testing. ***FY 2011 Plans:*** Extend the development of an Integrated Airborne Network Security IO Platform. ***FY 2012 Base Plans:*** Will enhance IO Platform technology to identify “zero-day” threats in real time. ***FY 2012 OCO Plans:***	1.050	0.803	1.452	-	1.452
Title: Cyber Threat Attribution ***Description:*** Cyber Threat Attribution and Mitigation. Includes: risk mitigation techniques for wireless networks and systems; active response, dynamic policy enforcement and computer/net attack attribution efforts. ***FY 2010 Accomplishments:*** Continued efforts to provide dynamic, cost effective, risk mitigation information assurance techniques for wireless networks and systems. ***FY 2011 Plans:*** Continue effort to provide active response, dynamic policy enforcement and computer/network attack attribution. ***FY 2012 Base Plans:*** Will enhance and transition data mining and analysis technologies to attribute “low and slow” computer network attacks, occurring over time, to specific adversaries. ***FY 2012 OCO Plans:***	1.363	0.900	1.645	-	1.645
Title: Transition IA Technology	7.776	0.598	0.979	-	0.979

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 677820: *Computer Security RDT&E: Firestarter*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Transition DARPA/DTO/IARPA/DHS information assurance (IA) technology into AF Information Protection, Detection, & Response architecture. Includes: space systems IA solutions; terrestrial net defense technology development; airborne IP network IA tools; IA/cyber modeling & sim; secure interoperable distributed agent computing. ***FY 2010 Accomplishments:*** Identified and enhanced solutions for information assurance in space systems. Continue IA/Cyber modeling. Extend the development of technology demonstrations and prototypes for information assurance of airborne IP networking. ***FY 2011 Plans:*** Extend development and implementation of a terrestrial network defense overarching strategy realized through various US Government IA research programs. ***FY 2012 Base Plans:*** Will continue enhancing and transitioning customer funded IA technology to operational USAF components in accordance with rapid requirements documentation provided by AFSPC. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	11.388	3.321	6.022	-	6.022

	FY 2010	FY 2011
Congressional Add: Remote Suspect Identification	2.531	-
FY 2010 Accomplishments: Upgraded and field tested the Digital Biometric Security (DiBiS) system. Successfully demonstrated the ability to link a computer system to a specific user based on unique biometric patterns identified within keystroke logs. ***FY 2011 Plans:***		
Congressional Adds Subtotals	2.531	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 677820: *Computer Security RDT&E: Firestarter*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

All major contracts within this project are awarded after full and open competition utilizing evolutionary capability and incremental development.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 677820: *Computer Security RDT&E: Firestarter*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FFRDC (MITRE)	C/CPFF	Various:Various,	6.703	0.600	Jan 2011	2.200	Jan 2012	-		2.200	Continuing	Continuing	TBD
Multiple Contractors	C/CPFF	Various:Various,	5.244	1.821	Jan 2011	1.696	Jan 2012	-		1.696	Continuing	Continuing	TBD
Multiple Universities	C/CPFF	Various:Various,	1.972	0.900	Jan 2011	2.126	Jan 2012	-		2.126	Continuing	Continuing	TBD
		Subtotal	13.919	3.321		6.022		-		6.022			

Remarks

Multiple contractors & multiple universities reflect on-going efforts with over a dozen contractors & universities. Each has a different contract date depending on when that particular contract was awarded.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	13.919	3.321		6.022		-		6.022			

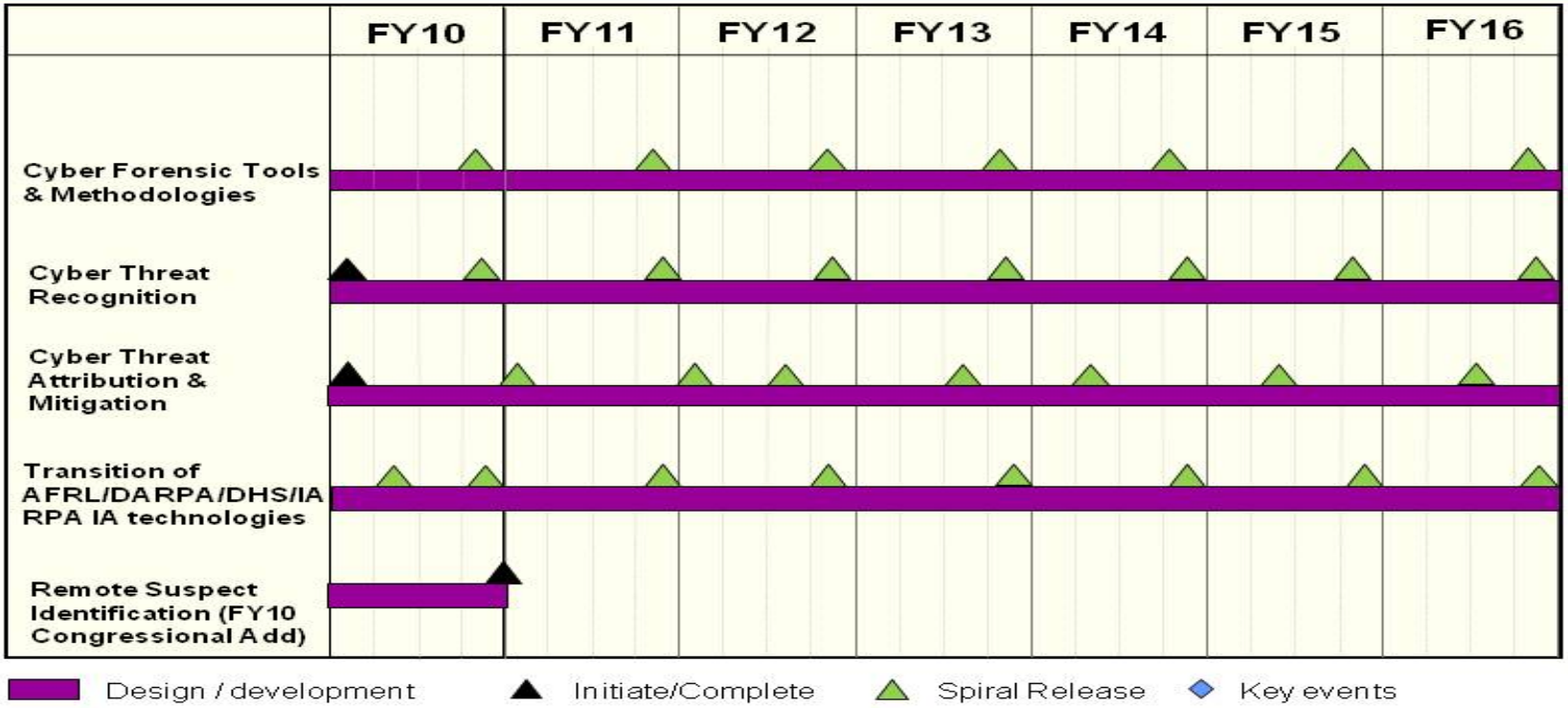
Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 677820: *Computer Security RDT&E: Firestarter*	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303140F: *Information Systems Security Program*	PROJECT 677820: *Computer Security RDT&E: Firestarter*

PE 0303140F Project 677820: Firestarter Program Schedule



PBR12 R-Docs

Depicted by installation/production flow

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303140F: *Information Systems Security Program*	**PROJECT** 677820: *Computer Security RDT&E: Firestarter*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Continue Cyber forensic tools and methodologies	1	2010	4	2016
Continue Cyber Threat Recognition	1	2010	4	2016
Continue Cyber Threat Attribution and Mitigation	1	2010	4	2016
Continue Transition of DARPA/DTO/IARPA/DHS information assurance (IA) technology into AF Information Protection, Detection, & Response architecture	1	2010	4	2016
Initiated/Completed Remote Suspect Identification (FY10 Congressional Add)	1	2010	4	2010

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0303141F: *Global Combat Support System (GCSS)*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	3.208	3.393	0.449	-	0.449	0.448	0.796	0.597	0.199	Continuing	Continuing
675046: *Systems Engineering & Integration*	3.208	3.393	0.449	-	0.449	0.448	0.796	0.597	0.199	Continuing	Continuing

A. Mission Description and Budget Item Justification

Global Combat Support System-Air Force (GCSS-AF) will provide the warfighter and supporting elements with timely, accurate, and trusted Agile Combat Support (ACS) information. This information will have the appropriate level of security needed for the Air Expeditionary Forces (AEF) to execute the Air Force mission throughout the full spectrum of military operations. The GCSS-AF program modernizes, consolidates, develops, and integrates Air Force and Department of Defense combat support information systems. The modernized system is being developed in compliance with and hosted on the Network Centric Enterprise Systems, replacing the Defense Information Infrastructure (DII) Common Operating Environment (COE). The modernized system is implemented and sustained worldwide and supports both wartime and peacetime requirements using hardware, software, and communications capabilities available from standard open systems government contracts and communications infrastructure programs. In this manner, GCSS-AF avoids added costs, removes business processing inefficiencies, reduces deployment footprint, and improves the speed with which information flows. Continued test and evaluation is critical to avoid technical obsolescence of this critical infrastructure and includes studies and analysis to support both current program planning and execution and future program planning. This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	3.375	3.393	-	-	-
Current President's Budget	3.208	3.393	0.449	-	0.449
Total Adjustments	-0.167	-	0.449	-	0.449
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-0.070	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.097	-			
• Other Adjustments	-	-	0.449	-	0.449

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303141F: *Global Combat Support System (GCSS)*

Change Summary Explanation

Base FY12 Estimate includes $.449M to modify GCSS-AF to consume authoritative force structure from Global Force Management - Data Initiative Organization Servers (GFM-DI Org Servers), linking the identifiers to or replacing current identifiers and, as applicable, exposing the data in a net-centric fashion. This effort will drive associated tests and evaluations as well as potential engineering of COTS-based solutions.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303141F: *Global Combat Support System (GCSS)*	PROJECT 675046: *Systems Engineering & Integration*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675046: *Systems Engineering & Integration*	3.208	3.393	0.449	-	0.449	0.448	0.796	0.597	0.199	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Global Combat Support System-Air Force (GCSS-AF) will provide the warfighter and supporting elements with timely, accurate, and trusted Agile Combat Support (ACS) information. This information will have the appropriate level of security needed for the Air and Space Expeditionary Forces (AEF) to execute the Air Force mission throughout the full spectrum of military operations.

The GCSS-AF program modernizes, consolidates, develops, and integrates Air Force and Department of Defense combat support information systems. The modernized systems are being developed in compliance with and hosted on the Network Centric Enterprise Systems, replacing the Defense Information Infrastructure (DII) Common Operating Environment (COE). The modernized systems is implemented and sustained worldwide and supports both wartime and peacetime requirements using hardware, software, and communications capabilities available from standard open systems government contracts and communications infrastructure programs. In this manner, GCSS-AF avoids added costs, removes business processing inefficiencies, reduces deployment footprint, and improves the speed with which information flows. Continued modifications, tests, and evaluations are critical to avoid technical obsolescence of this crucial infrastructure and includes studies and analysis to support both current program planning and execution and future program planning.

A. Mission Description and Budget Item Justification

Global Combat Support System-Air Force (GCSS-AF) will provide the warfighter and supporting elements with timely, accurate, and trusted Agile Combat Support (ACS) information. This information will have the appropriate level of security needed for the Air Expeditionary Forces (AEF) to execute the Air Force mission throughout the full spectrum of military operations. The GCSS-AF program modernizes, consolidates, develops, and integrates Air Force and Department of Defense combat support information systems. The modernized system is being developed in compliance with and hosted on the Network Centric Enterprise Systems, replacing the Defense Information Infrastructure (DII) Common Operating Environment (COE). The modernized system is implemented and sustained worldwide and supports both wartime and peacetime requirements using hardware, software, and communications capabilities available from standard open systems government contracts and communications infrastructure programs. In this manner, GCSS-AF avoids added costs, removes business processing inefficiencies, reduces deployment footprint, and improves the speed with which information flows. Continued test and evaluation is critical to avoid technical obsolescence of this critical infrastructure and includes studies and analysis to support both current program planning and execution and future program planning. This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Test & Evaluation	3.208	3.393	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303141F: *Global Combat Support System (GCSS)*	PROJECT 675046: *Systems Engineering & Integration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Integration Framework (IF) Development, Engineering Support, Test and Evaluation, Program Management, and Operations directly related to Test and Evaluation efforts. ***FY 2010 Accomplishments:*** Continued test and evaluation of COTS (Commercial Off The Shelf) products as vendors change their supported baseline and drive changes to the currently sustained increment of GCSS-AF. ***FY 2011 Plans:*** Extends test and evaluation efforts to exploit Continuity of Operations (COOP) capability and better balance GCSS-AF loads. Continues test and evaluation of COTS (Commercial Off The Shelf) products as vendors change their supported baseline and drive changes to the currently sustained increment of GCSS-AF. ***FY 2012 Base Plans:*** ***FY 2012 OCO Plans:***					
Title: Consume Authoritative Force Structure ***Description:*** Progressive modification of GCSS-AF (and its supported systems) to consume authoritative force structure from GFM DI Org Servers, linking the identifiers to or replacing current identifiers and, as applicable, exposing the data in a net-centric fashion. This effort may include associated testing and evaluation as well as potential engineering of COTS-based solutions. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** ***FY 2012 Base Plans:*** Continues the progressive modification of GCSS-AF (and its supported systems) to consume authoritative force structure from GFM DI Org Servers, linking the identifiers to or replacing current identifiers and, as applicable, exposing the data in a net-centric fashion. This effort may include associated testing and evaluation as well as potential engineering of COTS-based solutions. ***FY 2012 OCO Plans:***	-	-	0.449	-	0.449
Accomplishments/Planned Programs Subtotals	3.208	3.393	0.449	-	0.449

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303141F: *Global Combat Support System (GCSS)*	PROJECT 675046: *Systems Engineering & Integration*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0303141F: *Global Combat Support System, O&M*	85.558	127.004	95.140	0.000	95.140	69.676	73.083	75.548	76.355	Continuing	Continuing
• PE 0303141F (1): *Global Combat Support System, OPAF*	11.105	17.110	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

GCSS-AF development uses a an Indefinite Delivery/Indefinite Quantity (ID/IQ) contract with Firm-Fixed-Price (FFP), Cost Reimbursable (CR), Cost-Plus-Fixed-Fee (CPFF), Cost-Plus-Award-Fee (CPAF), and Labor-Hour (LH) Contract Line Item Numbers (CLINs), awarded after full and open competition in 1996. While the Air Force seeks a new, multiple-year contract to sustain the fielded capability and continue required test and evaluation efforts for GCSS-AF capabilities, with an anticipated award in April 2011 after a full and open competition of potential vendors, the program uses a bridge vehicle, that is an ID/IQ contract with FFP, CPFF, and CR CLINs, issued December 09, 2009, with Lockheed Martin Corporation of Endicott, NY.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303141F: *Global Combat Support System (GCSS)*	PROJECT 675046: *Systems Engineering & Integration*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Framework Development (Prime Contractor)	C/Various	Lockheed Martin IT:Endicott, NY	60.308	2.307	Oct 2010	-		-		-	Continuing	Continuing	TBD
Modify GCSS-AF to better support GFM-DI Org Servers	C/TBD	TBD:TBD,	-	-		0.449	Oct 2011	-		0.449	0.000	0.449	0.000
		Subtotal	60.308	2.307		0.449		-		0.449			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Enginneering Support	C/Various	Mitre Corporation:Boston, MA	5.638	0.723	Nov 2010	-		-		-	Continuing	Continuing	TBD
		Subtotal	5.638	0.723		-		-		-			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	VARIOUS:VARIOUS	-	0.190	Oct 2010	-		-		-	Continuing	Continuing	TBD
		Subtotal	-	0.190		-		-		-			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management and Operations	Various	VARIOUS:VARIOUS	0.419	0.173	Oct 2010	-		-		-	Continuing	Continuing	TBD
		Subtotal	0.419	0.173		-		-		-			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303141F: *Global Combat Support System (GCSS)*	PROJECT 675046: *Systems Engineering & Integration*	

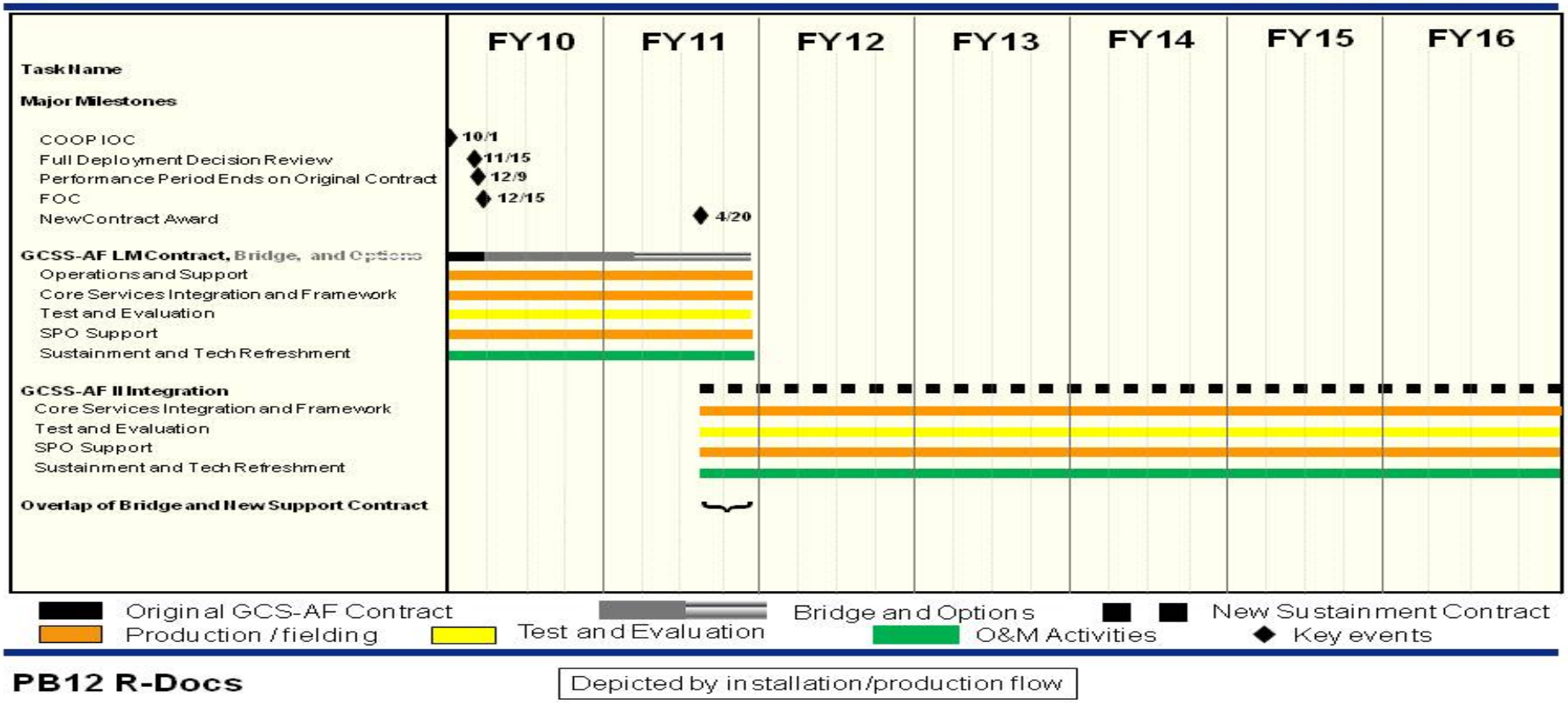
	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	66.365	3.393		0.449		-		0.449			

Remarks

A contract for the continued operations of GCSS-AF is in full and open competition with an anticipated award in April 2011.

