



CDAO

Data Quality

Priorities & Needs

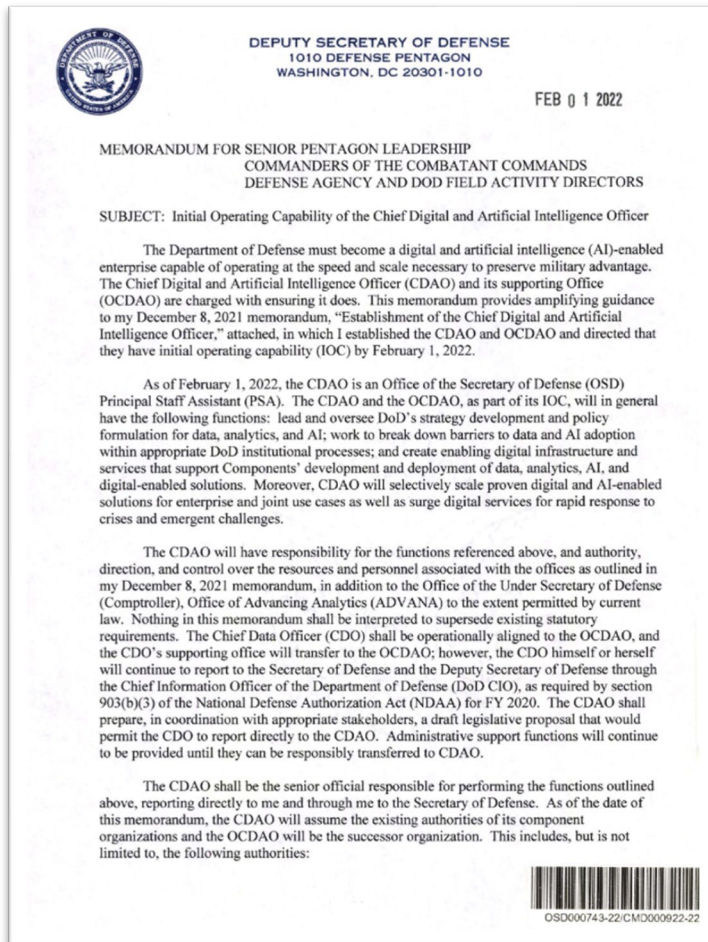
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SLIDES ONLY

NO SCRIPT PROVIDED



“The CDAO... will lead and oversee DoD’s strategy development and policy formulation for data, analytics, and AI; work to break down barriers to data and AI adoption within appropriate DoD institutional processes; and create enabling digital infrastructure and services that support Components’ development and deployment of data, analytics, AI, and digital-enabled solutions.”

