



EU Mobility Policy Framework Towards Cooperative Mobility



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European Commission
Directorate General for Communications Networks, Content and Technology



- ❖ *About Europe's Transport Sector*
- ❖ *Research and Innovation in ICT for Mobility*
- ❖ *Deploying Intelligent Transport Systems in Europe*
- ❖ *International Cooperation and harmonisation of standards*
- ❖ *Addressing the challenges of future mobility*



Transport, the engine room of Europe

- ✓ 10% of the GDP in the EU
- ✓ 5% of total employment in the EU
- ✓ 2 million jobs in the automotive sector + 10 million jobs in the transportation sector
- ✓ €70 billion/year exports
- ✓ €30 billion investment in R&D by industry





Europe's Transport Sector Smart mobility services

Real Time Traffic and Travel Information



Optimised collection and provision of road, traffic and travel data



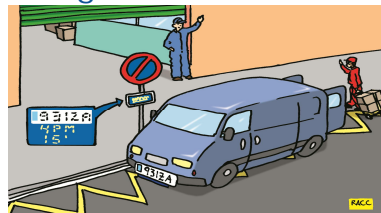
Accurate public data for digital maps



Cooperative Intersection Safety



ITS services to improve infrastructure usage



Traffic safety information services



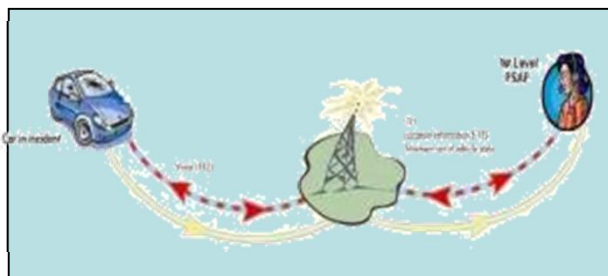
Multimodal journey planners



ITS services for travel assistant



eCall: Pan-European in-vehicle emergency call



Open in-vehicle platforms



Electronic road tolling

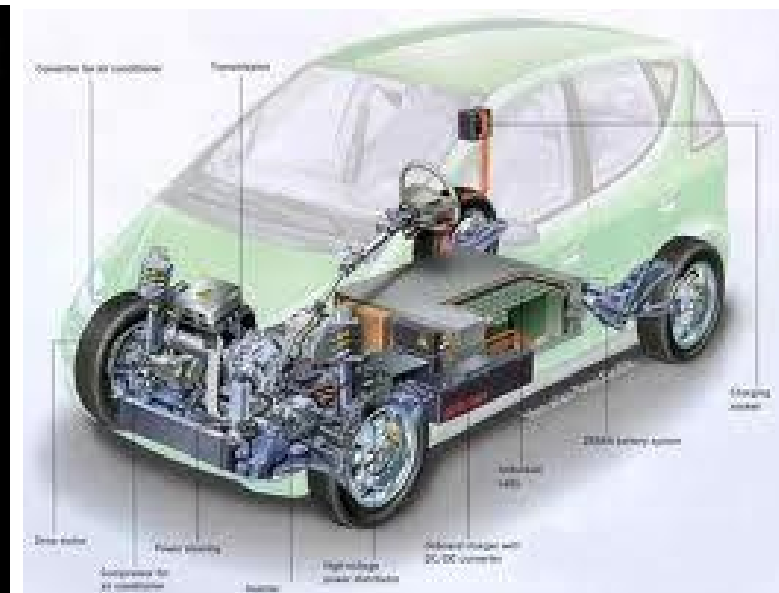
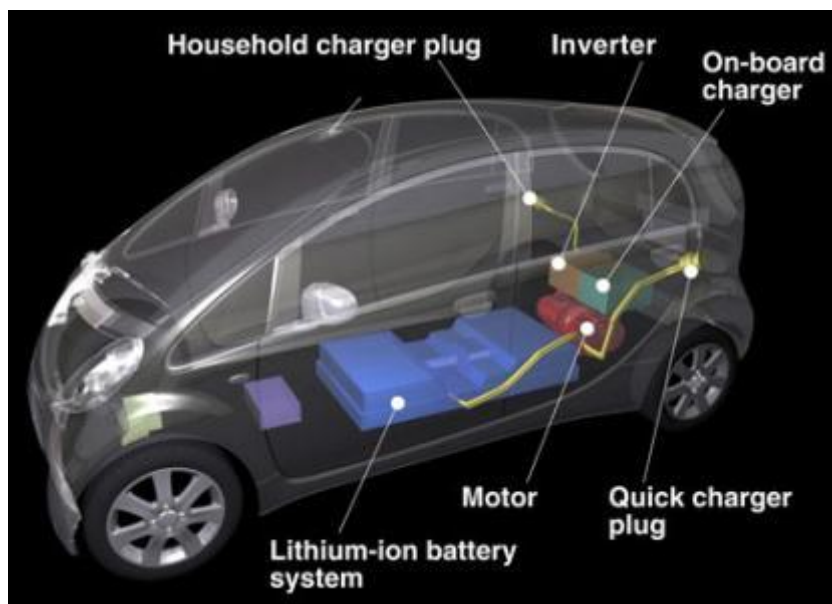