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303141F: *Global Combat Support System (GCSS)*	PROJECT 675046: *Systems Engineering & Integration*

Global Combat Support System – Air Force



PB12 R-Docs

Depicted by installation/production flow

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303141F: *Global Combat Support System (GCSS)*	**PROJECT** 675046: *Systems Engineering & Integration*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Major Milestones	1	2010	3	2011
COOP IOC	1	2010	1	2010
Full Deployment Decision Review (FDDR)	1	2010	1	2010
Full Operational Capability (FOC)	1	2010	1	2010
Performance Period Ends on Original Contract	1	2010	1	2010
New Contract Award	3	2011	3	2011
Original GCSS-AF/Lockheed Martin Contract, Bridge, and Option(s)	1	2010	4	2011
Operations and Support	1	2010	4	2011
Core Services Integration and Framework I	1	2010	4	2011
Test and Evaluation I	1	2010	4	2011
SPO Support I	1	2010	2	2011
Sustainment and Tech Refreshment I	1	2010	2	2011
GCSS-AF II Integration	3	2011	4	2016
Core Services Integration and Framework II	3	2011	4	2016
Test and Evaluation II	3	2011	4	2016
SPO Support II	3	2011	4	2016
Sustainment and Tech Refreshment II	3	2011	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0303150F: *WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	2.974	3.055	3.854	-	3.854	4.308	3.813	3.561	3.283	Continuing	Continuing
674667: *Global Command and Control System - AF*	2.974	3.055	3.854	-	3.854	4.308	3.813	3.561	3.283	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Global Command and Control System (GCCS) is the Joint Command and Control (C2) System of Record and the designated C2 migration system for the DOD. It is an integrated Command, Control, Communications, Computer, and Intelligence (C4I) system capable of supporting all echelons of the US military command structure. GCCS solves C4I interoperability problems between Service components by establishing a Common Core Operating Environment supporting net-centric objectives. The GCCS-Air Force program provides C2, intelligence, surveillance, reconnaissance (ISR), Cyber, and operational information for the Joint Force Air Component Commander (JFACC) and the Air and Space Operations Center-Weapon System (AOC-WS) for planning and execution, air space deconfliction, targeting, weaponeering and many other applications supporting air operational command and control, and fully supports the Aerospace Expeditionary Force (AEF) concept. The Air Force is responsible for integration of Air Force unique applications with the Common Core Operating Environment. Integration efforts are directed towards future aerospace C2 concepts supporting requirements for the AOC, including ISR, and intended to automate operational systems with an objective of providing the right people with the right information at the right time while reducing the overall footprint of the system. As they migrate to the GCCS Joint (GCCS-J) core environment, GCCS-AF will integrate applications into the WINx environment satisfying warfighter requirements for the Common Operational Picture (COP), Joint Warning and Reporting Network (JWARN), Joint Targeting Toolbox (JTT), Logistics Feasibility Analysis Capability (LOGFAC), Deliberate Crisis Action Planning and Execution Segment (DCAPES) capabilities and other information assurance mechanisms. Activities also include studies and analysis to support both current program planning and execution and future program planning. The GCCS-AF program is actively supporting planning for transition of functionality to DOD's emerging next generation joint C2 enabler. The GCCS-AF funding will be used to implement evolving Joint and Air Force GCCS functional capability as well as facilitate transition, development and delivery of functionality to DOD's next generation joint C2 enabler. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303150F: *WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	6.349	3.055	3.100	-	3.100
Current President's Budget	2.974	3.055	3.854	-	3.854
Total Adjustments	-3.375	-	0.754	-	0.754
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-0.083	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-3.200	-			
• SBIR/STTR Transfer	-0.092	-			
• Other Adjustments	-	-	0.754	-	0.754

Change Summary Explanation

In FY 2010, $3.2M of 4667 Global Command and Control System - Air Force effort was transferred to PE 0604740F, Integrated Command and Control Applications (IC2A), 2524 Reuse and Component Support in accordance with Congressional intent.

Base FY 20112 has additional funding to modify GCCS to consume authoritative force structure from Global Force Management - Data Initiative Organization Servers (GFM-DI Org Servers), linking the identifiers to or replacing current identifiers and, as applicable, exposing the data in a net-centric fashion.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303150F: *WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM*	PROJECT 674667: *Global Command and Control System - AF*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674667: *Global Command and Control System - AF*	2.974	3.055	3.854	-	3.854	4.308	3.813	3.561	3.283	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Global Command and Control System (GCCS) is the Joint Command and Control (C2) System of Record and the designated C2 migration system for the DOD. It is an integrated Command, Control, Communications, Computer, and Intelligence (C4I) system capable of supporting all echelons of the US military command structure. GCCS solves C4I interoperability problems between Service components by establishing a Common Core Operating Environment supporting net-centric objectives. The GCCS-Air Force program provides C2, intelligence, surveillance, reconnaissance (ISR), Cyber, and operational information for the Joint Force Air Component Commander (JFACC) and the Air and Space Operations Center-Weapon System (AOC-WS) for planning and execution, air space deconfliction, targeting, weaponeering and many other applications supporting air operational command and control, and fully supports the Aerospace Expeditionary Force (AEF) concept. The Air Force is responsible for integration of Air Force unique applications with the Common Core Operating Environment. Integration efforts are directed towards future aerospace C2 concepts supporting requirements for the AOC, including ISR, and intended to automate operational systems with an objective of providing the right people with the right information at the right time while reducing the overall footprint of the system. As they migrate to the GCCS Joint (GCCS-J) core environment, GCCS-AF will integrate applications into the WINx environment satisfying warfighter requirements for the Common Operational Picture (COP), Joint Warning and Reporting Network (JWARN), Joint Targeting Toolbox (JTT), Logistics Feasibility Analysis Capability (LOGFAC), Deliberate Crisis Action Planning and Execution Segment (DCAPES) capabilities and other information assurance mechanisms. Activities also include studies and analysis to support both current program planning and execution and future program planning. The GCCS-AF program is actively supporting planning for transition of functionality to DOD's emerging next generation joint C2 enabler. The GCCS-AF funding will be used to implement evolving Joint and Air Force GCCS functional capability as well as facilitate transition, development and delivery of functionality to DOD's next generation joint C2 enabler. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Synchronization, Integration, Test, and Planning	2.974	3.055	3.618	-	3.618
Description: This effort consists of: synchronization, integration and testing of current/upgraded capabilities; operational baseline problem analysis and technical solution implementation; and systems engineering for infrastructure migration to the next generation joint C2 architecture.					
FY 2010 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303150F: *WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM*	PROJECT 674667: *Global Command and Control System - AF*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continued integration and test of Air Force capabilities into GCCS baseline configurations. Conducted GCCS-AF 4.1.x operational baseline problem analysis and technical solution implementation. Conducted C2 interoperability and performance studies in support of further consolidation of GCCS Global Release (GR) and Strategic Server Enclave (SSE) configurations to ensure synchronization and interoperability between AF and joint GCCS components. Assessed and mitigated risks associated with transforming enterprise infrastructure components necessary for structured migration of GCCS baseline to the DOD's emerging joint C2 architecture. ***FY 2011 Plans:*** Continued integration and test of Air Force capabilities into GCCS baseline configurations. Conducted GCCS-AF 4.2.x operational baseline problem analysis and technical solution implementation. Conducted C2 interoperability and performance studies in support of further consolidation of GCCS Global Release (GR) and Strategic Server Enclave (SSE) configurations to ensure synchronization and interoperability between AF and joint GCCS components. Continued systems engineering support to migration objectives. Conducted studies and analysis to develop stronger configuration control and security protection strategies. Strengthened configuration management, performance engineering and security protection strategies to facilitate migration to the DOD's emerging joint C2 architecture. ***FY 2012 Base Plans:*** Continue systems engineering support to GCCS synchronization and migration objectives. Conduct GCCS-AF 4.x/JC2 operational baseline problem analysis and technical solution implementation. Conduct studies and analysis to develop stronger configuration control and security protection strategies. Strengthen configuration management, performance engineering and security protection strategies to facilitate migration to the DOD's emerging joint C2 architecture. ***FY 2012 OCO Plans:***					
Title: GCCS support of Global Force Management ***Description:*** This effort is to modify GCCS to consume authoritative force structure from GFM DI Org Servers, linking the identifiers to or replacing current identifiers and, as applicable, exposing the data in a net-centric fashion. ***FY 2010 Accomplishments:*** ***FY 2011 Plans:***	-	-	0.236	-	0.236

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303150F: *WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM*	PROJECT 674667: *Global Command and Control System - AF*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2012 Base Plans: This effort is to modify GCCS to consume authoritative force structure from GFM DI Org Servers, linking the identifiers to or replacing current identifiers and, as applicable, exposing the data in a net-centric fashion. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	2.974	3.055	3.854	-	3.854

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0303150F: *Air Force Global Command and Control System, OPAF*	9.881	9.210	13.310	0.000	13.310	15.219	12.879	11.479	13.160	Continuing	Continuing

D. Acquisition Strategy

GCCS-AF is developed and fielded using a spiral acquisition approach, synchronized with Common Operating Environment (COE) and compliant with the GCCS-Joint (GCCS-J) baseline. All deployment of GCCS-AF capabilities are synchronized with the GCCS-J program fielding schedule, which is led by DISA. The GCCS-AF program is actively supporting DOD planning for transition of functionality to DOD's emerging next generation joint C2 enabler.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303150F: *WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM*	PROJECT 674667: *Global Command and Control System - AF*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
WINxB 4.1. n	SS/FFP	Northrop Gruman ITS:Herndon, VA	2.000	-		-		-		-	Continuing	Continuing	0.000
WINxB 4.2. n	C/CPAF	TBD:TBD,	-	1.863	Nov 2010	3.000	Nov 2011	-		3.000	Continuing	Continuing	0.000
		Subtotal	2.000	1.863		3.000		-		3.000			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering Support	C/CPAF	Mitre / ESC:Hanscom AFB, MA	0.610	0.660	Nov 2010	0.636	Nov 2011	-		0.636	Continuing	Continuing	0.000
Miscellaneous	Various	Various:Various,	0.134	0.200		0.118		-		0.118	Continuing	Continuing	0.000
		Subtotal	0.744	0.860		0.754		-		0.754			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Accreditation	MIPR	Various:Various,	0.230	0.332	Nov 2010	0.100	Nov 2011	-		0.100	Continuing	Continuing	0.000
		Subtotal	0.230	0.332		0.100		-		0.100			0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.974	3.055		3.854		-		3.854			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303150F: *WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM*	PROJECT 674667: *Global Command and Control System - AF*	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303150F: *WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM*	PROJECT 674667: *Global Command and Control System - AF*

GCCS-AF (I) Integrated Program Schedule

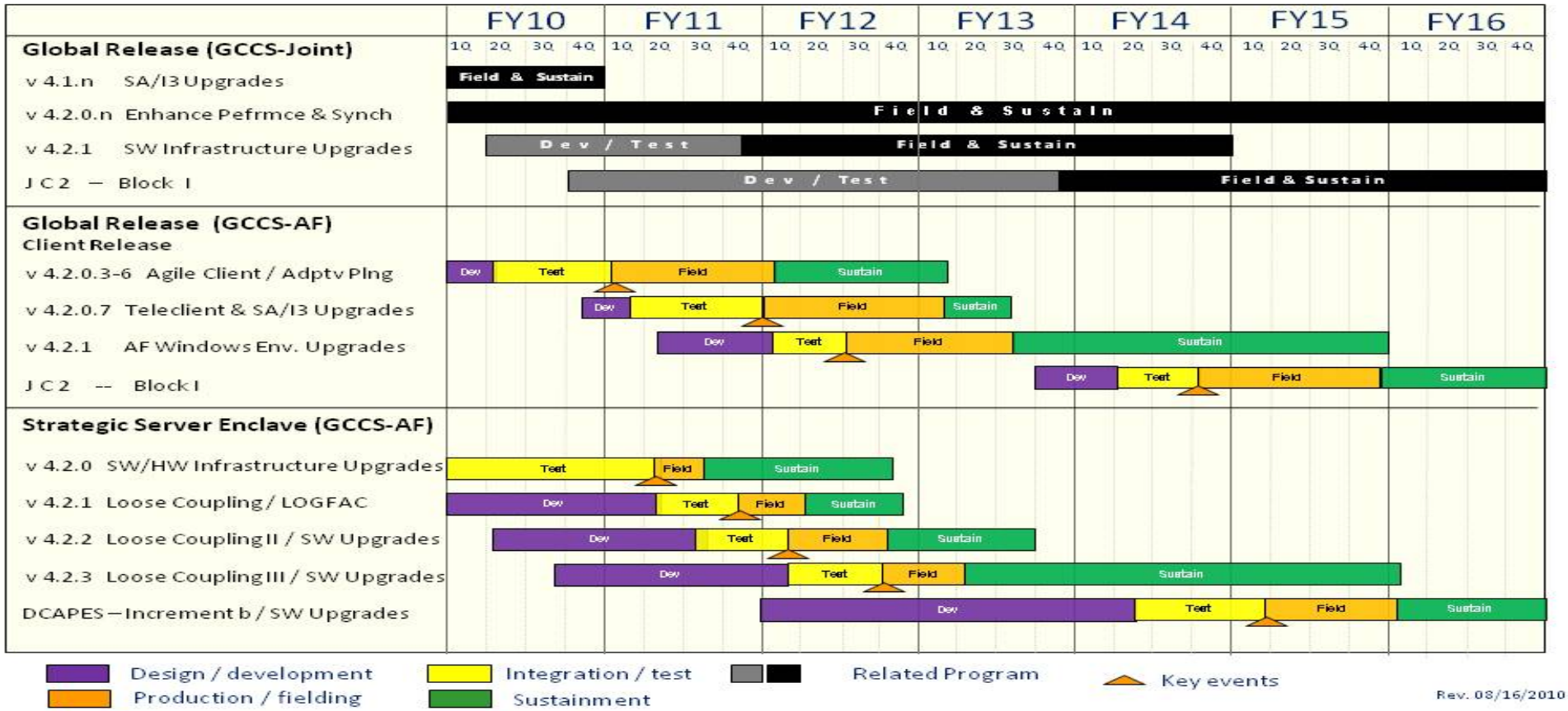

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303150F: *WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM*	**PROJECT** 674667: *Global Command and Control System - AF*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
GCCS-AF 4.2.0.3-6: GR-C AglClient: / Adptv Plng	1	2010	1	2013
GCCS-AF 4.2.0.7: GR-C Teleclient & SA/I3 Upgrades	4	2010	3	2013
GCCS-AF 4.2.1: GR-C AF Windows Env. Upgrades	2	2011	4	2015
GCCS-AF GR-C / JC2 - Block I	4	2013	4	2016
GCC-AF 4.2.0: SSE SW/HW Infrast.Upgrades	1	2010	4	2012
GCCS-AF 4.2.1: SSE Loose Coupling / LOGFAC	1	2010	4	2012
GCCS-AF 4.2.2: SSE LooseCoupling II / SW Upgrades	2	2010	3	2013
GCCS-AF 4.2.3: SSE Loose Coupling III / SW Upgrades	3	2010	1	2016
DECAPES - Increment b / SW Upgrades	1	2012	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0303158F: *Joint Command and Control*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	-	2.157	-	-	-	-	-	-	-	Continuing	Continuing
675216: *JC2 Technology and System Development*	-	2.157	-	-	-	-	-	-	-	Continuing	Continuing

Note

In FY 2010, BPAC 675216 JC2 Technology and System Development, Net-Enabled Command Capability (NECC), was terminated.
The FY2011 effort transfers from PE 0303158F(JC2)to PE 0303150F(GCCS).

A. Mission Description and Budget Item Justification

This effort contributes to the next generation of joint command and control (C2) capabilities for the Department of Defense (DOD). The GCCS program includes each of the Component GCCS programs (i.e., GCCS-AF FoS, GCCS-M, GCCS-J and GCCS-A), which are the current programs of record within each component. These GCCS programs will transition in response to a critical need for coordinated and integrated enhancements to joint C2 capabilities. The Air Force's contribution to joint C2 will be evolved from elements of the GCCS-Air Force Family of Systems (GCCS-AF FoS). GCCS-AF FoS consists of the following programs (each with their own program elements): TBMCS Force Level (TBMCS-FL), Joint Defensive Planner (JDP) - part of TBMCS-FL baseline program element, Joint Targeting Toolbox (JTT), GCCS-AF Infrastructure (GCCS-AF I), Deliberate Crisis Action Planning and Execution Segment (DCAPES) and the Joint Environmental Toolkit (JET). Leveraging the capabilities provided by the Net-Centric Enterprise Services (NCES) program, joint C2 will accelerate the evolution towards a net-centric, web-based, open-system standards approach to providing C2 capabilities and services as the core of the DOD C2 enterprise architecture. The DOD's joint C2 architecture will deliver capabilities as stated in related Joint Requirements Oversight Council (JROC) validated Capability Development Documents (CDD). This effort enhances the capabilities of the GCCS FoS and includes the migration of capabilities to a more modern, interoperable architecture. The technology development phase encompasses risk reduction activities and engineering analyses with system and architectural analyses. Activities also include studies and analysis to support both current program planning and execution and future program planning. The requested RDT&E funding is critical to support Air Force net-centric transformation efforts in the areas of strategic and operational command and control. Funding supports acquisition activities related to joint C2 evolution. These activities include development, testing, integration, architecture and systems engineering, and transition planning in coordination and synchronization with DISA and the other Services. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303158F: *Joint Command and Control*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	2.157	-	-	-
Current President's Budget	-	2.157	-	-	-
Total Adjustments	-	-	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-	-	-

Change Summary Explanation

Project Termination: NECC project within PE 0303158F terminated - OUSD(AT&L) ADM - 2 Nov 2009.
FY 2010 Congressional reduction of $3.087M due to NECC termination.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303158F: *Joint Command and Control*	PROJECT 675216: *JC2 Technology and System Development*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675216: *JC2 Technology and System Development*	-	2.157	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2010, BPAC 675216, JC2 Technology and System Development, Net-Enabled Command Capability (NECC) was terminated.
This FY2011 effort transfers from PE 0303158F(JC2) to PE 0303150F(GCCS).

A. Mission Description and Budget Item Justification

This effort contributes to the next generation of joint command and control (C2) capabilities for the Department of Defense (DOD). The GCCS program includes each of the Component GCCS programs (i.e., GCCS-AF FoS, GCCS-M, GCCS-J and GCCS-A), which are the current programs of record within each component. These GCCS programs will transition in response to a critical need for coordinated and integrated enhancements to joint C2 capabilities. The Air Force's contribution to joint C2 will be evolved from elements of the GCCS-Air Force Family of Systems (GCCS-AF FoS). GCCS-AF FoS consists of the following programs (each with their own program elements): TBMCS Force Level (TBMCS-FL), Joint Defensive Planner (JDP) - part of TBMCS-FL baseline program element, Joint Targeting Toolbox (JTT), GCCS-AF Infrastructure (GCCS-AF I), Deliberate Crisis Action Planning and Execution Segment (DCAPES) and the Joint Environmental Toolkit (JET). Leveraging the capabilities provided by the Net-Centric Enterprise Services (NCES) program, joint C2 will accelerate the evolution towards a net-centric, web-based, open-system standards approach to providing C2 capabilities and services as the core of the DOD C2 enterprise architecture. The DOD's joint C2 architecture will deliver capabilities as stated in related Joint Requirements Oversight Council (JROC) validated Capability Development Documents (CDD). This effort enhances the capabilities of the GCCS FoS and includes the migration of capabilities to a more modern, interoperable architecture. The technology development phase encompasses risk reduction activities and engineering analyses with system and architectural analyses. Activities also include studies and analysis to support both current program planning and execution and future program planning. The requested RDT&E funding is critical to support Air Force net-centric transformation efforts in the areas of strategic and operational command and control. Funding supports acquisition activities related to joint C2 evolution. These activities include development, testing, integration, architecture and systems engineering, and transition planning in coordination and synchronization with DISA and the other Services. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Synchronization, Integration, Test, and Planning	-	2.157	-	-	-
Description: This effort consists of: synchronization, integration and testing of current/upgraded capabilities; operational baseline problem analysis and technical solution implementation; and systems engineering for infrastructure migration to the next generation joint C2 architecture.					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303158F: *Joint Command and Control*	PROJECT 675216: *JC2 Technology and System Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments:					
FY 2011 Plans: Continued integration and test of Air Force capabilities into GCCS baseline configurations. Conducted GCCS-AF 4.2.x operational Baseline problem analysis and technical solution implementation. Conducted C2 interoperability and performance studies in support of further consolidation of GCCS Global Release (GR) and Strategic Server Enclave (SSE) configurations to ensure synchronization and interoperability between AF and joint GCCS components. Continued systems engineering support to migration objectives. Conducted studies and analysis to develop stronger configuration control and security protection strategies. Strengthened configuration management, performance engineering and security protection strategies to facilitate migration to the DOD's emerging joint C2 architecture.					
FY 2012 Base Plans:					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	-	2.157	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0303158F: *Air Force Global Command & Control Sytem, (OPAF)*	5.571	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

The joint C2 acquisition strategy is developed jointly by the Defense Information Systems Agency (DISA), the Services, the Assistant Secretary of Defense for Networks and Information Integration (ASD (NII)), Office of the Under Secretary of Defense for Acquisition, Technology and Logistics (OUSD(AT&L)), and US Joint Forces Command (USJFCOM).