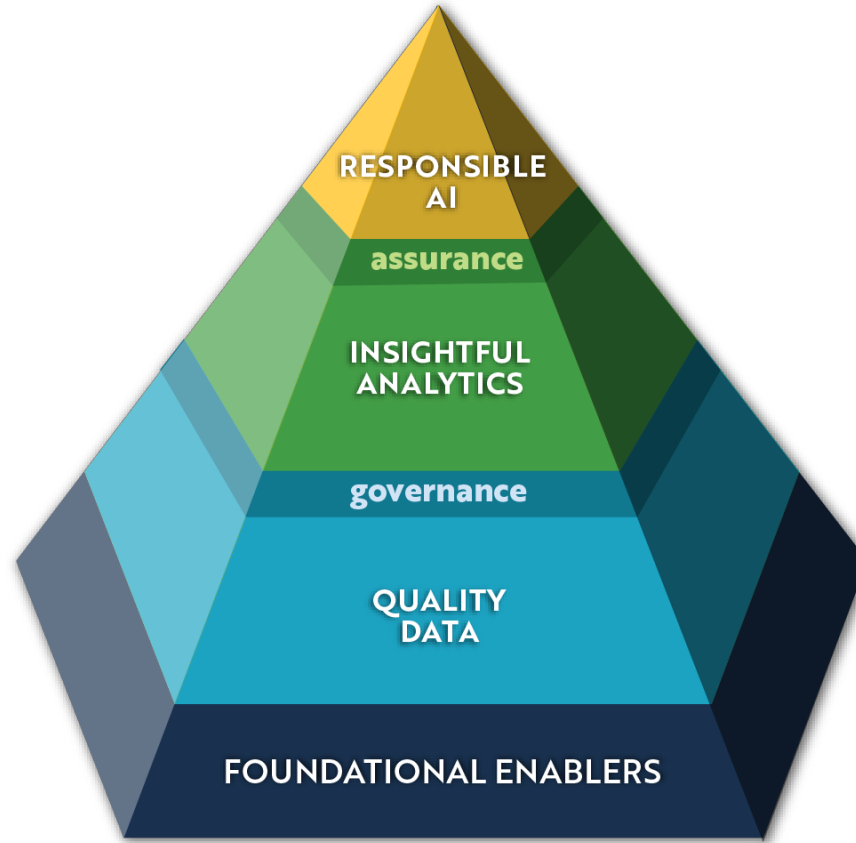
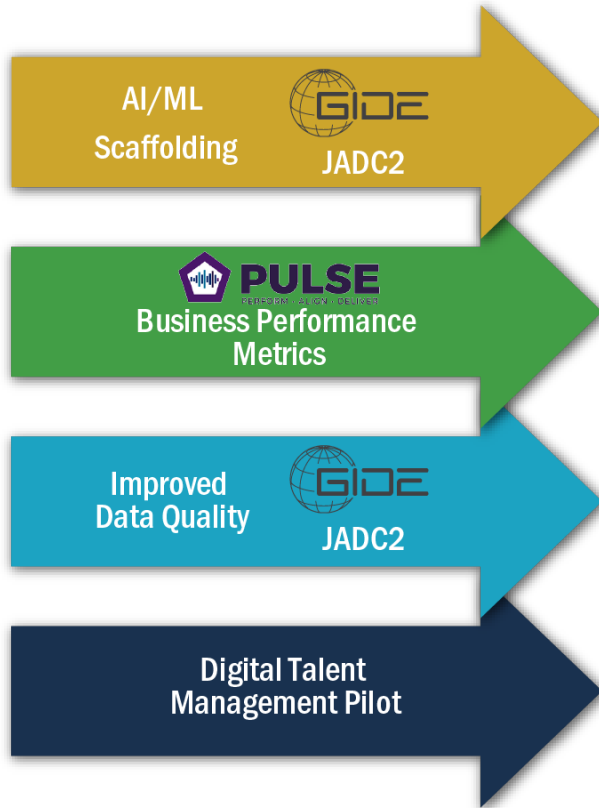
-Deputy Secretary of Defense Kathleen Hicks, 1 Feb 2022

- Democratizing **data access** and maturing **feedback loops** between producers and consumers is central to unlocking the potential of DoD's data to deliver decision advantage
- We are building the framework for DoD's data ecosystem – including **people, process and technology**
- **Quality data is the foundation** for trusted analytics and AI
- DoD cannot address all data challenges at once – **priorities:**
 - Foundational enterprise data: personnel, logistics, and finance
 - End-user facing capability for marquee customers: OSD & CCMDs



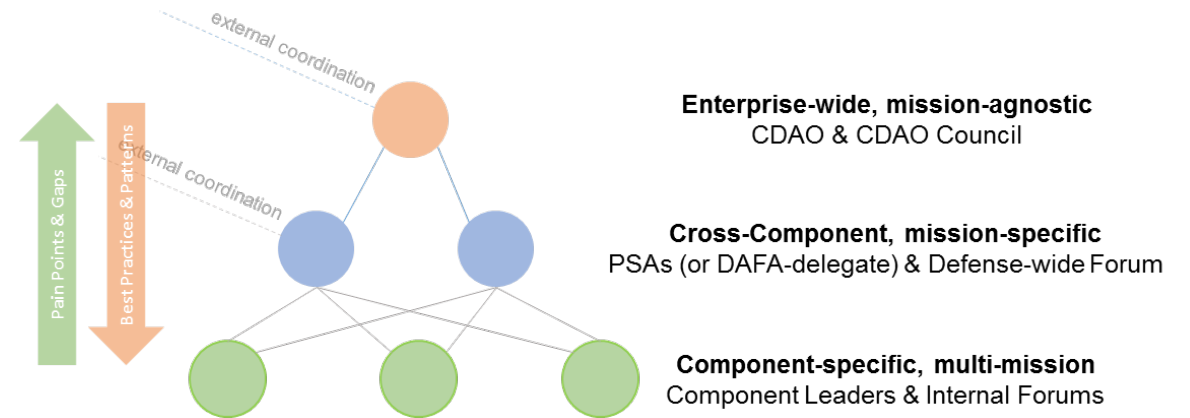


FY23 CDAO BIG PLAYS



Quality Data is dependent on *Empowered Leaders*

- Organized for governance 'at cascading levels'
 - Making the right decisions at the right level
 - Accelerating internal processes for responsible data sharing
- Maintaining alignment as data stewardship ranks are filled
- Empowered with authorities, resources, and organizational alignment necessary to drive internal reforms

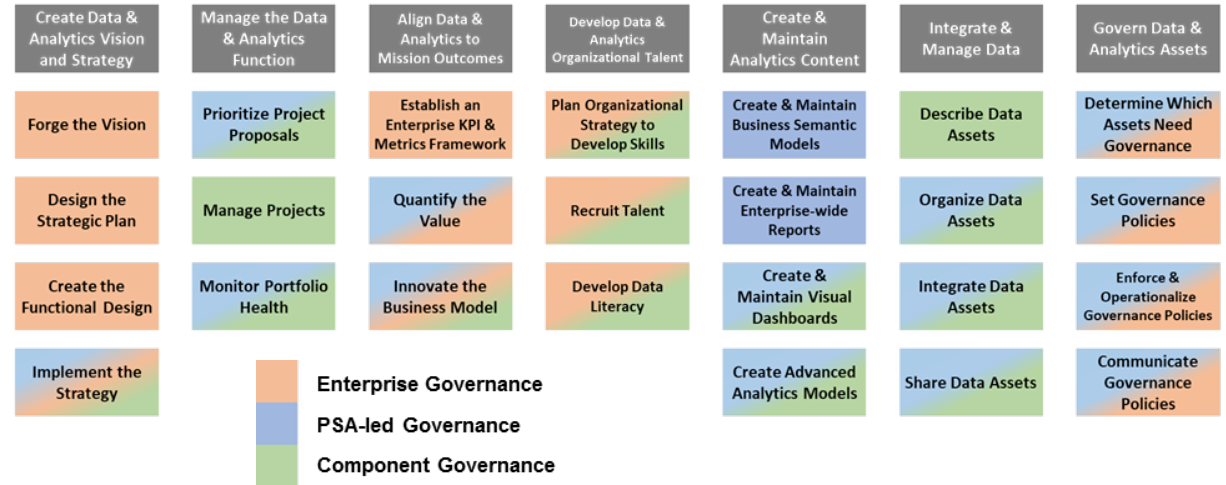


Data Stewardship Hierarchy

... a consistent framework for all 46 major DoD Components

Function	Role	Responsibilities
	# per Component	HQ / at Echelon
	Optional / Required	