Each service/component is responsible for awarding new or utilizing existing contracts to develop joint C2 capabilities. All related activities are fully coordinated and integrated among DISA and Service offices.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303158F: *Joint Command and Control*	PROJECT 675216: *JC2 Technology and System Development*

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303158F: *Joint Command and Control*	PROJECT 675216: *JC2 Technology and System Development*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product	C/CPAF	TBD:TBD,	-	2.157	Jan 2012	-		-		-	0.000	2.157	0.000
		Subtotal	-	2.157		-		-		-	0.000	2.157	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	2.157		-		-		-	0.000	2.157	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303158F: *Joint Command and Control*	PROJECT 675216: *JC2 Technology and System Development*

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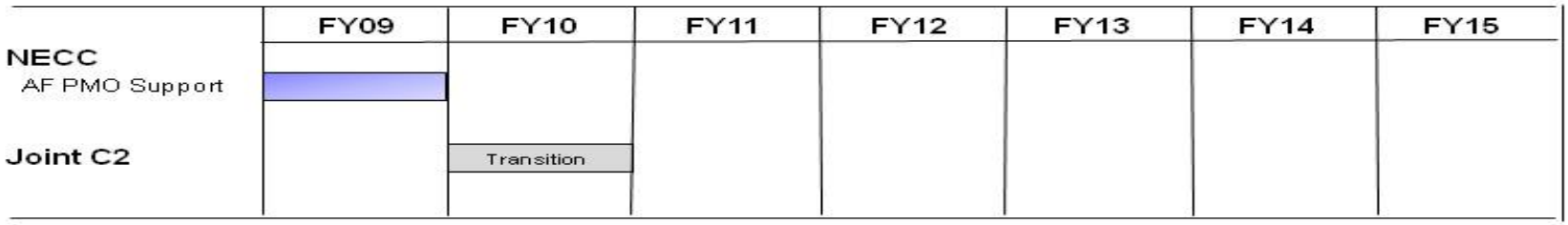
Joint Command & Control - Schedule



Integrity - Service - Excellence

FY12PBR-Revsn_v2 8/10

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303158F: *Joint Command and Control*	**PROJECT** 675216: *JC2 Technology and System Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Air Force Program Management Office (PMO) support to NECC	1	2010	4	2016
Transition and support to evolving joint C2 architecture, engineering and acquisition strategy	1	2010	4	2010

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0303601F: *MILSATCOM Terminals*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	239.352	186.582	238.729	-	238.729	136.666	15.970	13.030	13.275	Continuing	Continuing
672487: *MILSATCOM Terminals*	239.352	186.582	238.729	-	238.729	136.666	15.970	13.030	13.275	Continuing	Continuing

Note

The program funding includes Overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.948M in FY12.

A. Mission Description and Budget Item Justification

Totals include funding for PRCP Program Numbers, 199, FAB-T, and 237, GBS

The Military Satellite Communications (MILSATCOM) Terminals program develops and fields equipment enabling users to communicate via legacy and future systems to include Milstar, Advanced Extremely High Frequency (AEHF), Ultra High Frequency (UHF) Follow-On (UFO), Wideband Global SATCOM (WGS), Defense Satellite Communication System (DSCS), Enhanced Polar Systems (EPS), and other military and commercial satellites, to support tactical Air and Space Expeditionary Force requirements and maintain essential connectivity for strategic forces. Program RDT&E currently includes the following program efforts:

1) Concept development work to identify commercial/military technology solutions to improve MILSATCOM terminal capabilities for the warfighters. Focus includes, but is not limited to, increasing throughput, facilitating sustainability, reducing footprint on user platform and supporting the Global Information Grid (GIG). Funding in FY12 continues support for Advanced Development activities.

2) The Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) program will provide Extremely High Frequency (EHF) voice and data MILSATCOM for nuclear and conventional forces as well as airborne and ground command posts with connectivity to Milstar, AEHF, and Enhanced Polar System (EPS) satellites. FAB-T terminals will also support the command and control (C2) of Milstar, AEHF, and EPS satellites. Funding in FY12 continues the development of FAB-T.

3) The High Data Rate - Radio Frequency (HDR-RF) Ground Terminal program will provide the high data rate SATCOM connectivity needed to support the Intelligence, Surveillance and Reconnaissance (ISR) community with High Bandwidth High Throughput (HBHT) capability. HDR-RF Ground Terminals will be used for Command & Control, Intelligence, Surveillance and Reconnaissance (C2ISR), and will support the full spectrum of operations from humanitarian support/disaster relief to a major theater war. HDR-RF Ground Terminals will be interoperable with WGS satellites to support Air Intelligence Surveillance Reconnaissance (AISR) data rates up to 274Mbps. HDR-RF Ground Terminals will provide quad band (C-, X-, Ku- and Ka-band) SATCOM. HDR-RF Ground Terminals will be interoperable with legacy tactical terminals and operate worldwide with existing military and commercial spacecraft. The user of HDR-RF Ground Terminals is to support ISR Missions. HDR-RF funds support Phase II modem wave porting efforts supporting modem qualification with multiple waveforms, test and evaluation, program office support, system engineering and other related activities. Funding in FY12 continues the development of the HDR-RF Ground Terminal.

4) The Joint Terminal Engineering Office (JTEO) provides tri-service coordination of terminal development, acquisition and fielding activities. Funding in FY12 continues support for JTEO activities.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303601F: *MILSATCOM Terminals*

5) The Global Broadcast Service (GBS) provides for development, systems engineering and integration, test, Transmission Security (TRANSEC) compliance development, program office support of Receive Suites and continued analysis of Operational Requirements Document (ORD) III requirements. Receive suite development will continue in FY11. While the GBS program is in the Operations and Sustainment phase of its lifecycle, the Receive Suite efforts are still conducting development and are captured in this Budget Activity. No funding is requested in FY12

6) The High Data Rate Airborne Terminal (HDRAT) will develop a high data rate SATCOM terminal solution in support of AISR platforms and other supporting activities. As a minimum, HDRAT will provide for secure Ka/Ku high data rate satellite links (over commercial and government owned assets) and line-of-sight communications supporting airborne intelligence, surveillance, and reconnaissance (AISR) platforms. This program will provide AISR platforms with antenna solutions, modem assemblies, and the appropriate waveforms capable of supporting high resolution sensor data and C2 links at speed up to 274 Mbps (platform and mission dependent). To support technical risk analysis, the Terminals Program Office (TPO) shall provide the Analysis of Alternatives (AoA) study team data on risks, mitigation techniques, contractual activities designed to mitigate those risks, and on-going high speed airborne waveform development efforts not limited to Global Hawk. No funding is requested in FY12. AoA activities continue with previous year funding.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	253.818	186.582	105.274	-	105.274
Current President's Budget	239.352	186.582	238.729	-	238.729
Total Adjustments	-14.466	-	133.455	-	133.455
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-0.303	-			
• SBIR/STTR Transfer	-9.213	-			
• Other Adjustments	-4.950	-	133.455	-	133.455

Change Summary Explanation

Additional $165.052M in FY12 is due to a restructure of the FAB-T program. Program challenges extended the development schedule, and drove the need for additional RDT&E funds in FY12, as well as delayed the Low Rate Initial Production (LRIP) contract until FY13. Other adjustments support higher Air Force priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303601F: *MILSATCOM Terminals*	PROJECT 672487: *MILSATCOM Terminals*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
672487: *MILSATCOM Terminals*	239.352	186.582	238.729	-	238.729	136.666	15.970	13.030	13.275	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Overhead reduction efficiency -- $948K in FY12

A. Mission Description and Budget Item Justification

Totals include funding for PRCP Program Numbers, 199, FAB-T, and 237, GBS

The Military Satellite Communications (MILSATCOM) Terminals program develops and fields equipment enabling users to communicate via legacy and future systems to include Milstar, Advanced Extremely High Frequency (AEHF), Ultra High Frequency (UHF) Follow-On (UFO), Wideband Global SATCOM (WGS), Defense Satellite Communication System (DSCS), Enhanced Polar Systems (EPS), and other military and commercial satellites, to support tactical Air and Space Expeditionary Force requirements and maintain essential connectivity for strategic forces. Program RDT&E currently includes the following program efforts:

1) Concept development work to identify commercial/military technology solutions to improve MILSATCOM terminal capabilities for the warfighters. Focus includes, but is not limited to, increasing throughput, facilitating sustainability, reducing footprint on user platform and supporting the Global Information Grid (GIG). Funding in FY12 continues support for Advanced Development activities.

2) The Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) program will provide Extremely High Frequency (EHF) voice and data MILSATCOM for nuclear and conventional forces as well as airborne and ground command posts with connectivity to Milstar, AEHF, and Enhanced Polar System (EPS) satellites. FAB-T terminals will also support the command and control (C2) of Milstar, AEHF, and EPS satellites. Funding in FY12 continues the development of FAB-T.

3) The High Data Rate - Radio Frequency (HDR-RF) Ground Terminal program will provide the high data rate SATCOM connectivity needed to support the Intelligence, Surveillance and Reconnaissance (ISR) community with High Bandwidth High Throughput (HBHT) capability. HDR-RF Ground Terminals will be used for Command & Control, Intelligence, Surveillance and Reconnaissance (C2ISR), and will support the full spectrum of operations from humanitarian support/disaster relief to a major theater war. HDR-RF Ground Terminals will be interoperable with WGS satellites to support Air Intelligence Surveillance Reconnaissance (AISR) data rates up to 274Mbps. HDR-RF Ground Terminals will provide quad band (C-, X-, Ku- and Ka-band) SATCOM. HDR-RF Ground Terminals will be interoperable with legacy tactical terminals and operate worldwide with existing military and commercial spacecraft. The user of HDR-RF Ground Terminals is to support ISR Missions. HDR-RF funds support Phase II modem wave porting efforts supporting modem qualification with multiple waveforms, test and evaluation, program office support, system engineering and other related activities. Funding in FY12 continues the development of the HDR-RF Ground Terminal.

4) The Joint Terminal Engineering Office (JTEO) provides tri-service coordination of terminal development, acquisition and fielding activities. Funding in FY12 continues support for JTEO activities.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303601F: *MILSATCOM Terminals*	PROJECT 672487: *MILSATCOM Terminals*

5) The Global Broadcast Service (GBS) provides for development, systems engineering and integration, test, Transmission Security (TRANSEC) compliance development, program office support of Receive Suites and continued analysis of Operational Requirements Document (ORD) III requirements. Receive suite development will continue in FY11. While the GBS program is in the Operations and Sustainment phase of its lifecycle, the Receive Suite efforts are still conducting development and are captured in this Budget Activity. No funding is requested in FY12

6) The High Data Rate Airborne Terminal (HDRAT) will develop a high data rate SATCOM terminal solution in support of AISR platforms and other supporting activities. As a minimum, HDRAT will provide for secure Ka/Ku high data rate satellite links (over commercial and government owned assets) and line-of-sight communications supporting airborne intelligence, surveillance, and reconnaissance (AISR) platforms. This program will provide AISR platforms with antenna solutions, modem assemblies, and the appropriate waveforms capable of supporting high resolution sensor data and C2 links at speed up to 274 Mbps (platform and mission dependent). To support technical risk analysis, the Terminals Program Office (TPO) shall provide the Analysis of Alternatives (AoA) study team data on risks, mitigation techniques, contractual activities designed to mitigate those risks, and on-going high speed airborne waveform development efforts not limited to Global Hawk. No funding is requested in FY12. AoA activities continue with previous year funding.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: MILSATCOM Terminals	239.352	186.582	238.729	-	238.729
Description: MILSATCOM Terminals program develops and fields equipment enabling users to communicate via legacy and future systems to include Milstar, AEHF, UFO, WGS, DSCS, EPS, and other military and commercial satellites, to support tactical Air and Space Expeditionary Force requirements and maintain essential connectivity for strategic forces. Programs within MILSATCOM Terminals include Advanced Development, FAB-T, HDR-RF, JTEO, GBS, and HDRAT					
FY 2010 Accomplishments: 1. Continue concept development/prototype demonstrations/MILSATCOM Terminal roadmap. 2. Continue development of FAB-T Terminal. 3. Continue development of the HDR-RF Ground Terminal. 4. Continue support for the JTEO. 5. Develop GBS rucksack terminal. 6. Support HDRAT AoA activites. Continue program support and other related activities.					
FY 2011 Plans: 1. Continue concept development/prototype demonstrations/MILSATCOM Terminal roadmap. 2. Continue development of FAB-T Terminal. 3. Continue development of the HDR-RF Ground Terminal.					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303601F: *MILSATCOM Terminals*	PROJECT 672487: *MILSATCOM Terminals*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
4. Continue support for the JTEO. 6. Continue support for HDRAT AoA activites. Continue program support and other related activities.					
FY 2012 Base Plans: 1. Continue concept development/prototype demonstrations/MILSATCOM Terminal roadmap. 2. Continue development of FAB-T Terminal. 3. Continue development of the HDR-RF Ground Terminal. 4. Continue support for the JTEO. Continue program support and other related activities.					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	239.352	186.582	238.729	-	238.729

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0303601F: *MILSATCOM Terminals, APAF*	10.488	152.594	50.921	0.000	50.921	89.206	127.728	83.125	84.617	Continuing	Continuing
• PE 0303601F (1): *MILSATCOM Terminals, OPAF*	136.274	219.634	104.468	0.000	104.468	353.958	190.078	56.142	56.915	Continuing	Continuing

D. Acquisition Strategy

FAB-T provides a Family of Beyond Line-of-Sight (BLOS) satellite communications (SATCOM) and Line-of-Sight (LOS) terminals with an open architecture to satisfy the requirements identified in the Advanced Wideband Terminal (AWT) and Command Post Terminal (CPT) Operational Requirements Documents (ORDs) and FAB-T Capability Development Document (CDD).

FAB-T provides the layered architecture which enables support for evolving and new communication capabilities and technologies. Capabilities include transmission and reception of voice, data, imagery, and video as well as broadcast reception over protected and LOS systems. FAB-T also provides the capability for air and ground communications using the Milstar Extremely High Frequency (EHF) and Advanced Extremely High Frequency (AEHF) waveforms. FAB-T terminals are planned for the B-2, B-52, and RC-135 aircraft and to upgrade the existing Command Post Terminals (CPTs) located on the ground (fixed and transportable) and airborne on the E-4 and E-6 aircraft.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303601F: *MILSATCOM Terminals*	PROJECT 672487: *MILSATCOM Terminals*

The HDR-RF Ground Terminal Program consists of three Phases. Phase 1, the Ground Modem Application Demonstration phase, consists of multiple contractors developing an SCA version 2.2.1 compliant, HDR-RF Ground HBHT modem, which will port/run a Government provided test waveform. This phase culminates in a demonstration/test of the vendor's modem hardware and facilitates HBHT SCA modem availability when the standardized operational waveform is complete. Phase 2 consists of porting and demonstrating of the standardized operational waveform, and qualifying the modem. Phase 3 consists of integrating/qualifying the HDR-RF ground modem into an existing Ground Multi-band Terminals, obtaining appropriate certifications, producing, and fielding the system to communicate over WGS using transponded Ka-band satellite communications.

GBS provides warfighters with a worldwide, seamless, high throughput broadcast information service to support today's and tomorrow's mission. The Receive Suite (RS) development will satisfy the portable receive suite requirements identified in the GBS Operational Requirements Document. (ORD) III Block-3. RS provides Special Operations use of GBS in operational areas; capabilities include reception of voice, data, imagery and video. The RS shall be manpackable and fit into a single rucksack with a weight limit of 20 pounds. The progam strategy is to design, develop, and test a RS for special operation use and testing and integration to fulfill the GBS TRANSEC requirement.

The development funding for HDRAT will support those activities associated with providing a high data rate satellite and line-of-sight communications solutions for the passage of AISR, C3, and force direction data to/from airborne platforms and other supporting activities. The resulting solution will provide for new antenna equipment; modem assemblies; updated high data rate waveforms; and program office support. Aquisition strategies will be shaped by AoA outputs or leadership direction and will be IAW statutory requirements.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303601F: *MILSATCOM Terminals*	PROJECT 672487: *MILSATCOM Terminals*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FAB-T Development	C/CPAF	Boeing Corp:Huntington Beach, CA	1,408.851	123.556	Jan 2011	216.803	Jan 2012	-		216.803	Continuing	Continuing	0.000
FAB-T	Various	Various:Various,	54.206	-		-		-		-	Continuing	Continuing	0.000
High Data Rate (HDR) RF Ground Terminal Development (1)	C/FFP	Comtech:Tempe, AZ	5.993	-		-		-		-	Continuing	Continuing	0.000
High Data Rate (HDR) RF Ground Terminal Development (2)	C/FFP	Raytheon:Marborough, MA	6.365	-		-		-		-	Continuing	Continuing	0.000
High Data Rate (HDR) RF Ground Terminal Development (3) (LAB)	C/FFP	L3 Comm:Hauppauge, NY	1.767	-	Jan 1901	-	Jan 1901	-		-	0.000	1.767	0.000
High Data Rate (HDR) RF Ground Terminal Development (4)	TBD	TBD:TBD,	-	1.545	Apr 2011	-		-		-	0.000	1.545	0.000
High Data Rate (HDR) RF Air Terminal Development (merged with FAB-T beginning in FY06)	C/CPAF	Boeing Corp:Huntington Beach, CA	13.787	-		-		-		-	0.000	13.787	0.000
Lasercom Terminal Development Studies	C/FFP	Various:Various,	30.395	-		-		-		-	0.000	30.395	0.000
Global Broadcast Service (GBS)	Various	Various:Various,	1.839	-		-		-		-	0.000	1.839	0.000
Northrop - High Data Rate Airborne Terminal (HDRAT)	C/FFP	Various:Palmdale, CA	-	4.500	Apr 2011	-		-		-	0.000	4.500	0.000
AF Space Command (AoA) - High Data Rate Airborne Terminal (HDRAT)	Various	Various:Colorado Springs, CO	-	2.000	Oct 2010	-		-		-	0.000	2.000	0.000
MITRE (FFRDC) - High Data Rate Airborne Terminal (HDRAT)	Various	Various:Boston, MA	-	6.100	Oct 2010	-		-		-	0.000	6.100	0.000
	TBD	Various:Boston, MA	-	6.700	Dec 2010	-		-		-	0.000	6.700	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303601F: *MILSATCOM Terminals*	PROJECT 672487: *MILSATCOM Terminals*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MIT/Lincoln Labs - High Data Rate Airborne Terminal (HDRAT)													
High Data Rate Airborne Terminal (HDRAT)	TBD	TBD:TBD,	-	10.746	Jan 2010	-		-		-	0.000	10.746	0.000
		Subtotal	1,523.203	155.147		216.803		-		216.803			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering Support	C/CPAF	MITRE:Bedford MA,	13.563	12.699	Jan 2011	7.870	Jan 2012	-		7.870	Continuing	Continuing	0.000
Systems Engineering/ Functional/Financial Support	Various	Various:Various,	11.481	7.911	Jan 2011	8.439	Jan 2012	-		8.439	Continuing	Continuing	0.000
Miscellaneous	Various	Various:Various,	4.718	5.207	Jan 2011	3.311	Jan 2012	-		3.311	Continuing	Continuing	0.000
		Subtotal	29.762	25.817		19.620		-		19.620			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various Programs	Various	AF Research Lab:,	5.070	4.618	Jan 2011	1.769	Jan 2012	-		1.769	Continuing	Continuing	0.000
Miscellaneous T&E	Various	Various:Various,	-	1.000	Jan 2011	0.537	Jan 2012	-		0.537	Continuing	Continuing	0.000
		Subtotal	5.070	5.618		2.306		-		2.306			0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303601F: *MILSATCOM Terminals*	PROJECT 672487: *MILSATCOM Terminals*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,558.035	186.582		238.729		-		238.729			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0303601F: *MILSATCOM Terminals*	PROJECT 672487: *MILSATCOM Terminals*