Function	Role	Responsibilities
Strategy	Chief Data Officer	Accountable for implementing the statutory responsibilities of 44 U.S.C. §3520; developing, promulgating, and overseeing implementation of data-related strategies, policies, standards, processes and governance ; measuring and reporting on data maturity and data quality . ¹
	One Required	Headquarters
Policy Alignment	x Data Officer (xDO)	Assist in development, manage and oversee the implementation of data management policies within their scope of responsibility. ² Designates and provides guidance to data stewards.
	Few Optional	Headquarters
Lifecycle Management	Data Steward	For their assigned scope of responsibility: establishing protection, sharing and governance guidelines ; maintaining data names, definitions, data integrity rules, and domain values; ensuring compliance with legal and policy requirements and conformance to data policies and standards; ensuring application of appropriate security controls; analyzing and improving data quality. ³ Provides guidance to xData Managers.
	Many Required	Headquarters
Policy Implementation	x Data Manager (xDM)	Implementing enterprise and domain-specific data management policies and maintaining the quality of the data within their scope of responsibility. ⁴
	Many Required	at Echelon
Mission Execution	Data Custodian	Performs " mission and business data-related tasks such as collecting, tagging, and processing data, and grant individual users access to additional information beyond that of general systems, applications, and file permissions to perform such functions, where appropriate." ⁵
	Many Optional	at Echelon



Federated governance is sustainable and scalable governance

Quality Data depends on **policy** – ensuring tools and processes embody our culture as per *Data Decrees*

- Policy safeguards against new dark data sources - "no new bad"
- Technical approaches to implement Data Strategy - (VAULTIS)
- Guidance after experimentation, shaped by enterprise data architects

DEPARTMENT OF DEFENSE DATA DECREES

1. MAXIMIZE DATA SHARING AND RIGHTS FOR DATA USE: ALL DoD DATA IS AN ENTERPRISE RESOURCE.
2. PUBLISH DATA ASSETS IN THE DoD FEDERATED DATA CATALOG ALONG WITH COMMON INTERFACE SPECIFICATIONS.
3. USE AUTOMATED DATA INTERFACES THAT ARE EXTERNALLY ACCESSIBLE AND MACHINE-READABLE; ENSURE INTERFACES USE INDUSTRY-STANDARD, NON-PROPRIETARY, PREFERABLY OPEN-SOURCE, TECHNOLOGIES, PROTOCOLS, AND PAYLOADS.
4. STORE DATA IN A MANNER THAT IS PLATFORM AND ENVIRONMENT-AGNOSTIC, UNCOUPLED FROM HARDWARE OR SOFTWARE DEPENDENCIES.
5. IMPLEMENT INDUSTRY BEST PRACTICES FOR SECURE AUTHENTICATION, ACCESS MANAGEMENT, ENCRYPTION, MONITORING, AND PROTECTION OF DATA AT REST, IN TRANSIT, AND IN USE.

Guidance in CDAO development

Visible – Cataloging sensitive data

Accessible – Strategic approaches for access control and digital policy administration

Understandable – Strategic approach to building the canonical controlled vocabulary