MILSATCOM Terminals Schedule RDoc

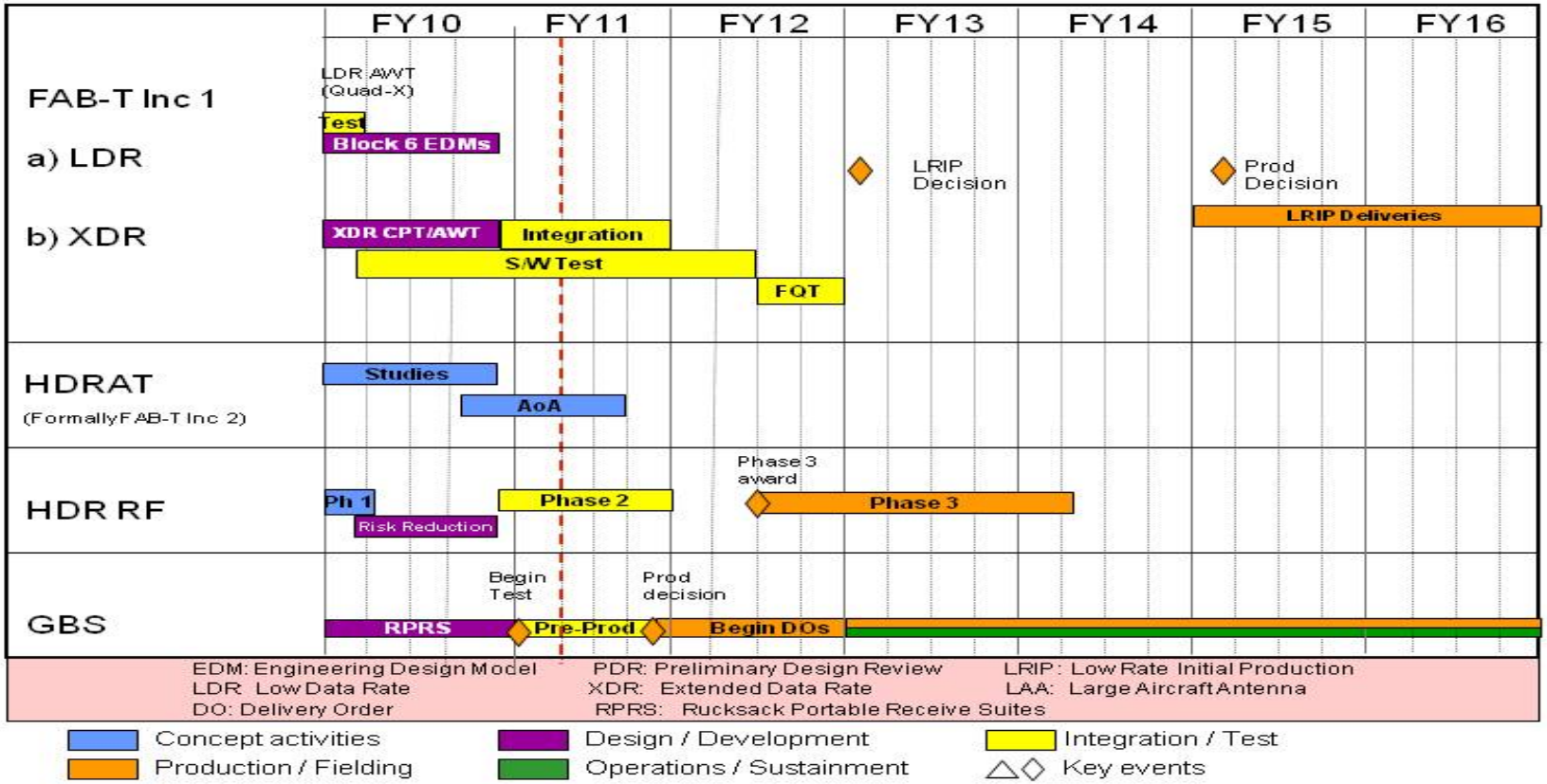


Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0303601F: *MILSATCOM Terminals*	**PROJECT** 672487: *MILSATCOM Terminals*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
GBS Receive Suite Award	1	2011	3	2011
HDRAT AoA	3	2010	1	2011
FAB-T LDR AWT (Quad-X) Test	1	2010	2	2010
FAB-T Block 6 EDMs	1	2010	4	2010
FAB-T XDR CPT/AWT	1	2010	4	2010
FAB-T S/W Test	1	2010	2	2012
FAB-T Intergration	1	2011	4	2011
FAB-T FQT	2	2012	4	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	151.842	149.268	121.748	-	121.748	126.946	127.114	129.008	131.383	Continuing	Continuing
675180: *RC-135 (Airborne SIGINT Development - RC-135 Rivet Joint)*	36.819	27.328	34.744	-	34.744	38.877	22.828	30.666	6.839	Continuing	Continuing
675182: *MQ-1/MQ-9 (Airborne SIGINT Development - Predator)*	32.630	29.751	37.874	-	37.874	35.274	32.270	31.245	40.171	Continuing	Continuing
675183: *Common Development (Airborne SIGINT Development - Common Development)*	41.799	59.048	38.855	-	38.855	44.541	58.892	42.322	61.792	Continuing	Continuing
675184: *RQ-4 (Airborne SIGINT Development - Global Hawk*	22.596	15.083	3.608	-	3.608	0.996	4.066	5.968	7.063	Continuing	Continuing
675185: *Compass Bright (Airborne SIGINT Development - Compass Bright)*	11.363	6.022	6.169	-	6.169	6.312	6.470	6.667	6.784	Continuing	Continuing
675186: *Special Programs (Airborne SIGINT Development - Special Platforms)*	6.635	12.036	0.498	-	0.498	0.946	2.588	12.140	8.734	Continuing	Continuing

Note

The program funding includes reductions for Overhead efficiencies that are not intended to impact program content. The efficiencies reductions total $2.455M in FY12.

Totals include funding for PRCP program number 375 "ASIP"

A. Mission Description and Budget Item Justification

(U) This PE provides signals intelligence (SIGINT) development efforts for all USAF airborne platforms. The funds in this PE are distributed among all Airborne SIGINT Enterprise (ASE) projects based on the development priorities established by the USAF SIGINT Capabilities Working Group (SCWG) in order to build a total SIGINT capability. As a result, the USAF will move funds between projects periodically to develop the highest priority projects in response to urgent warfighter needs. This PE will participate in the development, integration, testing, and implementation of international standards (to include NATO standardization agreements) to ensure joint, allied, and coalition interoperability. Modernization efforts include sensors for the platforms and their appropriate interfaces with the Air Force Distributed Common Ground System (AF DCGS). This approach will allow a synergistic development effort to be accomplished while developing a true Air Force-wide capability. This enterprise will use the Air Force Cryptologic Architecture (AFCA) for planning and decision-making and, in turn, employ the Joint Airborne SIGINT Architecture (JASA) open architecture standards to allow maximum ease of future upgrades and system interoperability. The primary goal of the ASE is to produce an architecture-based,

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*

capability-focused SIGINT investment strategy for the USAF. Funds in any project may be used to fund initiatives in other projects within this PE at the discretion of the SCWG. Funds in any project can also cover activities to include studies and analysis to support both current program planning and execution and future program planning. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	166.989	149.268	129.610	-	129.610
Current President's Budget	151.842	149.268	121.748	-	121.748
Total Adjustments	-15.147	-	-7.862	-	-7.862
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-0.697	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-14.450	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-7.862	-	-7.862

Change Summary Explanation

The program has been funded to the latest cost estimate, less efficiencies. The reduction for efficiencies are not intended to impact program content.

Additionally, the program was reduced for other AF priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675180: *RC-135 (Airborne SIGINT Development - RC-135 Rivet Joint)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675180: *RC-135 (Airborne SIGINT Development - RC-135 Rivet Joint)*	36.819	27.328	34.744	-	34.744	38.877	22.828	30.666	6.839	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) This project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with the integration and modification of the RC-135 SIGINT sensors and their associated air and ground components. Through extensive utilization of commercial-off-the-shelf (COTS)-based solutions to fielding of needed capabilities, it also incurs the need for continuous diminishing manufacturing sources integration efforts consistent with the COTS technology cycle. These efforts provide the required engineering for preliminary assessments of technical feasibility, operability, or military utility as well as specific engineering implementations integrated into the various baseline modifications. These funds will be split between the RIVET JOINT, COMBAT SENT, and COBRA BALL programs. Funding reflects the SIGINT Capabilities Working Group (SCWG) priorities and the accomplishment of other ASE initiatives. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: SIGINT Development	36.819	27.328	34.744	-	34.744
Description: Non-Recurring Engineering (NRE) for the RC-135 SIGINT Systems. See Classified Budget Exhibits (PE 0305207F)					
FY 2010 Accomplishments: Efforts included air surveillance capabilities and antenna improvements on the RIVET JOINT and geolocation improvements for COMBAT SENT and COBRA BALL					
FY 2011 Plans: Continues improvements in ELINT capabilities, EAN 105 antenna integration efforts and software improvements					
FY 2012 Base Plans: Will continue SIGINT development efforts for the RC-135 fleet					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	36.819	27.328	34.744	-	34.744

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675180: *RC-135 (Airborne SIGINT Development - RC-135 Rivet Joint)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• APAF: *PE 0305207F, Manned Reconnaissance Systems*	161.514	149.582	202.080	0.000	202.080	210.722	218.112	221.462	225.694	Continuing	Continuing

D. Acquisition Strategy

(U) Aircraft, aircraft sensor systems, and associated ground support system modifications planned include the procurement, fielding and logistical support for future RIVET JOINT, COMBAT SENT and COBRA BALL baseline configurations. Development and integration managed by the Big Safari Systems Group; they employ evolutionary acquisition approaches to field incremental capability improvements.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675180: *RC-135 (Airborne SIGINT Development - RC-135 Rivet Joint)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SIGINT Sensor Development and Integration	SS/Various	L3COM:Greenville, TX	169.605	27.328	Jan 2011	34.744	Jan 2012	-		34.744	Continuing	Continuing	TBD
		Subtotal	169.605	27.328		34.744		-		34.744			

Remarks

Above contract method/type will be CPFF and FFP

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	169.605	27.328		34.744		-		34.744			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675180: *RC-135 (Airborne SIGINT Development - RC-135 Rivet Joint)*

U.S. AIR FORCE

RC-135 Development Efforts ASE PE

Integrity - Service - Excellence

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	**PROJECT** 675180: *RC-135 (Airborne SIGINT Development - RC-135 Rivet Joint)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Development of RIVET JOINT mission sensors	1	2010	4	2016
Development of COMBAT SENT mission sensors	1	2010	4	2016
Development of COBRA BALL mission sensors	1	2010	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675182: *MQ-1/MQ-9 (Airborne SIGINT Development - Predator)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675182: *MQ-1/MQ-9 (Airborne SIGINT Development - Predator)*	32.630	29.751	37.874	-	37.874	35.274	32.270	31.245	40.171	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) This project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with the integration and modification of the MQ-1/MQ-9 SIGINT sensors and their associated air and ground components. This is an RTD&E effort to integrate SIGINT capability on to the MQ-1/MQ-9 platforms. The sensors shall be capable of collecting technical data and geolocating signals of interest and providing sensor data to a workstation. The integration effort shall include the use of existing sensor suites to the maximum extent possible to minimize design costs and reduce development time lines. Design efforts specific to the Predator or Reaper systems may include, but not be limited to, antennas, EMI reduction, encryption techniques, and changes to the aircraft, ground station, data link, and simulator necessary to accommodate a SIGINT payload and its data throughput. Funding will begin efforts on antennas, receivers, processors, software development, aircraft integration and ground station upgrades to allow a persistent reconnaissance, surveillance, targeting, and acquisition capability against mission specific threats. Development of a networked capability to other SIGINT platforms will also be initiated. In accordance with an evolutionary acquisition strategy, a series of Airborne Signals Intellice Payload (ASIP) capability improvements will begin preliminary design activities to support software and hardware upgrades in FY11. These upgrades are designed to exploit signals of interest identified as service priorities by the Air Force SIGINT Capabilities Working Group (SCWG). This project provides the warfighter with near term increased combat capability. Enhancements are implemented as soon as technology and risk achieve satisfactory levels. Compatability improvements will be inserted into the ASIP Family of Sensors through individual development efforts that exploit signals of interest identified as Service priorities by the AF SCWG. Blue Moon development efforts will also begin in FY12. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: MQ SIGINT Development	32.630	29.751	37.874	-	37.874
Description: Develop and test a common/scalable SIGINT system for multiple SIGINT platforms (MQ-1 and MQ-9) using an open system architecture.					
FY 2010 Accomplishments: Completed Factory Acceptance Test (FAT) for the ASIP-1C program and then transfered the ASIP-1C assets to the ASIP-2C program (Decision to stop the ASIP-1C program after FAT was approved by OSD in Oct 09).					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675182: *MQ-1/MQ-9 (Airborne SIGINT Development - Predator)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Began developing the ASIP-2C prototype for the MQ-9 and prepare to conduct demo flights of the prototype sensor in 2Q/3QFY11. ***FY 2011 Plans:*** Integrate and demonstrate the ASIP-2C on a surrogate MQ-9 and start the EMD phase in 2Q FY12. Complete the prototype and pod and continue flight demo. ***FY 2012 Base Plans:*** Will complete the CDR, MS B & C, and FAT. ASIP 2C will begin the EMD phase. Blue Moon development effort will begin. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	32.630	29.751	37.874	-	37.874

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• APAF: *PE 0205219F, MQ-9*	0.000	18.766	54.952	0.000	54.952	127.774	85.388	73.426	74.743	Continuing	Continuing

D. Acquisition Strategy

(U) SIGINT capabilities will be integrated onto these platforms using an evolutionary acquisition approach and a sole source contract.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675182: *MQ-1/MQ-9 (Airborne SIGINT Development - Predator)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SIGINT Sensor Integration and Test	Various	General Atomics:San Diego, CA	3.201	6.024	Jan 2011	5.851	Jan 2012	-		5.851	11.000	26.076	26.076
SIGINT Sensors Development	SS/CPIF	Northrop Grumman ESL:San Jose, CA	60.162	22.140	Jan 2011	19.523	Jan 2012	-		19.523	11.000	112.825	112.825
Blue Moon	TBD	TBD:TBD,	-	-		8.000	Jan 2012	-		8.000	1.000	9.000	9.000
		Subtotal	63.363	28.164		33.374		-		33.374	23.000	147.901	147.901

Remarks

Cost to complete is for the intial ASIP 2C variant. Upgrades will continue for this program throughout the FYDP

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management, Various Integration Efforts, & Flight Test	Various	Not specified.:,	5.933	1.587	Jan 2011	4.500	Jan 2012	-		4.500	Continuing	Continuing	TBD
		Subtotal	5.933	1.587		4.500		-		4.500			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675182: *MQ-1/MQ-9 (Airborne SIGINT Development - Predator)*	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	69.296	29.751		37.874		-		37.874			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675182: *MQ-1/MQ-9 (Airborne SIGINT Development - Predator)*

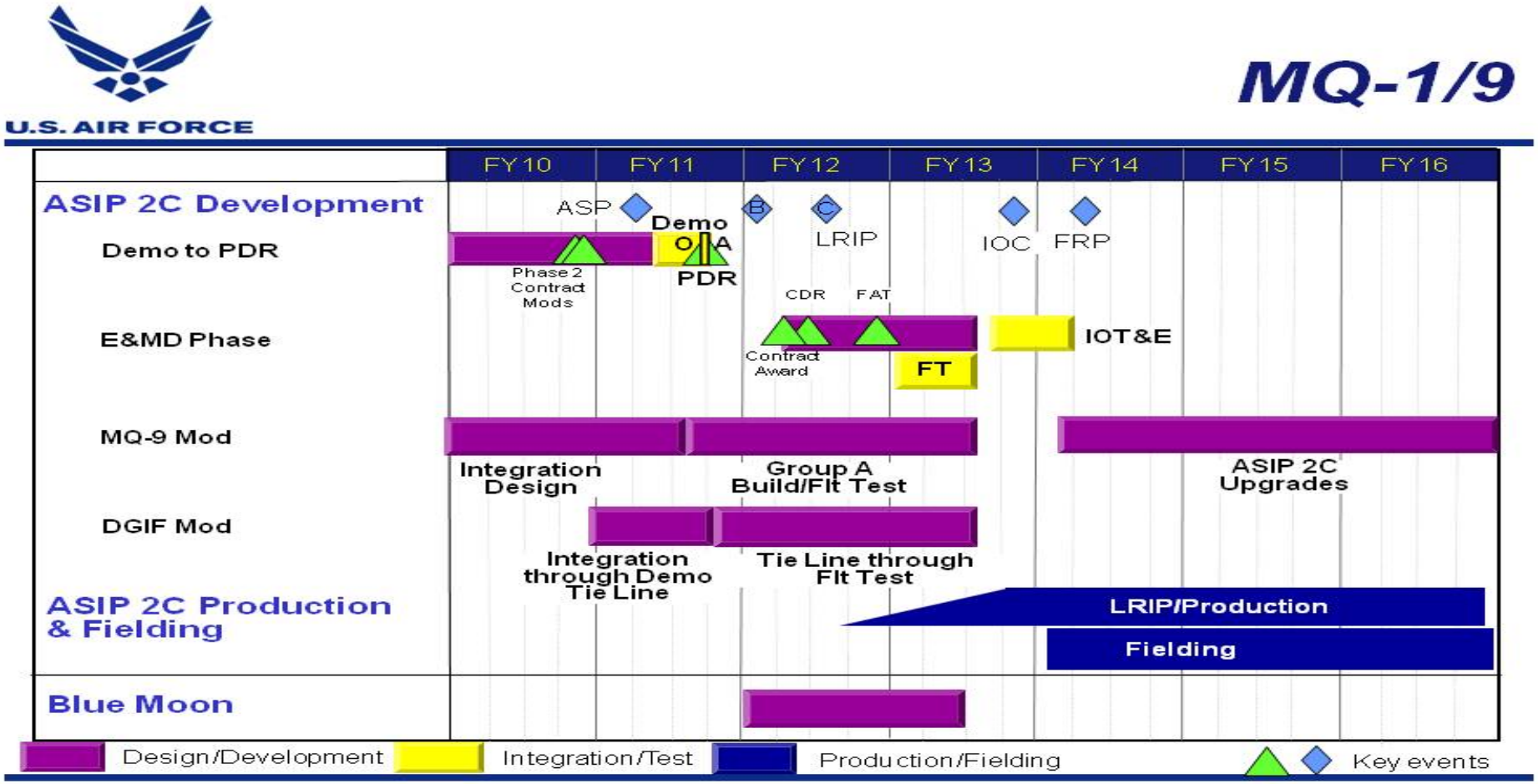

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	**PROJECT** 675182: *MQ-1/MQ-9 (Airborne SIGINT Development - Predator)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ASIP-2C Development	1	2010	1	2014
ASIP 2C MS B	1	2012	1	2012
ASIP 2C MS C	3	2012	3	2012
ASIP 2C Flight Test and IOT&E	1	2013	2	2014
ASIP 2C IOC	4	2013	4	2013
ASIP 2C LRIP/Production and Fielding	4	2012	4	2016
ASIP 2C Upgrades	2	2014	4	2016
Blue Moon Development	1	2012	2	2013

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675183: *Common Development (Airborne SIGINT Development - Common Development)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675183: *Common Development (Airborne SIGINT Development - Common Development)*	41.799	59.048	38.855	-	38.855	44.541	58.892	42.322	61.792	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

(U) This project supports the development of the Airborne Signals Intelligence Payload (ASIP) sensors for use on multiple platforms as well as projects common to the ASE PE overall to include, but not limited to: Air Force Cryptologic Architecture (AFCA) maintenance, modeling and simulation efforts and NATO Signals Intelligence (SIGINT) efforts.

A. Mission Description and Budget Item Justification

(U) This project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with the insertion of new capabilities integrated into the ASIP sensors and their associated air and ground components that will be used on/by more than one platform. The common development SIGINT project also supports development of new sensors capabilities and identifies suitable replacements for components affected by diminishing manufacturing sources. New capabilities are developed by separate projects. The current sensors being developed are the ASIP (which has completed developmental testing on the U-2 and is being tested on the Global Hawk (RQ-4)), and the scalable ASIP payloads for the MQ-1 (ASIP-1C) and MQ-9 (ASIP-2C). The AF has descoped the SIGINT program for the MQ-1 and transfered the Hardware/Software (HW/SW) to the SIGINT program for the MQ-9 after completion of the factory acceptance testing (FAT). The systems' open architecture and Joint Airborne SIGINT Architecture (JASA) compliant design supports streamlined integration of ASIP onto additional ISR platforms. The ASIP Family of Systems (FoS) will design and build a common/scalable SIGINT system designed for maximum coverage of the electromagnetic spectrum through the use of an integrated high and low band system. ASIP has delivered developmental units for integration and test on both the RQ-4 and U-2. Baseline ASIP is now operational on the U-2. ASIP-2C will develop a SIGINT sensor for the MQ-9. Capability improvements will be inserted into the ASIP family of sensors through individual development efforts that exploit signals of interest identified as service priorities by the Air Force SIGINT Capabilities Working Group. This project provides the warfighter with near term increased combat capability. Enhancements are implemented as soon as technology and risk achieve satisfactory levels. Compatability improvements will be inserted into the ASIP Family of Sensors through individual development efforts that exploit signals of interest identified as Service priorities by the AF SCWG. Sensors will be integrated and tested on the various platforms as funding permits. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.
(U) Some parts of Baseline ASIP are funded within the Common Development project of this PE and some parts are funded within the RQ-4 Global Hawk project (675184). Parts that have applicability to other platforms such as the U-2 or MQ-9 are funded in Common Development project.

(U) The Baseline ASIP sensor production will be in the RQ-4 PE (35220F).

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675183: *Common Development (Airborne SIGINT Development - Common Development)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: SIGINT Development	41.799	59.048	38.855	-	38.855
Description: Develop and test a common/scalable SIGINT system for multiple SIGINT platforms (U-2, Global Hawk, MQ-1 and MQ-9) using an open system architecture. ***FY 2010 Accomplishments:*** Completed the development and testing of the ASIP on the Global Hawk. Supported preparation for the ASIP Global Hawk Initial Operational and Test Evaluation (IOT&E). Began ASIP testing with the upgraded AF-DCGS software to support multi-ship capabilities. ***FY 2011 Plans:*** Complete ASIP Global Hawk Initial Operational and Test Evaluation (IOT&E). Complete analysis of all open/ future problems associated with the development and IOT&E flights. Fix major deficiencies found during the Global Hawk tests. Start the Upgrades program to begin development of new signals capabilities to be inserted into the current ASIP sensors. ***FY 2012 Base Plans:*** Continue new signal capabilities and enhancements for the ASIP sensor. Details are classified ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	41.799	59.048	38.855	-	38.855

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0305220F: *RQ-4 Sensor Integration- Sensor Development (APAF)*	800.212	859.244	747.978	0.000	747.978	603.846	551.881	456.596	351.681	Continuing	Continuing

D. Acquisition Strategy

Signals Intelligence capabilities will be developed and integrated onto various platforms using an evolutionary acquisition approach.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675183: *Common Development (Airborne SIGINT Development - Common Development)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ASIP Baseline Sensor Development/Integration	SS/Various	Northrop Grumman:San Jose, CA	152.556	2.657	Jan 2011	-		-		-	0.000	155.213	155.213
ASIP Baseline Development/ Integration (AFDCGS Ground Control Processor Integration)	SS/CPIF	Lockheed Martin Astronautics:Denver, CO	20.012	2.789	Jan 2011	-		-		-	0.000	22.801	22.801
ASIP Baseline Development/ Integration (AFDCGS Deployable Ground Intercept Facility Integration)	SS/CPIF	Raytheon:Falls Church, VA	22.328	2.789	Jan 2011	-		-		-	0.000	25.117	25.117
ASIP Upgrades Development	SS/CPIF	Northrop Grumman:San Jose, CA	-	46.617	Jan 2011	32.855	Jan 2012	-		32.855	Continuing	Continuing	TBD
ASIP-1C Development	SS/CPIF	Northrop Grumman:San Jose, CA	39.766	-		-		-		-	0.000	39.766	39.766
ASIP-1C Integration	SS/CPFF	General Atomic Aeronautical Systems, Inc.:San Diego, CA	0.266	-		-		-		-	0.000	0.266	0.266
High Band System	SS/CPAF	Northrop Grumman:San Jose, CA	4.874	-		-		-		-	0.000	4.874	4.874
Various SIGINT Efforts	Various	Northrop Grumman:San Jose, CA	7.258	2.800	Jan 2011	3.000	Jan 2012	-		3.000	Continuing	Continuing	TBD
		Subtotal	247.060	57.652		35.855		-		35.855			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
(U) Management, Various Integration Efforts, & Flight Test	Various	TBD:TBD,	37.867	1.396	Jan 2011	3.000		-		3.000	Continuing	Continuing	TBD
		Subtotal	37.867	1.396		3.000		-		3.000			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675183: *Common Development (Airborne SIGINT Development - Common Development)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	284.927	59.048		38.855		-		38.855			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675183: *Common Development (Airborne SIGINT Development - Common Development)*

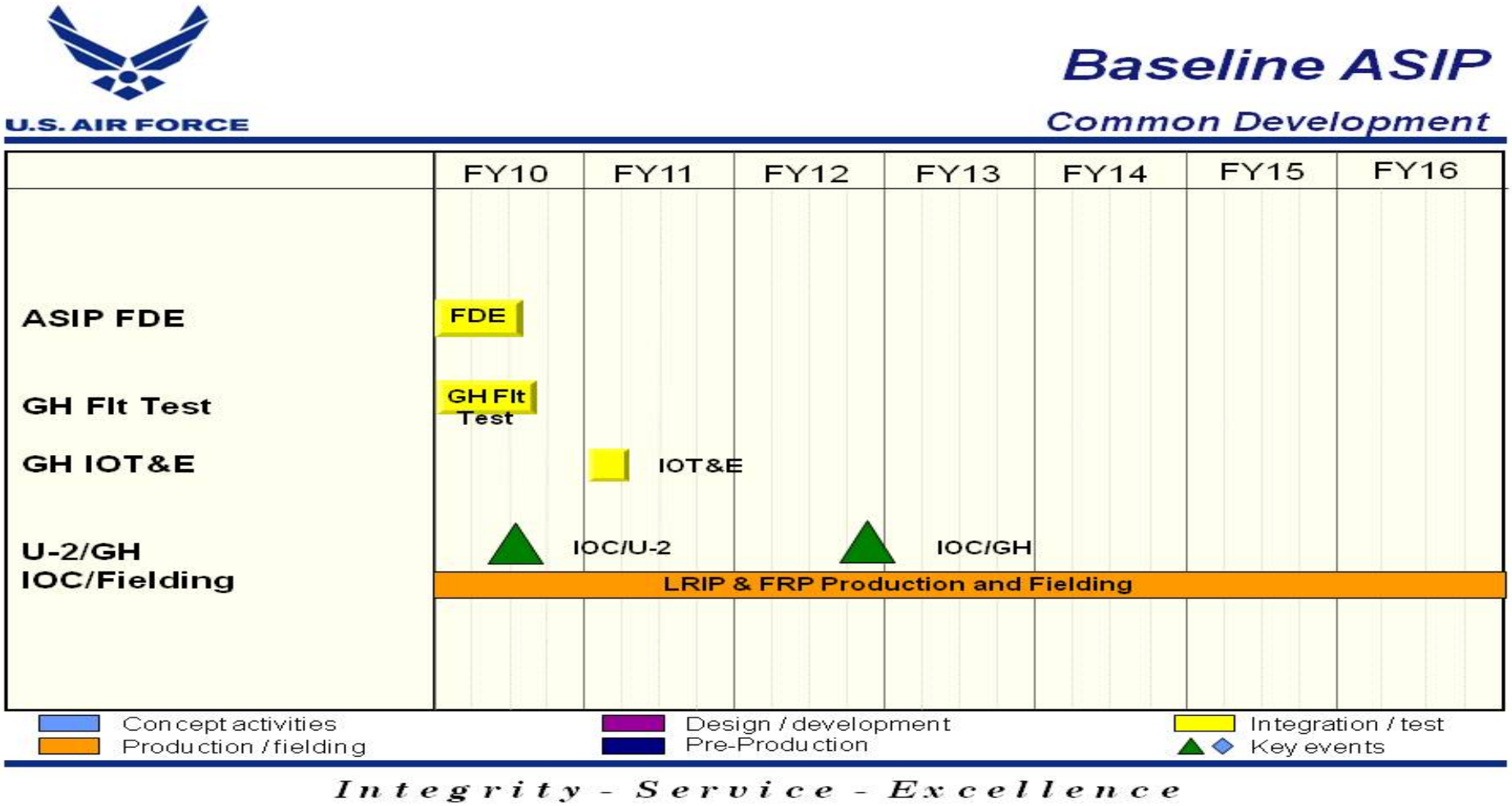

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	**PROJECT** 675183: *Common Development (Airborne SIGINT Development - Common Development)*

U.S. AIR FORCE

ASIP Upgrades (Increment 1)

Common Development

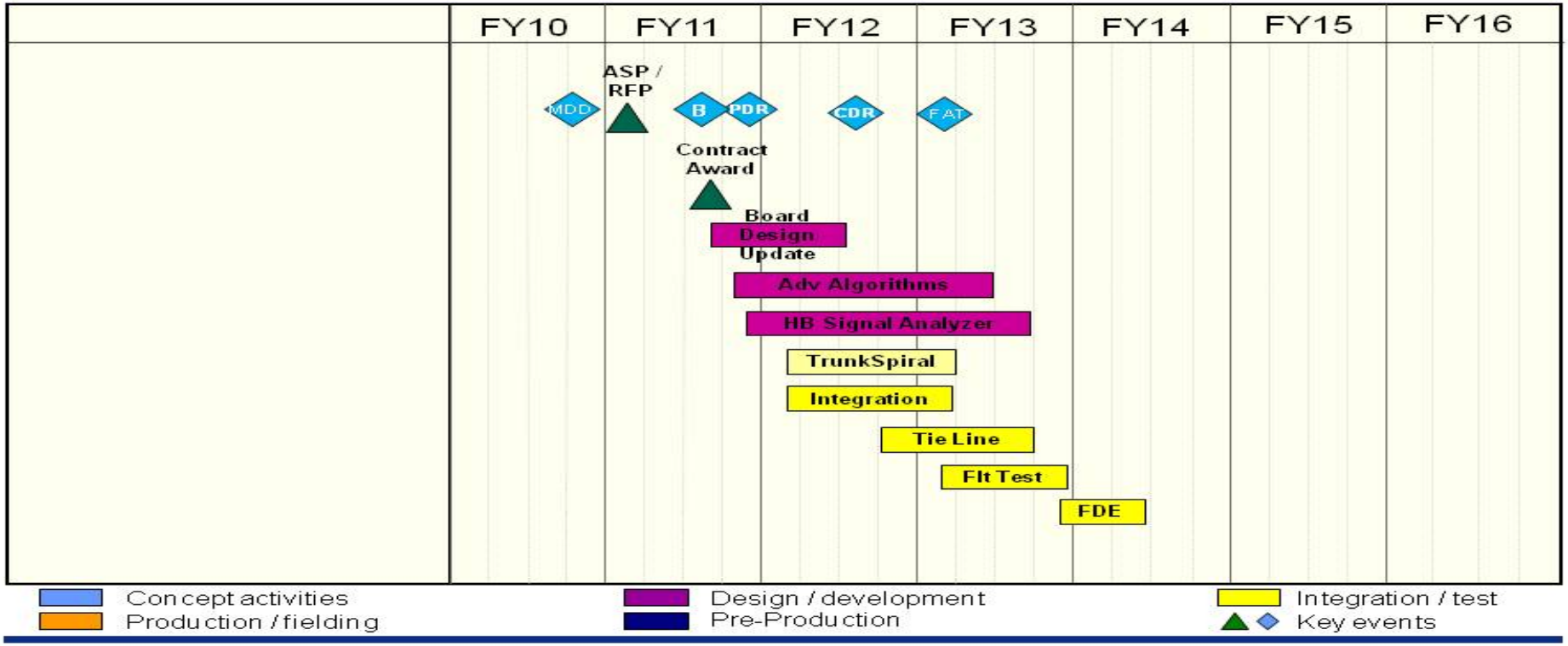

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	**PROJECT** 675183: *Common Development (Airborne SIGINT Development - Common Development)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ASIP GH Force Development Evaluation	1	2010	3	2010
ASIP GH Flight Test	1	2010	3	2010
ASIP U-2 IOC	2	2010	3	2010
ASIP IOT&E	1	2011	2	2011
ASIP GH IOC	4	2012	4	2012
U-2/GH Production and Fielding	1	2010	4	2016
ASIP Upgrades	4	2010	4	2014

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675184: *RQ-4 (Airborne SIGINT Development - Global Hawk*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675184: *RQ-4 (Airborne SIGINT Development - Global Hawk*	22.596	15.083	3.608	-	3.608	0.996	4.066	5.968	7.063	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) This project supports sensor integration and test, flight test, design studies, engineering analysis and non-recurring engineering of the air and ground components for the Global Hawk SIGINT sensors. Also identifies suitable replacements for components affected by diminishing manufacturing sources. This project provides the warfighter with a near-term, increased combat capability. Enhancements are implemented as soon as technology and risk achieve satisfactory levels. Capability improvements will be inserted into the Airborne Signals Intelligence Program (ASIP) family of sensors through individual development efforts that exploit signals of interest identified as service priorities by the Air Force SIGINT Capabilities Working Group Funding includes completion of developmental logistics tasks associated with the design, development, and integration of ASIP and the ASIP Depot standup. Additional requirements include the Logistics Support Analysis (LSA) Taskings which consists of design and development of support equipment, technical orders, training courses/aids/devices, and shipping containers common to ASIP for U-2 and Global Hawk. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

(U) The Baseline ASIP sensor is an ACAT 1D program. Totals include funding for the PRCP Project Number 375, Baseline ASIP. Baseline ASIP completes its development in the ASE PE in FY 2011. Projects 675183 (Common Development) and 675184 (RQ-4) include development funds for this sensor. Prior year estimate for total development cost was $508M and this is still valid. $19M will be spent in FY 11 in the ASE PE to complete development. Production will be in the RQ-4 PE (0305220F).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: RQ-4 SIGINT	22.596	15.083	3.608	-	3.608
Description: Design, develop, test SIGINT capabilities for ASIP sensors, support equipment, technical orders, training, shipping containers, and support the ASIP depot stand-up.					
FY 2010 Accomplishments: Completed the development and testing of the ASIP on the Global Hawk. Continued the Logistics contract effort, to include awarding Phase 2 of the Logistics Task contract. Delivered additional Flight Line Support Equipment and peculiar support equipment and shipping containers. Developed Type 1 operator and maintenance training courses. Identified and purchased diminishing manufacturing source items.					
FY 2011 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675184: *RQ-4 (Airborne SIGINT Development - Global Hawk*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Complete ASIP Global Hawk Initial Operational and Test Evaluation (IOT&E). Continue the Logistics contract effort, including updating technical data and support equipment. Support the ASIP depot standup. Correct logistical deficiencies found in the Global Hawk Initial Operational and Test Evaluation (IOT&E). Start the Upgrades Program to begin the development of new signal capabilities to be inserted into the correct ASIP sensors. ***FY 2012 Base Plans:*** Will continue the logistics efforts, including updating technical data and support equipment. Support the ASIP depot stand-up. Correct logistic deficiencies found during GH IOT&E. Continue new signal capabilities and enhancement development. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	22.596	15.083	3.608	-	3.608

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• APAF: *PE 0305220F, RQ-4 Sensor Integration - Sensor Development*	800.212	859.244	747.978	0.000	747.978	603.846	551.881	456.596	351.681	Continuing	Continuing

D. Acquisition Strategy

(U) SIGINT capabilities will be integrated on to this platform using an Evolutionary Acquisition approach.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675184: *RQ-4 (Airborne SIGINT Development - Global Hawk*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ASIP Baseline Development	SS/Various	Northrop Grumman Mission Sys:San Jose, CA	51.789	3.000	Jan 2011	-		-		-	Continuing	Continuing	TBD
ASIP Upgrades Development	TBD	Northrop Grumman Mission Sys:San Jose, CA	-	0.122	Nov 2010	2.710	Jan 2012	-		2.710	Continuing	Continuing	TBD
ASIP LSA Taskings	Various	Northrop Grumman Mission Sys:San Jose, CA	14.160	11.961	Jan 2011	0.598	Jan 2012	-		0.598	Continuing	Continuing	TBD
		Subtotal	65.949	15.083		3.308		-		3.308			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management, Various Integration Efforts, & Flight Test	Various	TBD:TBD,	0.550	-		0.300		-		0.300	Continuing	Continuing	TBD
		Subtotal	0.550	-		0.300		-		0.300			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675184: *RQ-4 (Airborne SIGINT Development - Global Hawk*

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	66.499	15.083		3.608		-		3.608			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675184: *RQ-4 (Airborne SIGINT Development - Global Hawk*

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RQ-4 ASE

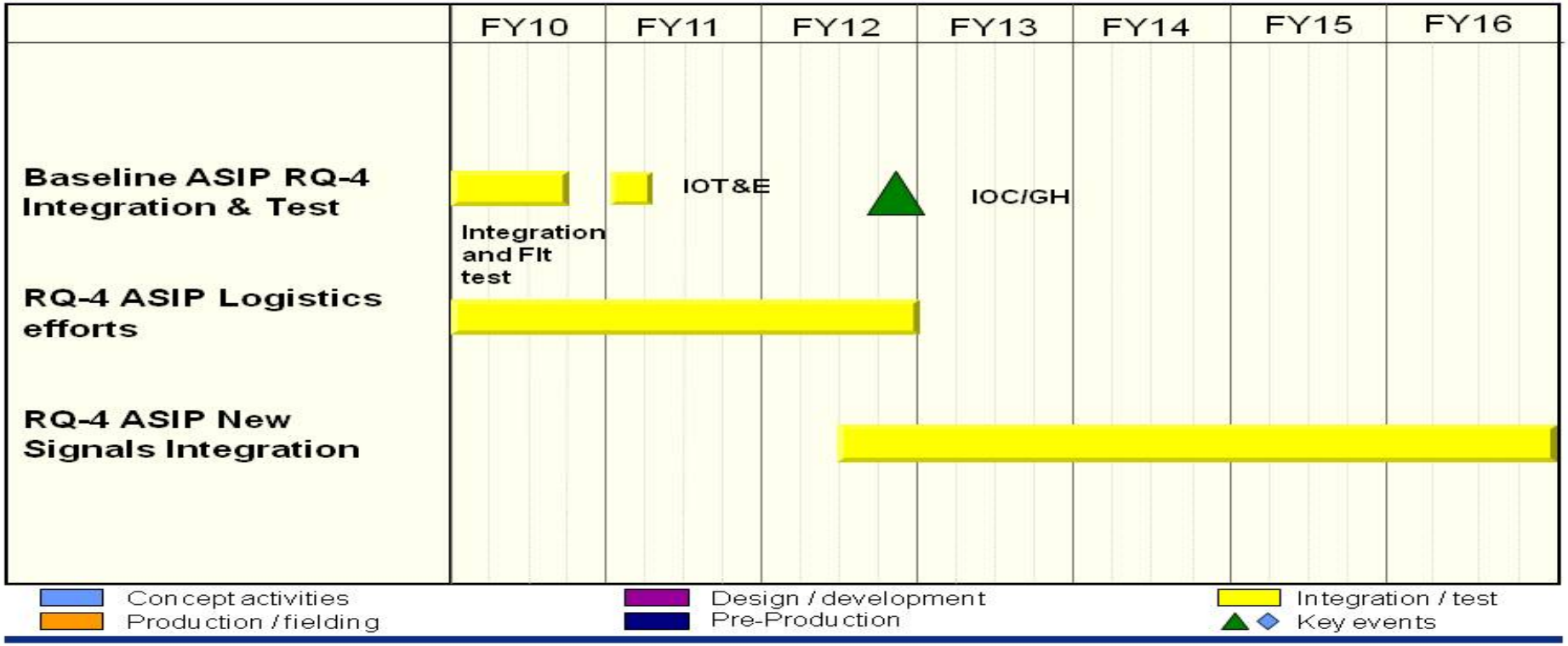

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	**PROJECT** 675184: *RQ-4 (Airborne SIGINT Development - Global Hawk*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Baseline ASIP RQ-4 Integration and Test	1	2010	2	2011
RQ-4 ASIP Logistics Efforts	1	2010	4	2012
RQ-4 ASIP New Signals Integration	3	2012	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675185: *Compass Bright (Airborne SIGINT Development - Compass Bright)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675185: *Compass Bright (Airborne SIGINT Development - Compass Bright)*	11.363	6.022	6.169	-	6.169	6.312	6.470	6.667	6.784	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) The COMPASS BRIGHT program develops, demonstrates, and rapidly transitions advanced Air Force-specific SIGINT and Radio Frequency (RF) measurement and signature intelligence (MASINT) capabilities against emerging and future target signals. It is the only USAF program that pursues SIGINT and RF MASINT technology transition. The COMPASS BRIGHT program objective is to develop technologies for application in SIGINT and RF MASINT systems/subsystems. Acquisition and production of these developed technologies will occur within the appropriate platform programs. COMPASS BRIGHT projects are selected through a data call process whereby the USAF evaluates proposals from the labs and industry to select those projects that are most promising. This process is completed the year prior to award. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: SIGINT Tech Devlopment	11.363	6.022	6.169	-	6.169
Description: Develops projects in the Signals Intelligence and Radio Frequency Measurement & Signature Intelligence areas for transition to platforms.					
FY 2010 Accomplishments: Initiated, continued or completed various SIGINT projects to include search and intercept improvements					
FY 2011 Plans: Initiate, continue or complete various SIGINT projects to include search and intercept improvements					
FY 2012 Base Plans: Will initiate, continue or complete various SIGINT projects to include search and intercept improvements					
FY 2012 OCO Plans:					
Accomplishments/Planned Programs Subtotals	11.363	6.022	6.169	-	6.169