Linked – Generation and use of globally unique identifiers

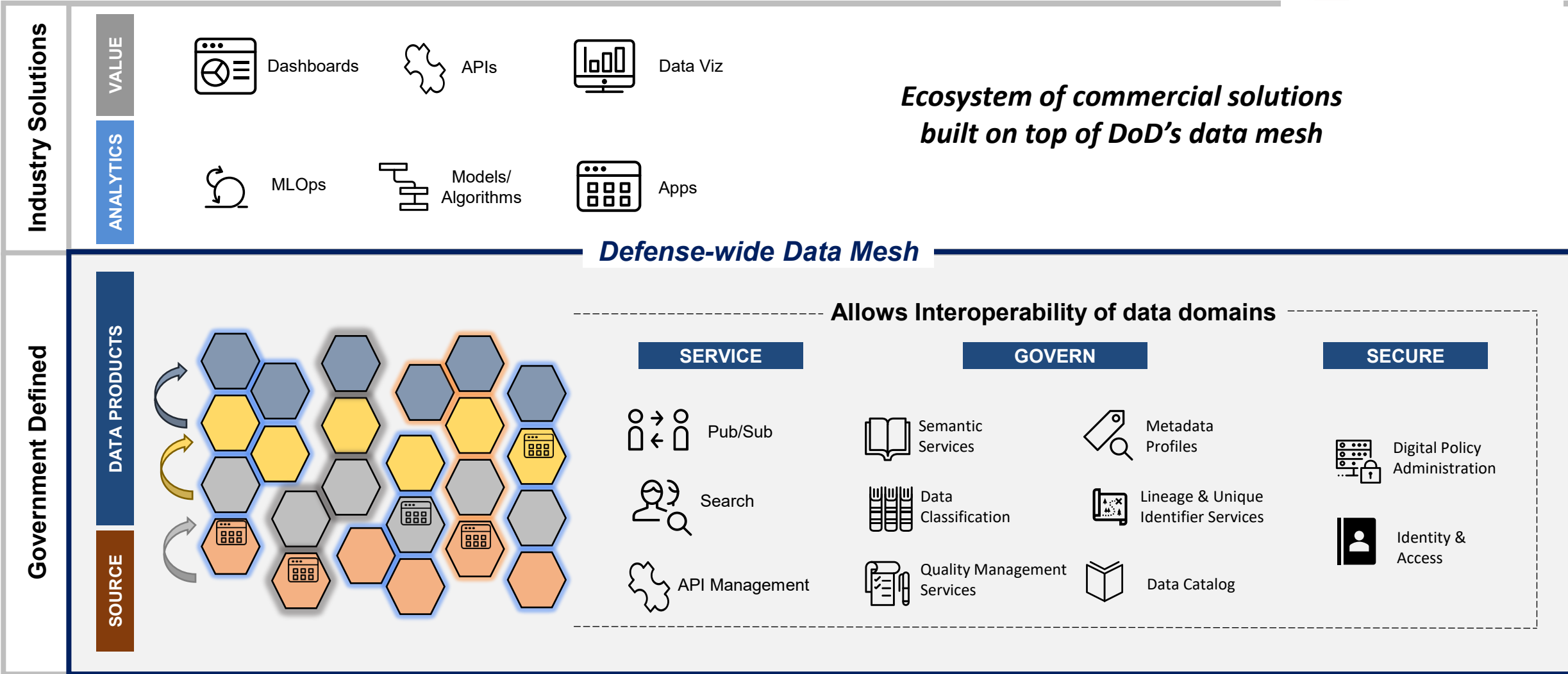
Trustworthy – Metadata profiles (bills of material), including data provenance and lineage

Interoperable – Metadata standards supporting primary exchange patterns

Secure – Data standards required for Zero Trust

Sustainable change requires policy updates in data management, acquisition and cybersecurity

Data Mesh Architecture for Quality Data



INFRASTRUCTURE



TRANSPORT



- Readiness and openness to integrate with enterprise data management services, as they emerge:
 - Publishing to the federated ***data catalog***
 - Registering well-documented ***data interfaces***
 - Aligning to common ***vocabulary*** and ***ontology*** via semantic services
 - Leveraging globally ***unique identifiers***
 - Publishing measurements of ***data quality*** (e.g. timeliness, completeness, etc.)
 - Exchanging data via ***common formats***
 - Incorporating enterprise ICAM – including ***policy-based access control***
- Feedback on systemic pain points and bright spots across the enterprise
- Partnership in our campaign of learning

Governance: CDAO Council structure; Data Quality Big Play: Data Product Management, Data Mesh Services, and Enterprise Collaboration Tools – “Digital Commons”; JADC2 CFT Engagement; Data, Algorithm, & Model Protection

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Strategy: Data, Analytics, & AI Strategy; Policy development; Process reform (e.g. DoD Issuances)

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International Engagements: Bilateral, multilateral and coalition engagement, international acquisition policy, engagement in demonstrations & experiments

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