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675185: *Compass Bright (Airborne SIGINT Development - Compass Bright)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

(U) Ongoing COMPASS BRIGHT technology development and demonstration contracts will continue through existing laboratory relationships and other existing contractual vehicles, with future development projects emphasizing full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675185: *Compass Bright (Airborne SIGINT Development - Compass Bright)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	Various	Multiple:Various,	19.928	5.336	Oct 2010	5.476	Oct 2011	-		5.476	Continuing	Continuing	TBD
		Subtotal	19.928	5.336		5.476		-		5.476			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ASC/WI (ISR and SOF Directorate)	Various	TBD:TBD,	1.520	0.686	Oct 2010	0.693	Oct 2011	-		0.693	Continuing	Continuing	TBD
		Subtotal	1.520	0.686		0.693		-		0.693			

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	21.448	6.022		6.169		-		6.169			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675185: *Compass Bright (Airborne SIGINT Development - Compass Bright)*

U.S. AIR FORCE

Compass Bright

First Sheet

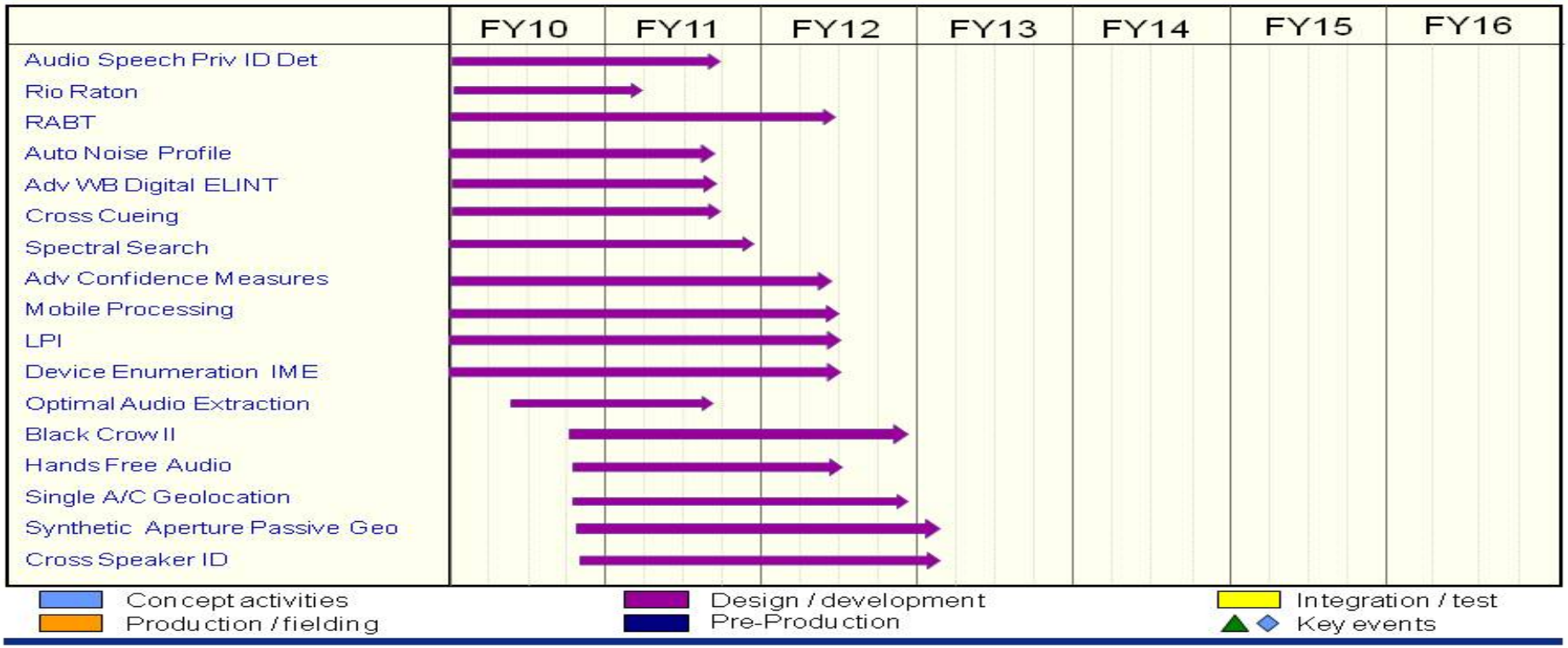

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675185: *Compass Bright (Airborne SIGINT Development - Compass Bright)*

U.S. AIR FORCE

Compass Bright
2nd Sheet

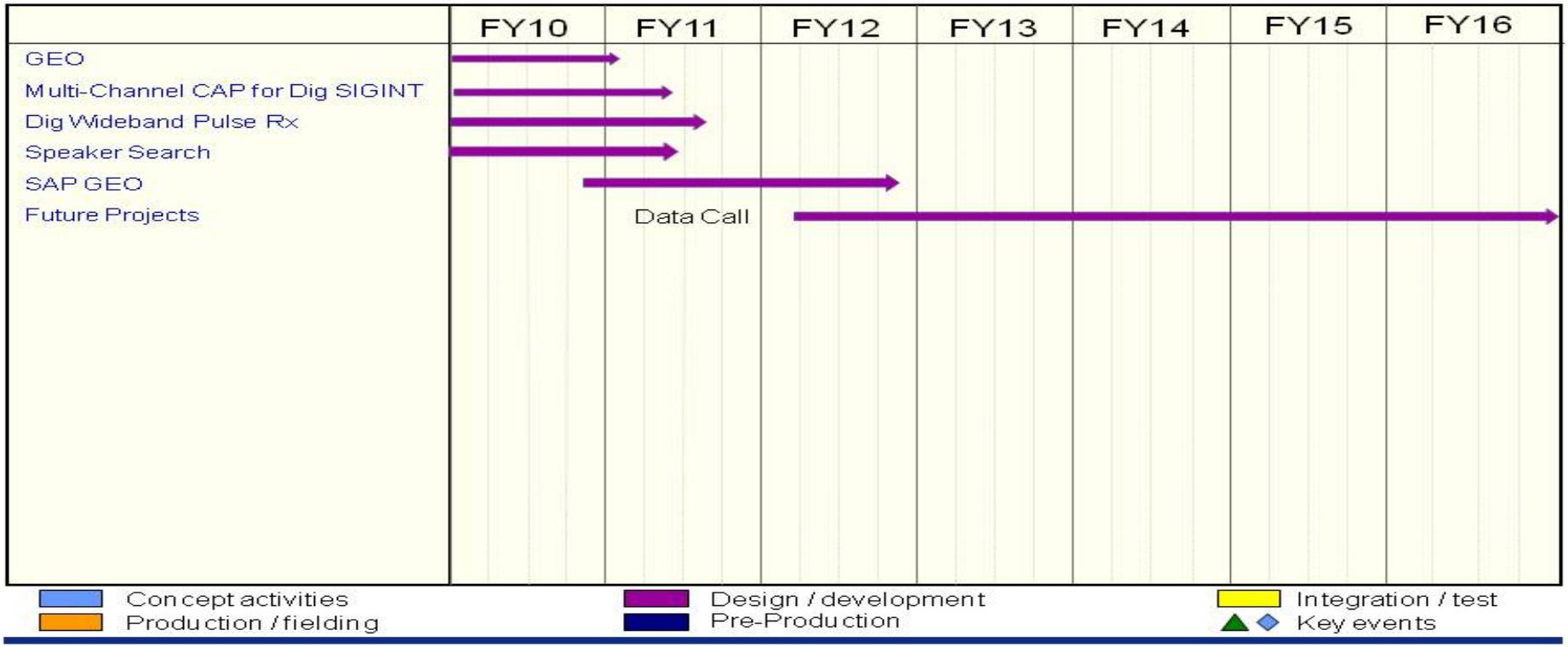

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	**PROJECT** 675185: *Compass Bright (Airborne SIGINT Development - Compass Bright)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Audio Speech Privacy ID Detector	1	2010	3	2011
Rio Raton Digital Receiver	1	2010	2	2011
Rapid Audio Batch Toolkit (RABT)	1	2010	2	2012
Auto Noise Profile	1	2010	3	2011
Advanced Wideband Digital ELINT	1	2010	3	2011
Cross Cueing	1	2010	3	2011
Spectral Search	1	2010	4	2011
Adv Confidence Measures	1	2010	2	2012
Mobile Processing	1	2010	2	2012
LPI Search and Copy	1	2010	2	2012
Device Enumeration (IMIE)	1	2010	2	2012
Optimum Audio Extraction	2	2010	3	2011
Black Crow II	4	2010	4	2012
Hands Free Audio Processing	4	2010	2	2012
Single Aircraft Geolocation	4	2010	4	2012
Cross INT Speaker ID	4	2010	1	2013
GEO	1	2010	1	2011
Multi-Channel CAP for Digital SIGINT	1	2010	1	2011
Digital Wideband Pulse Receiver	1	2010	3	2011
Speaker Search	1	2010	2	2011
SAP GEO	4	2010	4	2012
Future SIGINT Projects	2	2012	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675186: *Special Programs (Airborne SIGINT Development - Special Platforms)*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675186: *Special Programs (Airborne SIGINT Development - Special Platforms)*	6.635	12.036	0.498	-	0.498	0.946	2.588	12.140	8.734	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) This project supports special SIGINT studies as well as the development and integration of advanced SIGINT capabilities on Senior Scout, Liberty Project Aircraft (MC-12W), NCCT SIGINT projects approved by the SCWG, and other special projects. Through extensive utilization of COTS-based solutions to fielding of needed capabilities, it also incurs the need for continuous diminishing manufacturing sources integration efforts consistent with the COTS technology cycle. Senior Scout development efforts will include antenna improvements, sensitivity upgrades, and radio frequency distribution upgrades. Additionally, development will begin to allow this platform to network with other SIGINT assets to increase collection accuracy. This project provides the warfighter with a near term combat capability with increased capability improvements accomplished as soon as technology and risk achieve satisfactory levels. Sensors will be integrated and tested on various platforms as funding permits. Budget Activity Justification: This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: SIGINT Development	6.635	12.036	0.498	-	0.498
Description: Develop SIGINT capabilities for special programs such as SENIOR SCOUT, Liberty Project Aircraft, Network Centric Collaborative Targeting (NCCT) projects, small UAVs and others. ***FY 2010 Accomplishments:*** Develop various SIGINT capabilities for integration. ***FY 2011 Plans:*** Develop various SIGINT capabilities for integration. ***FY 2012 Base Plans:*** Develop various SIGINT capabilities for integration. ***FY 2012 OCO Plans:*** Develop various SIGINT capabilities for integration.					
Accomplishments/Planned Programs Subtotals	6.635	12.036	0.498	-	0.498

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675186: *Special Programs (Airborne SIGINT Development - Special Platforms)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0503115F: *Tactical Cryptologic Units ANG*	18.901	3.963	3.593	0.000	3.593	7.163	6.440	6.617	6.736	Continuing	Continuing

D. Acquisition Strategy

(U) Signals Intelligence (SIGINT) capabilities will be integrated on to various classified platforms using an Evolutionary Acquisition approach.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675186: *Special Programs (Airborne SIGINT Development - Special Platforms)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SIGINT Sensor Development-1	SS/Various	Lockheed Martin IS&GS:Denver, CO	5.756	1.100	Oct 2010	-		-		-	0.000	6.856	6.856
SIGINT Sensor Development-2	SS/Various	Zeta Associates:Fairfax VA,	2.882	1.513	Oct 2010	0.015	Oct 2010	-		0.015	Continuing	Continuing	TBD
Low Level Signal Detection	SS/Various	Lockheed Martin IS&GS:Denver, CO	2.849	1.812	Dec 2010	0.363	Nov 2011	-		0.363	Continuing	Continuing	TBD
Wideband Receivers	SS/Various	Lockheed Martin IS&GS:Denver, CO	1.664	3.000	Dec 2010	-		-		-	0.000	4.664	4.664
Sensor Fusion/Dissemination	SS/Various	Lockheed Martin IS&GS:Denver, CO	1.249	2.030	Jan 2011	0.007	Jan 2011	-		0.007	0.000	3.286	3.286
SIGINT NCCT Network Centric Collaborative Targeting	SS/Various	L-3 ComCept:Rockwall, TX	6.482	-		-		-		-	0.000	6.482	6.482
Sensor Development-3	SS/FFP	VaST:Warrenton, VA	0.182	2.130	Nov 2010	-		-		-	0.000	2.312	2.312
		Subtotal	21.064	11.585		0.385		-		0.385			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	PROJECT 675186: *Special Programs (Airborne SIGINT Development - Special Platforms)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMA	Various	TBD:TBD,	0.428	0.451	Jan 2011	0.113	Jan 2012	-		0.113	Continuing	Continuing	TBD
		Subtotal	0.428	0.451		0.113		-		0.113			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	21.492	12.036		0.498		-		0.498			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	**PROJECT** 675186: *Special Programs (Airborne SIGINT Development - Special Platforms)*

U.S. AIR FORCE

Special Projects ASE Schedule

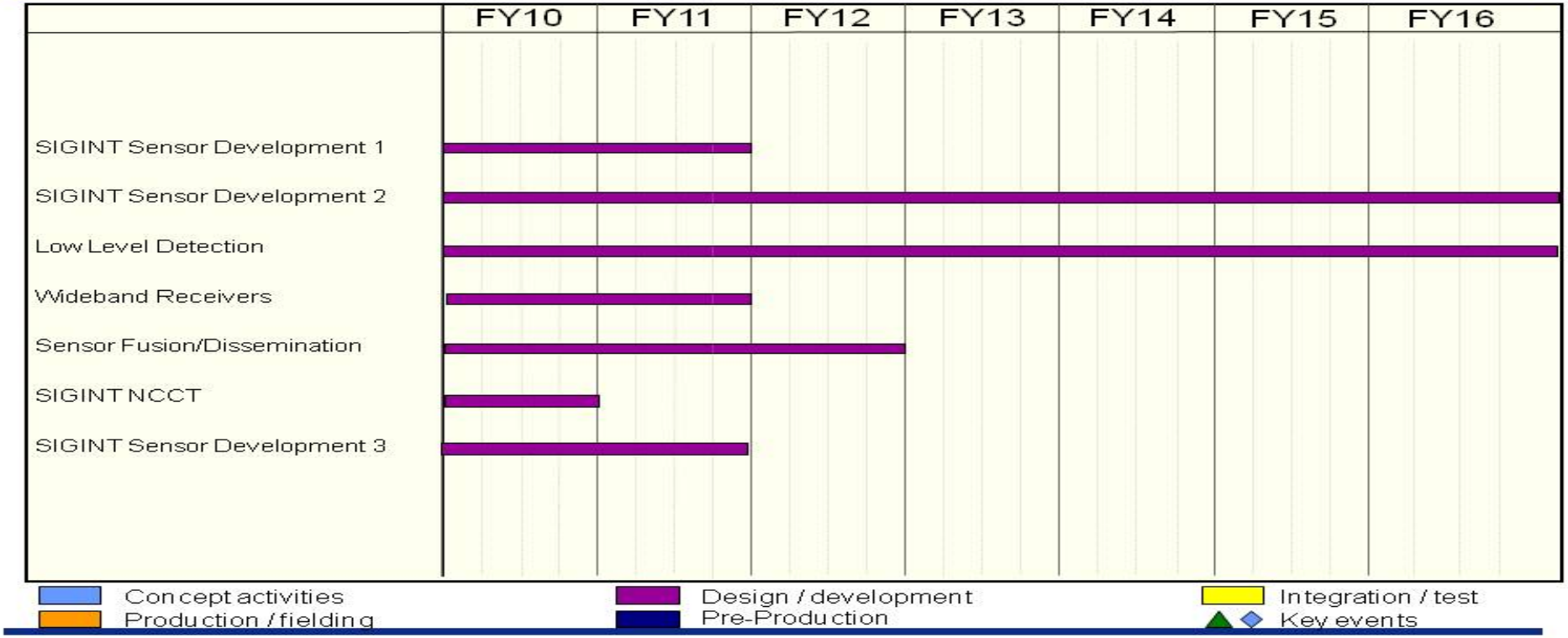

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0304260F: *Airborne SIGINT Enterprise (JMIP)*	**PROJECT** 675186: *Special Programs (Airborne SIGINT Development - Special Platforms)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
SIGINT Sensor Development 1	1	2010	4	2011
SIGINT Sensor Development 2	1	2010	4	2016
Low Level Signal Detection	1	2010	4	2016
Wideband Receiver	1	2010	4	2011
Sensor Fusion/Dissemination	1	2010	4	2012
SIGINT NCCT	1	2010	4	2010
SIGINT Sensor Development 3	1	2010	4	2011

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0305099F: *Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	6.754	5.708	4.604	-	4.604	4.549	4.525	4.299	4.404	Continuing	Continuing
674689: *Global Access Architecture*	6.754	5.708	4.604	-	4.604	4.549	4.525	4.299	4.404	Continuing	Continuing

A. Mission Description and Budget Item Justification

The program funding includes reductions for overhead efficiencies that are not intended to impact program content. The efficiencies reductions total $0.766M in FY12.

Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM): This Air Force (AF) program centralizes engineering and technical expertise for CNS capability acquisitions and modifications to ensure that all AF aircraft and Unmanned Aerial Systems (UAS) comply with appropriate CNS/ATM and Navigation Safety performance standards and requirements enabling access to U.S. and international nation/state managed airspace. The Aerospace Management Systems Division (AMSD) supports AF aircraft and UAS CNS/ATM acquisitions as the AF's centralized focal point (Center of Excellence) for identifying, analyzing, and evaluating internationally accepted civil aviation authority operational airspace rules, procedures and requirements worldwide. This group of experts works to identify, analyze, and evaluate the technical performance standards and requirements of the prescribed CNS capabilities and assist platform program offices in the design and integration of the capabilities required to ensure access to civil airspace worldwide. Department of Defense policy states that military platforms conducting peacetime operations will conform to applicable rules to ensure interoperability and transparency within national and international airspace. AMSD verifies that the system's end-to-end performance for each CNS capability integrated into AF platforms complies with these internationally accepted rules and standards. Per AFPD 63-1 and AFI 63-1301, AMSD will develop and maintain CNS/ATM performance matrices used to identify specific CNS/ATM requirements and will provide acquisition and engineering support services through the entire acquisition management effort to include development of technical architectures, program management reviews and test planning for each AF platform. Furthermore, AMSD will develop and award Indefinite Delivery/Indefinite Quantity contracts for centralized procurement and sustainment of CNS/ATM and Nav Safety products and promote commonality of CNS equipment and architectures between platforms. AMSD will also participate in the development of Operational Safety, Suitability and Effectiveness assurance and Airworthiness Certification Plans. Dual-use capabilities of avionics to satisfy both civil CNS/ATM and military unique capability requirements will be explored as well as interoperability enhancements to expand net-centric concepts. AMSD will facilitate and participate in development and testing of CNS box-level prototypes. AMSD conducts studies and prototyping efforts to ensure AF aircraft are postured to meet current and evolving civil standards leading to the concept of "free flight." AMSD also provides acquisition and engineering support to the DoD Lead Service Office for the interagency Next Generation Air Transportation System (NextGen) initiative. NextGen, and similar global initiatives (e.g. Single European Sky), will impact all AF platforms. AMSD will develop and coordinate CNS/ATM architectures with the FAA and other regulatory agencies to allow unrestricted access for UAS into global civil airspace. AMSD will identify UAS equipage roadmaps, facilitate technology development and advocate policy changes to allow unfettered airspace access.

BA7- This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305099F: *Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	5.654	5.708	5.429	-	5.429
Current President's Budget	6.754	5.708	4.604	-	4.604
Total Adjustments	1.100	-	-0.825	-	-0.825
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	1.125	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.025	-	-0.825	-	-0.825

Change Summary Explanation

FY10:

(1) $1.125M - Reprogramming for emerging PMA requirements to provide direct engineering support to adequately address avionics acquisition and integration ensuring installed capabilities meet appropriate civil aviation requirements for access to global airspace. This added expertise is needed to address unforecasted engineering support requirements of Air Force aircraft/programs.

(2) -$0.025M - Public Law 111-118, Section 8097, Economic Assumptions.

FY12:

(1) The program funding includes reductions for overhead efficiencies that are not intended to impact program content. The efficiencies reductions total $0.766M in FY12.

(2) -$0.059M - Economic Adjustments

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305099F: *Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)*	PROJECT 674689: *Global Access Architecture*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
674689: *Global Access Architecture*	6.754	5.708	4.604	-	4.604	4.549	4.525	4.299	4.404	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The program funding includes reductions for overhead efficiencies that are not intended to impact program content. The efficiencies reductions total $0.766M in FY12.

Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM): This Air Force (AF) program centralizes engineering and technical expertise for CNS capability acquisitions and modifications to ensure that all AF aircraft and Unmanned Aerial Systems (UAS) comply with appropriate CNS/ATM and Navigation Safety performance standards and requirements enabling access to U.S. and international nation/state managed airspace. The Aerospace Management Systems Division (AMSD) supports AF aircraft and UAS CNS/ATM acquisitions as the AF's centralized focal point (Center of Excellence) for identifying, analyzing, and evaluating internationally accepted civil aviation authority operational airspace rules, procedures and requirements worldwide. This group of experts works to identify, analyze, and evaluate the technical performance standards and requirements of the prescribed CNS capabilities and assist platform program offices in the design and integration of the capabilities required to ensure access to civil airspace worldwide. Department of Defense policy states that military platforms conducting peacetime operations will conform to applicable rules to ensure interoperability and transparency within national and international airspace. AMSD verifies that the system's end-to-end performance for each CNS capability integrated into AF platforms complies with these internationally accepted rules and standards. Per AFPD 63-1 and AFI 63-1301, AMSD will develop and maintain CNS/ATM performance matrices used to identify specific CNS/ATM requirements and will provide acquisition and engineering support services through the entire acquisition management effort to include development of technical architectures, program management reviews and test planning for each AF platform. Furthermore, AMSD will develop and award Indefinite Delivery/Indefinite Quantity contracts for centralized procurement and sustainment of CNS/ATM and Nav Safety products and promote commonality of CNS equipment and architectures between platforms. AMSD will also participate in the development of Operational Safety, Suitability and Effectiveness assurance and Airworthiness Certification Plans. Dual-use capabilities of avionics to satisfy both civil CNS/ATM and military unique capability requirements will be explored as well as interoperability enhancements to expand net-centric concepts. AMSD will facilitate and participate in development and testing of CNS box-level prototypes. AMSD conducts studies and prototyping efforts to ensure AF aircraft are postured to meet current and evolving civil standards leading to the concept of "free flight." AMSD also provides acquisition and engineering support to the DoD Lead Service Office for the interagency Next Generation Air Transportation System (NextGen) initiative. NextGen, and similar global initiatives (e.g. Single European Sky), will impact all AF platforms. AMSD will develop and coordinate CNS/ATM architectures with the FAA and other regulatory agencies to allow unrestricted access for UAS into global civil airspace. AMSD will identify UAS equipage roadmaps, facilitate technology development and advocate policy changes to allow unfettered airspace access.

BA7- This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305099F: *Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)*	PROJECT 674689: *Global Access Architecture*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: CNS/ATM	6.754	5.708	4.604	-	4.604
Description: Supporting platform program offices in their efforts to ensure the platform meets the performance standards to ensure access to airspace to conduct operations, assessing CNS capability compliance with nation/state rule making, acquistion of ID/IQ CNS avionics equipment components, Nav/Safety and GPS/NAVWAR integration and interoperability evaluations ***FY 2010 Accomplishments:*** Gather data to build safety case for unrestricted UAS operations at Palmdale, CA/Grand Forks AFB, ND. UAS equipage roadmaps, technology development and policy changes will allow unfettered airspace access. CNS/ATM architectures will be developed and coordinated with the FAA and other regulatory agencies to allow unrestricted access for UAS into global civil airspace. Continuation of operational requirements analysis, demonstration, and evaluation of CNS/ATM, as well as system architecture design and development. ***FY 2011 Plans:*** CNS/ATM architectures will be developed and coordinated with the FAA and other regulatory agencies to allow unrestricted access for UAS into global civil airspace. UAS equipage roadmaps, technology development and policy changes will allow unfettered airspace access. Continuation of operational requirements analysis, demonstration, and evaluation of CNS/ATM, as well as system architecture design and development. Gather data to build safety case for unrestricted UAS operations at Palmdale, CA/Grand Forks AFB, ND. ***FY 2012 Base Plans:*** CNS/ATM architectures will be developed and coordinated with the FAA and other regulatory agencies to allow unrestricted access for UAS into global civil airspace. UAS equipage roadmaps, technology development and policy changes will allow unfettered airspace access. Continuation of operational requirements analysis, demonstration, and evaluation of CNS/ATM, as well as system architecture design and development. Gather data to build safety case for unrestricted UAS operations at Palmdale, CA/Grand Forks AFB, ND. ***FY 2012 OCO Plans:*** Not applicable					
Accomplishments/Planned Programs Subtotals	6.754	5.708	4.604	-	4.604

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305099F: *Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)*	PROJECT 674689: *Global Access Architecture*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

AMSD CNS/ATM Acquisition Strategy guides CNS and NAV safety equipment procurements for AF aircraft/UAS single managers. This strategy ensures systems standardization and interoperability and directly supports the airworthiness certification of AF aircraft/UAS that operate in national and international air traffic environments. The AMSD will collaborate to provide technical support and expertise, execute system performance assessments and will interface with product/support centers, battle labs, and DoD research facilities in the execution of the assigned task. Program research and development agreements, cooperative research and development agreements, and Indefinite Delivery/Indefinite Quantity (ID/IQ) contracts will be competitively awarded.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305099F: *Communication, Navigation, Surveillance/Air Traffic Management (CNS/ ATM)*	PROJECT 674689: *Global Access Architecture*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop systems to monitor avionics equipage of US military aircraft, participate in US/international specification and standards-setting, and develop resource material in support of CNS/ATM	C/TBD	MIT/Lincoln Laboratory:Lexington, MA	1.992	1.683	Jan 2011	1.358	Jan 2012	-		1.358	Continuing	Continuing	0.000
Providing various technical support, operational requirments, and assessing CNS cabalibilities	C/TBD	MITRE Corporation:Bedford, MA	2.871	2.426	Oct 2010	1.957	Oct 2011	-		1.957	Continuing	Continuing	0.000
Provide various technical support-A&AS-ETASS	C/TBD	Jacobs Technology:Lincoln, MA	1.391	1.176	Dec 2010	0.948	Dec 2011	-		0.948	Continuing	Continuing	0.000
		Subtotal	6.254	5.285		4.263		-		4.263			0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Provide program office support-A&AS-PASS	C/TBD	Quantech Services:Bedford, MA	0.099	0.084	Dec 2010	0.068	Dec 2011	-		0.068	Continuing	Continuing	0.000
Provide program office support-A&AS-SCS	C/TBD	Tecolote:Bedford, MA	0.034	0.029	Nov 2010	0.023	Nov 2011	-		0.023	Continuing	Continuing	0.000
Program Office Support	Various	TBD:Bedford, MA	0.367	0.310	Oct 2010	0.250	Aug 2012	-		0.250	Continuing	Continuing	0.000
		Subtotal	0.500	0.423		0.341		-		0.341			0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305099F: *Communication, Navigation, Surveillance/Air Traffic Management (CNS/ ATM)*	PROJECT 674689: *Global Access Architecture*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	6.754	5.708		4.604		-		4.604			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305099F: *Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)*	**PROJECT** 674689: *Global Access Architecture*

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CNS/ATM Program Schedule

U.S. AIR FORCE

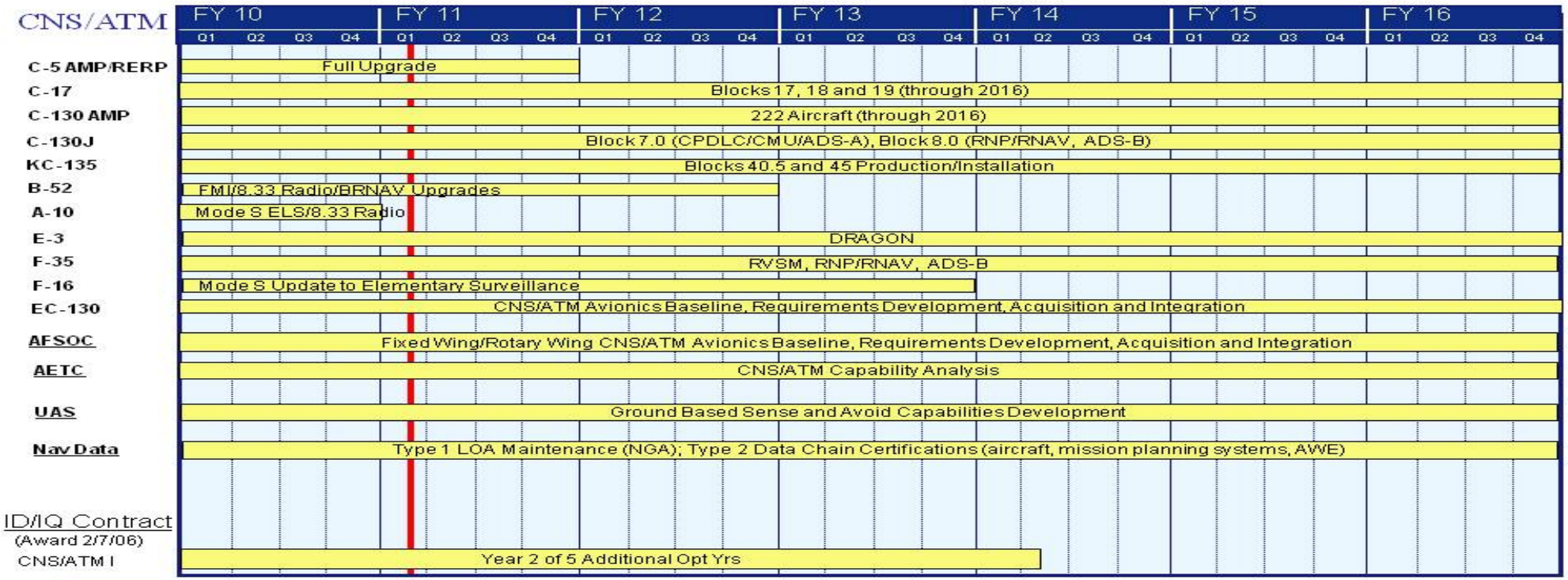

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305099F: *Communication, Navigation, Surveillance/Air Traffic Management (CNS/ ATM)*	**PROJECT** 674689: *Global Access Architecture*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Continue support for C-5 AMP/RERP upgrade	1	2010	4	2011
Continue supprot for C-17 Block 17/18/19 upgrades	1	2010	4	2016
Continue support for C-130 AMP upgrade	1	2010	4	2016
Continue support to C-130J Block 7/8 upgrades	1	2010	4	2016
Continue support for KC-135 Block 40.5/45 upgrades	1	2010	4	2016
Continue support for B-52 FM/8.33 Radio/BRNAV upgrades	1	2010	4	2012
Continue support for E-3 DRAGON upgrade	1	2010	4	2016
Continue support for F-35 RSVM, RNP/RNAV, ADS-B upgrades	1	2010	4	2016
Continue support for F-16 Mode S ELS upgrade	1	2010	4	2013
Continue support for EC-130 CNS/ATM avionics, requirements, acquisition, and integration	1	2010	4	2016
Continue CNS/ATM requirements development, acquisition, and integration for AFSOC fixed/rotary wing aircraft	1	2010	4	2016
Continue AETC CNS/ATM capability analysis	1	2010	4	2016
Continue UAS ground based sense and avoid capabilities development	1	2010	4	2016
Continue Nav/Safety and GPS/NAVWAR integration and interoperability evaluations	1	2010	4	2016
Continue acquisition of ID/IQ CNS avionics equipment and components	1	2010	2	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0305103F: *Cyber Security Initiative*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	1.992	2.030	2.026	-	2.026	2.051	2.048	2.049	2.085	Continuing	Continuing
671931: *TECH SURVEIL COUNTER MEAS EQPT*	1.992	2.030	2.026	-	2.026	2.051	2.048	2.049	2.085	Continuing	Continuing

A. Mission Description and Budget Item Justification

The DoD Cyber Crime Center (DC3) was created as a DoD center of excellence to efficiently organize, equip, train, and employ scarce resources to more effectively address the proliferation of computer crimes affecting the DoD. DC3 has a digital forensics laboratory, training program, institute, and National Cyber Investigative Joint Task Force Analytical Group. To enable its operations, through the Defense Cyber Crime Institute (DCCI), DC3 will remain on the leading edge of computer technologies and techniques through research, development, testing and evaluation applied to digital evidence processing and computer forensic analysis; and by conducting liaison and by partnering with governmental, university, and private industry computer security officials. DC3 will develop imaging tools, steganalysis and stegextraction tools, and password over-ride tools. These software tools will enable DC3 to increase the probability of data recovery that would otherwise remain undetected. The Intrusions/Intruders Signature Program (IISP) provides for the R&D of products and technologies that detect trace and profile hostile cyber adversaries. This capability provides network monitoring and the framework for sharing and automating reverse engineering techniques. Computer Incident Batch Oriented Recursive Examination (CIBORE) is used to aid the counterintelligence and law enforcement communities to respond to computer intrusions. It is also a data reduction tool that takes a large volume of data, identifies the known “good” and “bad” files and eliminates them from consideration, leaving several GBs of files as candidate malicious code files. This program is categorized in Budget Activity (BA) 7 because it supports the development efforts of operational systems.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	2.065	2.030	2.033	-	2.033
Current President's Budget	1.992	2.030	2.026	-	2.026
Total Adjustments	-0.073	-	-0.007	-	-0.007
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.073	-			
• Other Adjustments	-	-	-0.007	-	-0.007

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305103F: *Cyber Security Initiative*	PROJECT 671931: *TECH SURVEIL COUNTER MEAS EQPT*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
671931: *TECH SURVEIL COUNTER MEAS EQPT*	1.992	2.030	2.026	-	2.026	2.051	2.048	2.049	2.085	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The DoD Cyber Crime Center (DC3) was created as a DoD center of excellence to efficiently organize, equip, train, and employ scarce resources to more effectively address the proliferation of computer crimes affecting the DoD. DC3 has a digital forensics laboratory, training program, institute, and National Cyber Investigative Joint Task Force Analytical Group. To enable its operations, through the Defense Cyber Crime Institute (DCCI), DC3 will remain on the leading edge of computer technologies and techniques through research, development, testing and evaluation applied to digital evidence processing and computer forensic analysis; and by conducting liaison and by partnering with governmental, university, and private industry computer security officials. DC3 will develop imaging tools, steganalysis and stegextraction tools, and password over-ride tools. These software tools will enable DC3 to increase the probability of data recovery that would otherwise remain undetected. The Intrusions/Intruders Signature Program (IISP) provides for the R&D of products and technologies that detect trace and profile hostile cyber adversaries. This capability provides network monitoring and the framework for sharing and automating reverse engineering techniques. Computer Incident Batch Oriented Recursive Examination (CIBORE) is used to aid the counterintelligence and law enforcement communities to respond to computer intrusions. It is also a data reduction tool that takes a large volume of data, identifies the known “good” and “bad” files and eliminates them from consideration, leaving several GBs of files as candidate malicious code files. This program is categorized in Budget Activity (BA) 7 because it supports the development efforts of operational systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Digital Forensic Tools	1.992	2.030	2.026	-	2.026
Description: Digital Forensic Tools ***FY 2010 Accomplishments:*** Develop and validate tools. ***FY 2011 Plans:*** Develop and validate tools. ***FY 2012 Base Plans:*** Continue to develop and validate tools. ***FY 2012 OCO Plans:*** Not applicable					
Accomplishments/Planned Programs Subtotals	1.992	2.030	2.026	-	2.026

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305103F: *Cyber Security Initiative*	PROJECT 671931: *TECH SURVEIL COUNTER MEAS EQPT*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• O&M: *(PE 0305103)*	14.626	14.675	14.703	0.000	14.703	14.964	14.951	15.001	0.000	Continuing	Continuing

D. Acquisition Strategy

All contracts will be awarded based on full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305103F: *Cyber Security Initiative*	PROJECT 671931: *TECH SURVEIL COUNTER MEAS EQPT*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Digital Forensic Tools	C/FFP	General Dynamics:Lithicum, MD	1.992	2.030	Dec 2011	2.026	Dec 2012	-		2.026	Continuing	Continuing	TBD
		Subtotal	1.992	2.030		2.026		-		2.026			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.992	2.030		2.026		-		2.026			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305103F: *Cyber Security Initiative*	PROJECT 671931: *TECH SURVEIL COUNTER MEAS EQPT*

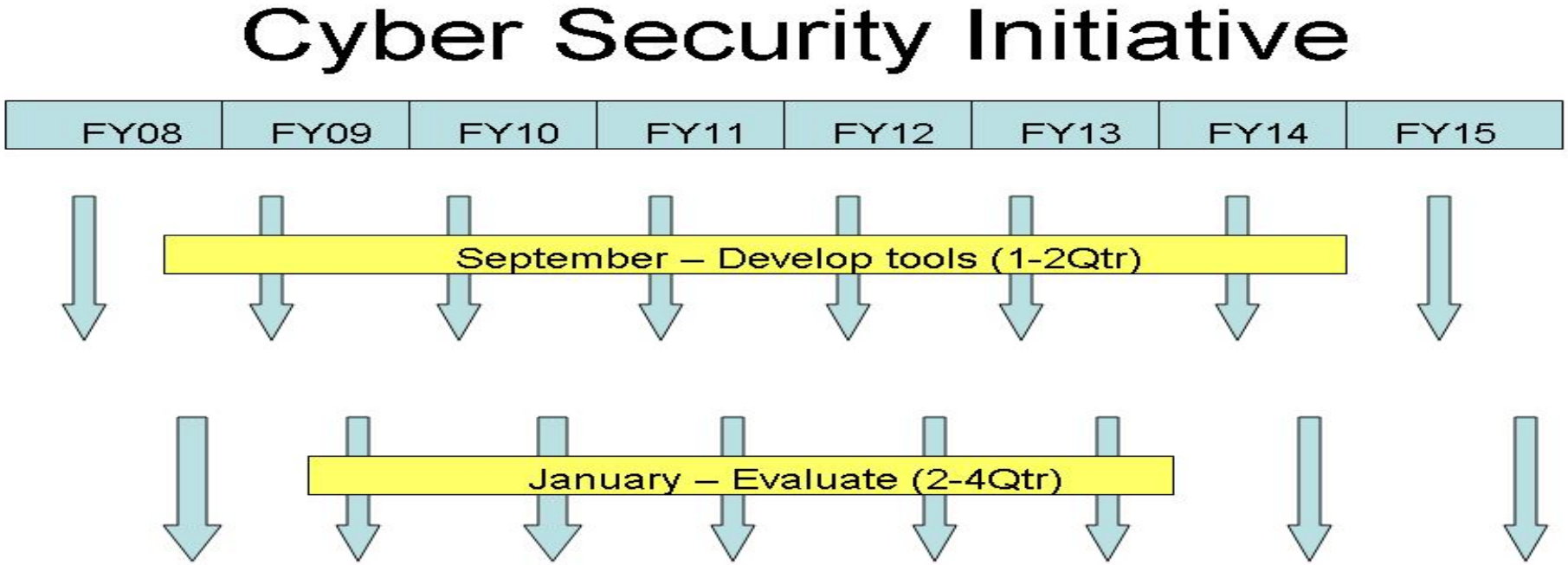

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305103F: *Cyber Security Initiative*	**PROJECT** 671931: *TECH SURVEIL COUNTER MEAS EQPT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Develop software tools	1	2010	2	2014
Evaluate software using digital evidence processing	1	2010	2	2013

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0305105F: *DoD Cyber Crime Center*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.279	0.282	-	0.282	0.285	0.288	0.293	0.300	Continuing	Continuing
671931: *TECH SURVEIL COUNTER MEAS EQPT*	-	0.279	0.282	-	0.282	0.285	0.288	0.293	0.300	Continuing	Continuing

A. Mission Description and Budget Item Justification

Defense Cyber Crime Institute (DCCI) continues RDT&E collaboration efforts with Law Enforcement/Counterintelligence and cyber communities to identify digital forensic technology gaps, research potential solutions and develop tools based on those solutions to address the gaps. DCCI leverage research into cutting edge investigative challenges within the digital forensics discipline to advance efforts aimed at securing networks, to include deep dive research into metamorphic and polymorphic techniques embedded in malicious code.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	0.279	0.283	-	0.283
Current President's Budget	-	0.279	0.282	-	0.282
Total Adjustments	-	-	-0.001	-	-0.001
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.001	-	-0.001

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305105F: *DoD Cyber Crime Center*	PROJECT 671931: *TECH SURVEIL COUNTER MEAS EQPT*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
671931: *TECH SURVEIL COUNTER MEAS EQPT*	-	0.279	0.282	-	0.282	0.285	0.288	0.293	0.300	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Defense Cyber Crime Institute (DCCI) continues RDT&E collaboration efforts with Law Enforcement/Counterintelligence and cyber communities to identify digital forensic technology gaps, research potential solutions and develop tools based on those solutions to address the gaps. DCCI leverage research into cutting edge investigative challenges within the digital forensics discipline to advance efforts aimed at securing networks, to include deep dive research into metamorphic and polymorphic techniques embedded in malicious code.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Forensic Technology Gap	-	0.279	0.282	-	0.282
Description: Intrusion/Intruders Signature Tools ***FY 2010 Accomplishments:*** ***FY 2011 Plans:*** Research potential solutions and develop tools to identify technology gaps. ***FY 2012 Base Plans:*** Continues research of potential solutions and develop tools to identify technology gaps. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	-	0.279	0.282	-	0.282

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Contracts will be awarded based on full and open competition.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305105F: *DoD Cyber Crime Center*	PROJECT 671931: *TECH SURVEIL COUNTER MEAS EQPT*

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305105F: *DoD Cyber Crime Center*	PROJECT 671931: *TECH SURVEIL COUNTER MEAS EQPT*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Intrusion Signature Tools	MIPR	Mitre:MA,	-	0.279	Oct 2011	0.282	Oct 2010	-		0.282	0.000	0.561	0.000
		Subtotal	-	0.279		0.282		-		0.282	0.000	0.561	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	0.279		0.282		-		0.282	0.000	0.561	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305105F: *DoD Cyber Crime Center*	PROJECT 671931: *TECH SURVEIL COUNTER MEAS EQPT*

DoD Cyber Crime Center Schedule

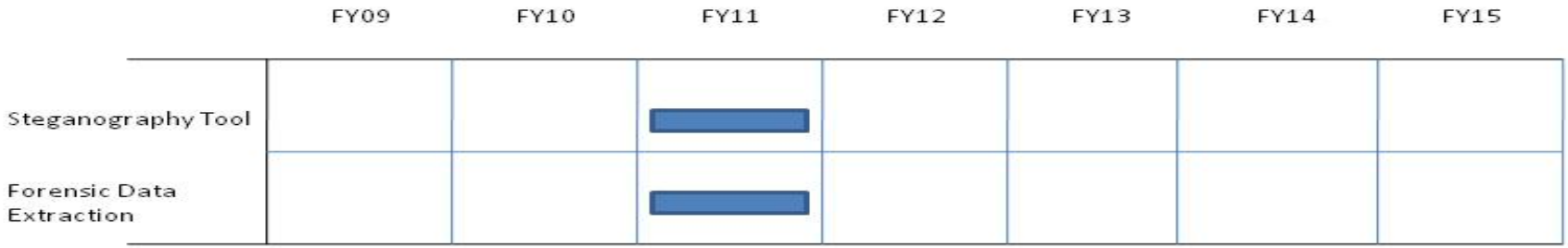

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305105F: *DoD Cyber Crime Center*	PROJECT 671931: *TECH SURVEIL COUNTER MEAS EQPT*

Schedule Details

	Start		End	
Events	Quarter	Year	Quarter	Year
Steganography Tools	1	2010	4	2016
Forensic Data Extraction	1	2010	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0305110F: *Satellite Control Network*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	19.522	21.667	18.337	-	18.337	14.792	14.990	15.149	15.334	Continuing	Continuing
673276: *Satellite Control Network*	19.522	21.667	18.337	-	18.337	14.792	14.990	15.149	15.334	Continuing	Continuing

Note

The program funding includes overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.681M in FY12.

A. Mission Description and Budget Item Justification

The Air Force Satellite Control Network (AFSCN) mission is to command and control space systems and to distribute space system information in support of DoD, Intelligence Community (IC), and Civil operational and RDT&E missions, and other designated users. The AFSCN is a fielded, globally-distributed infrastructure of control centers, Remote Tracking Stations (RTSs), and communications links that provides unique capability for designated users to deploy and operate their satellites. AFSCN provides the highly reliable command and control, communications, and range systems required to support the nation's surveillance, navigation, communications, warning, and weather satellite operations. Air Force Space Command (AFSPC) performs operations, maintenance, modernization, and sustainment of the system to provide operational capabilities validated by a US Strategic Command (USSTRATCOM) Initial Capabilities Document and a Headquarters USAF-approved Operational Requirements Document (ORD). This program element funds the development and acquisition of AFSCN Improvement and Modernization (I&M), an ongoing program of replacements and upgrades which will meet validated USSTRATCOM and AFSPC operational requirements to replace non-standard, unsupportable equipment with more reliable, maintainable, interoperable, and standardized hardware and software. This new equipment is intended to enable AFSPC satellite operations to be performed with reduced hardware/software maintenance costs. The principal efforts within this program are focused on Range Upgrades, Network Operations Upgrades, and associated studies. RANGE UPGRADES: This effort will upgrade the current RTSs. Several integrated efforts are grouped into the RTS Block Change (RBC) effort, which will standardize, automate and make interoperable the remote tracking stations through the replacement of outdated government-unique equipment with standardized equipment and technology in order to reduce failures, correct operational deficiencies, and reduce operating and sustainment costs. Additionally, interoperability efforts to address standards and protocols and external user connectivity are included in this segment. FY12 funds provide system engineering, integration and test support for the RBC efforts to include S-band high power amplifier development. NETWORK OPERATIONS UPGRADES: These critical upgrades improve AFSCN resource management capabilities. FY12 funds provide continued development of the Electronic Scheduling and Dissemination (ESD) 3.0 upgrade. This effort is in Budget Activity 7, Operational System Development, because it supports a fielded system.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305110F: *Satellite Control Network*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	20.825	21.667	19.883	-	19.883
Current President's Budget	19.522	21.667	18.337	-	18.337
Total Adjustments	-1.303	-	-1.546	-	-1.546
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-0.088	-			
• SBIR/STTR Transfer	-1.215	-			
• Other Adjustments	-	-	-1.546	-	-1.546

Change Summary Explanation

FY10: decreased -$1.215M for Small Business Innovative Research
FY12: decreased -$1.546M

The program funding includes overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total $0.681M in FY12.

The FY12 program funding includes reductions for higher AF priorities totaling $0.865M.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305110F: *Satellite Control Network*	PROJECT 673276: *Satellite Control Network*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
673276: *Satellite Control Network*	19.522	21.667	18.337	-	18.337	14.792	14.990	15.149	15.334	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Air Force Satellite Control Network (AFSCN) mission is to command and control space systems and to distribute space system information in support of DoD, Intelligence Community (IC), and Civil operational and RDT&E missions, and other designated users. The AFSCN is a fielded, globally-distributed infrastructure of control centers, Remote Tracking Stations (RTSs), and communications links that provides unique capability for designated users to deploy and operate their satellites. AFSCN provides the highly reliable command and control, communications, and range systems required to support the nation's surveillance, navigation, communications, warning, and weather satellite operations. Air Force Space Command (AFSPC) performs operations, maintenance, modernization, and sustainment of the system to provide operational capabilities validated by a US Strategic Command (USSTRATCOM) Initial Capabilities Document and a Headquarters USAF-approved Operational Requirements Document (ORD). This program element funds the development and acquisition of AFSCN Improvement and Modernization (I&M), an ongoing program of replacements and upgrades which will meet validated USSTRATCOM and AFSPC operational requirements to replace non-standard, unsupportable equipment with more reliable, maintainable, interoperable, and standardized hardware and software. This new equipment is intended to enable AFSPC satellite operations to be performed with reduced hardware/software maintenance costs. The principal efforts within this program are focused on Range Upgrades, Network Operations Upgrades, and associated studies. RANGE UPGRADES: This effort will upgrade the current RTSs. Several integrated efforts are grouped into the RTS Block Change (RBC) effort, which will standardize, automate and make interoperable the remote tracking stations through the replacement of outdated government-unique equipment with standardized equipment and technology in order to reduce failures, correct operational deficiencies, and reduce operating and sustainment costs. Additionally, interoperability efforts to address standards and protocols and external user connectivity are included in this segment. FY12 funds provide system engineering, integration and test support for the RBC efforts to include S-band high power amplifier development. NETWORK OPERATIONS UPGRADES: These critical upgrades improve AFSCN resource management capabilities. FY12 funds provide continued development of the Electronic Scheduling and Dissemination (ESD) 3.0 upgrade. This effort is in Budget Activity 7, Operational System Development, because it supports a fielded system.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Range Upgrades	11.974	16.589	13.556	-	13.556
Description: Continue development of interoperability and RTS Block Change (RBC) efforts. These include high power amplifier development for S-band capability and predeployment system engineering and network integration.					
FY 2010 Accomplishments: Continued systems engineering, integration, and testing for Eastern Vehicle Checkout Facility, Diego Garcia, Colorado, Guam, Oakhanger, Hawaii, and New Boston RBC efforts, as well for the RBC Transportable asset					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305110F: *Satellite Control Network*	PROJECT 673276: *Satellite Control Network*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
#1. Continued risk reduction efforts for Geodesic Dome Phased Array Antenna development. Continued development for Compatible Command & Control demo. ***FY 2011 Plans:*** Continue systems engineering, integration, and testing for gov't acceptance of Eastern Vehicle Checkout Facility, Diego Garcia, Colorado and Oakhanger RBC efforts. Continue Guam, Hawaii, New Boston RBC and the RBC Transportable asset #1. Begin Thule RBC efforts. Begin high power amplifier development for RBC to include S-band. Continue Geodesic Dome Phased Array Antenna and Compatible C2 development efforts. ***FY 2012 Base Plans:*** Continue systems engineering, integration, and testing for gov't acceptance of Guam (Side B) RBC, as well as continue RBC efforts for Hawaii, New Boston, Thule, and the RBC Transportable asset #1. Begin systems engineering, integration and testing core electronics RBC upgrades for Oakhanger (side B) and Vandenberg (side B) Remote Tracking Stations. Continue high power amplifier development for RBC to include S-band, to enable dual-band commanding. ***FY 2012 OCO Plans:*** Not Applicable					
Title: Network Operations Upgrades ***Description:*** Continue Electronic Scheduling & Dissemination (ESD) 3.0 upgrade ***FY 2010 Accomplishments:*** Continued ESD 3.0 development ***FY 2011 Plans:*** Continue ESD 3.0 development. ***FY 2012 Base Plans:*** Continue ESD 3.0 development ***FY 2012 OCO Plans:*** Not Applicable	3.571	1.633	1.250	-	1.250
Title: Program Support ***Description:*** Program support to include FFRDC and SETA.	3.977	3.445	3.531	-	3.531

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305110F: *Satellite Control Network*	**PROJECT** 673276: *Satellite Control Network*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Program support to include FFRDC and SETA. ***FY 2011 Plans:*** Program support to include FFRDC and SETA. ***FY 2012 Base Plans:*** Program support to include FFRDC and SETA. ***FY 2012 OCO Plans:*** Not Applicable					
Accomplishments/Planned Programs Subtotals	19.522	21.667	18.337	-	18.337

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPAF: *PE 0305110F, Satellite Control Network (Space)*	58.185	60.383	61.386	0.000	61.386	64.219	65.424	60.787	62.252	Continuing	Continuing

D. Acquisition Strategy

The AF uses the competitively awarded Satellite Control Network Contract (SCNC), managed by Space and Missile Systems Center, to modernize and sustain the AFSCN on a non-interference basis as it continues to support operational, RDT&E, and other designated users. The AF has also awarded sole source contracts to Honeywell to continue to modernize the AFSCN.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305110F: *Satellite Control Network*	PROJECT 673276: *Satellite Control Network*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Satellite Control Network Contract	Various	Honeywell:Colorado Springs, CO	179.815	18.222	Dec 2010	14.806	Dec 2011	-		14.806	Continuing	Continuing	TBD
		Subtotal	179.815	18.222		14.806		-		14.806			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support (FFRDC, SETA, SPO ops)	Various	various:various,	87.386	3.445	Dec 2010	3.531	Dec 2011	-		3.531	Continuing	Continuing	TBD
		Subtotal	87.386	3.445		3.531		-		3.531			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	267.201	21.667		18.337		-		18.337			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305110F: *Satellite Control Network*	PROJECT 673276: *Satellite Control Network*

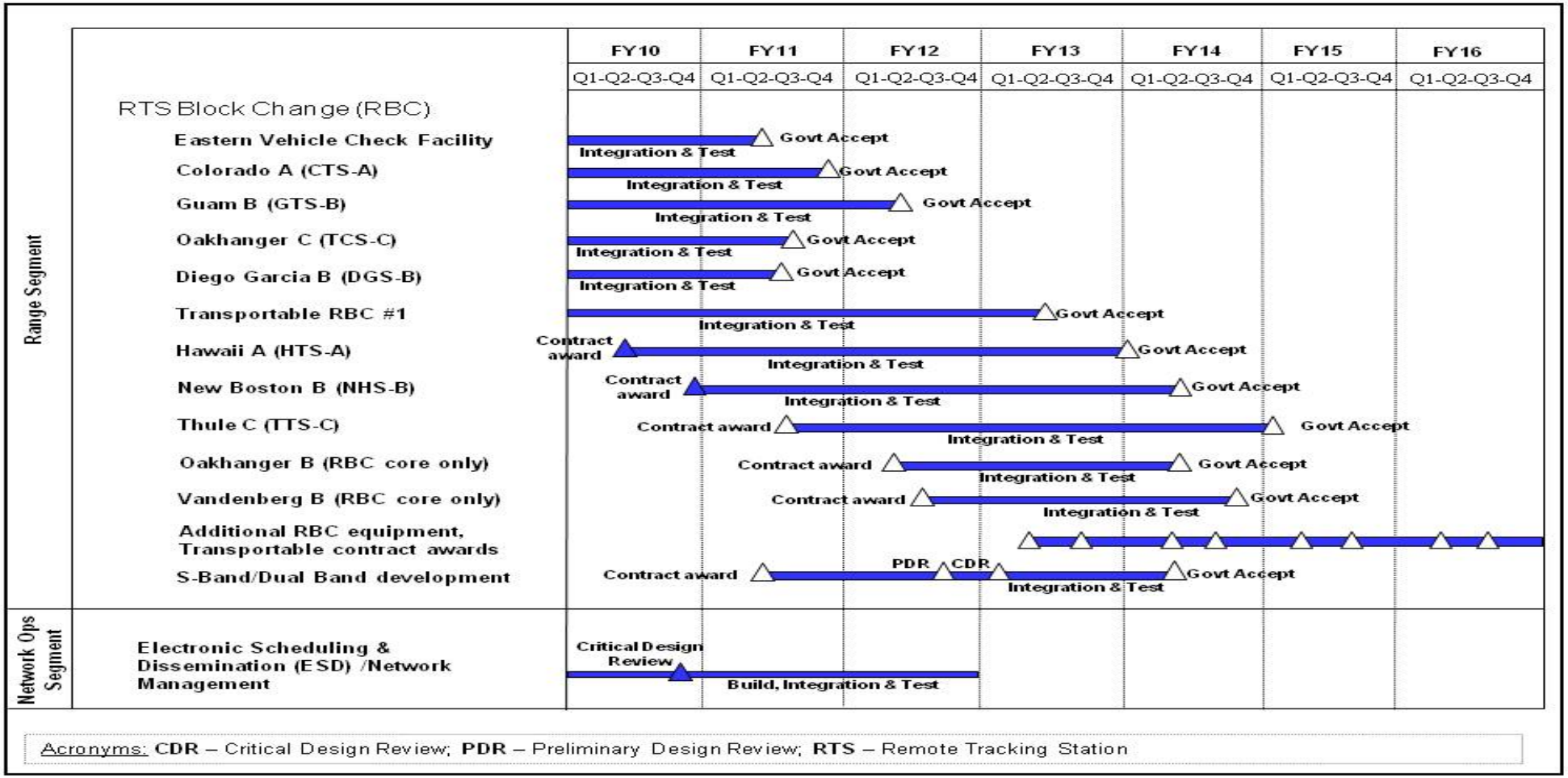

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305110F: *Satellite Control Network*	**PROJECT** 673276: *Satellite Control Network*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
RANGE UPGRADES (RBC- Remote Tracking Station (RTS) Block Change)	1	2012	4	2012
- Eastern Vehicle Check Facility integration/test/Gov't accept	1	2010	2	2011
- Colorado-A RBC integration/test/Gov't accept	1	2010	4	2011
- Guam-B RBC integration/test/Gov't accept	1	2010	2	2012
- Oakhanger-C RBC integration/test/Gov't accept	1	2010	3	2011
- Diego Garcia-B RBC integration/test/Gov't accept	1	2010	3	2011
- Transportable RBC integration/test/Gov't accept	1	2010	2	2013
- Hawaii-A RBC contract award/integration/test/Gov't accept	2	2010	1	2014
- New Boston-B RBC contract award/integration/test/Gov't accept	4	2010	2	2014
- Thule-C RBC contract award/integration/test/Gov't accept	3	2011	1	2015
- Oakhanger-B RBC core contract award/integration/test/Gov't accept	2	2012	2	2014
- Vandenberg-B RBC core contract award/integration/test/Gov't accept	3	2012	4	2014
- Additional RBC contract awards	2	2013	3	2016
- S Band/Dual Band High Power Amplifier development contract award	2	2011	2	2011
- S Band/Dual Band Preliminary Design Review	3	2012	3	2012
- S Band/Dual Band Critical Design Review/integration/test/Gov't accept	1	2013	2	2014
NETWORK OPERATIONS UPGRADES	1	2012	4	2012
- Electronic Scheduling & Dissemination (ESD) Critical Design Review/build/integration/ test	4	2010	4	2012