ITS framework architecture



E-Freight







Europe's Transport Sector Cooperative Systems



Roadmap to a Single European Transport Area

Towards a competitive and resource efficient transport system

- To meet the challenges, transport has to:
 - ✓ Use less energy
 - ✓ Use cleaner energy
 - ✓ Exploit efficiently a multimodal, integrated and 'intelligent' network
- Curbing mobility is not an option
- By 2050 reduce emissions by 60%, and 20% by 2020 (2008 level)
- By 2050 move close to zero fatalities in road transport, halving road casualties by 2020





An ambitious European plan to revive the car industry

- *An action plan adopted 8th November 2012 entitled "CARS 2020" designed to reorganise and modernise the European car industry in view of boosting the sector's competitiveness.*
- *The Commission wants to foster access by European manufacturers to the world market by rationalising international technical standards.*
- *The car industry represents 12 million jobs in the EU, 4% of the GDP and a trade surplus of 90 billion euros*
- *The plan counts on innovation and research in view of producing more economic, safer cars with greater added value.*

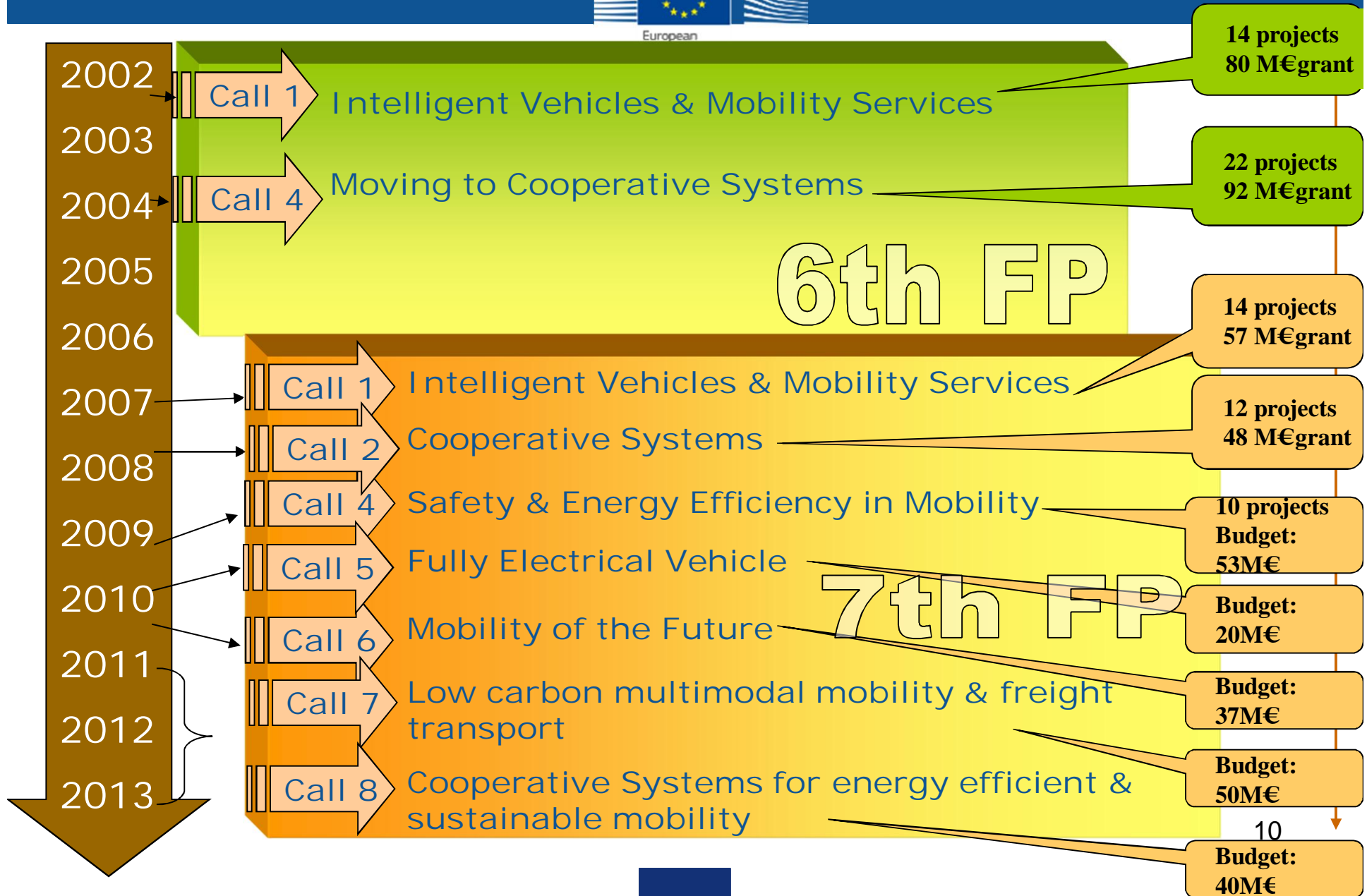




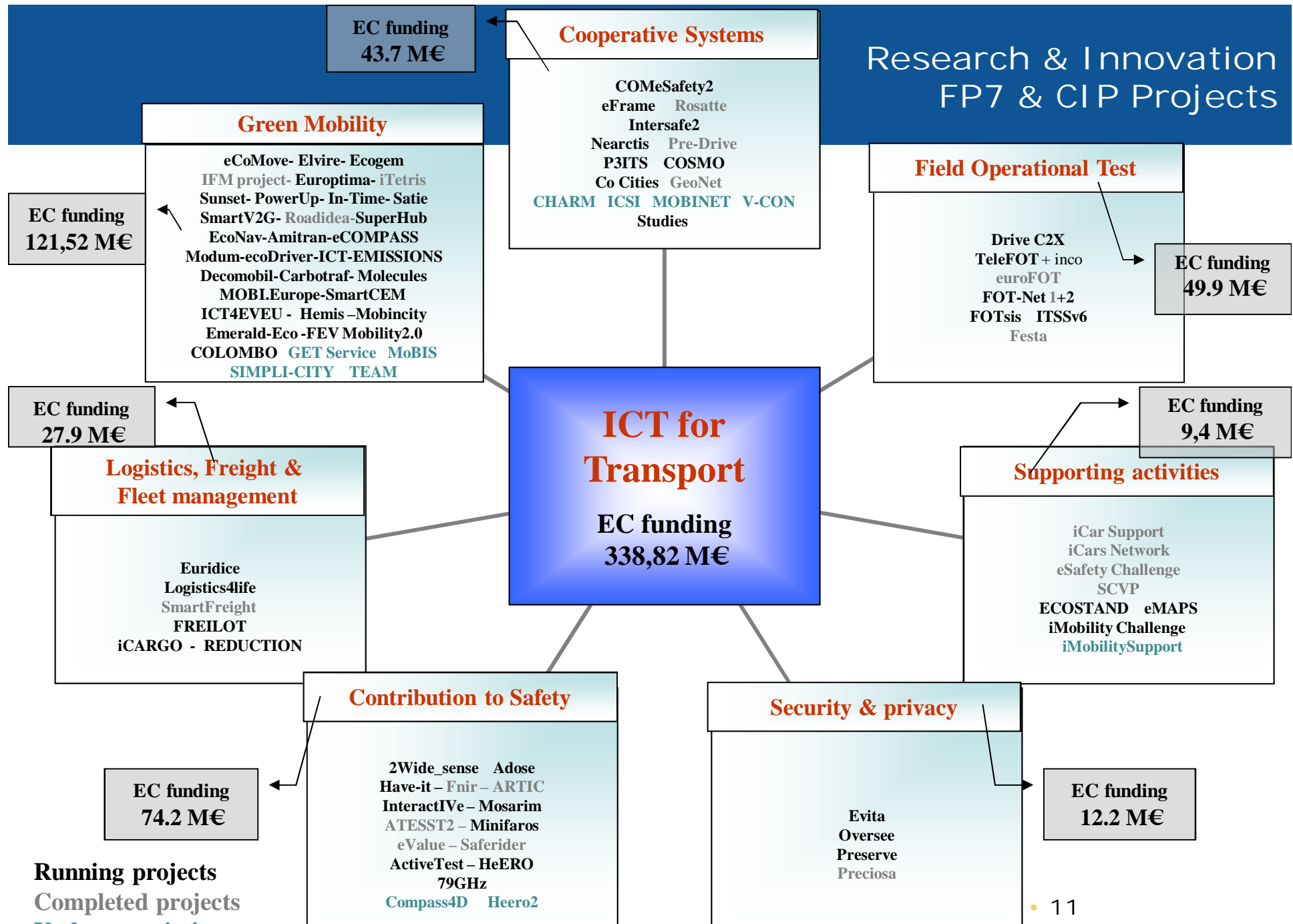
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- ❖ *Addressing the challenges of future mobility*

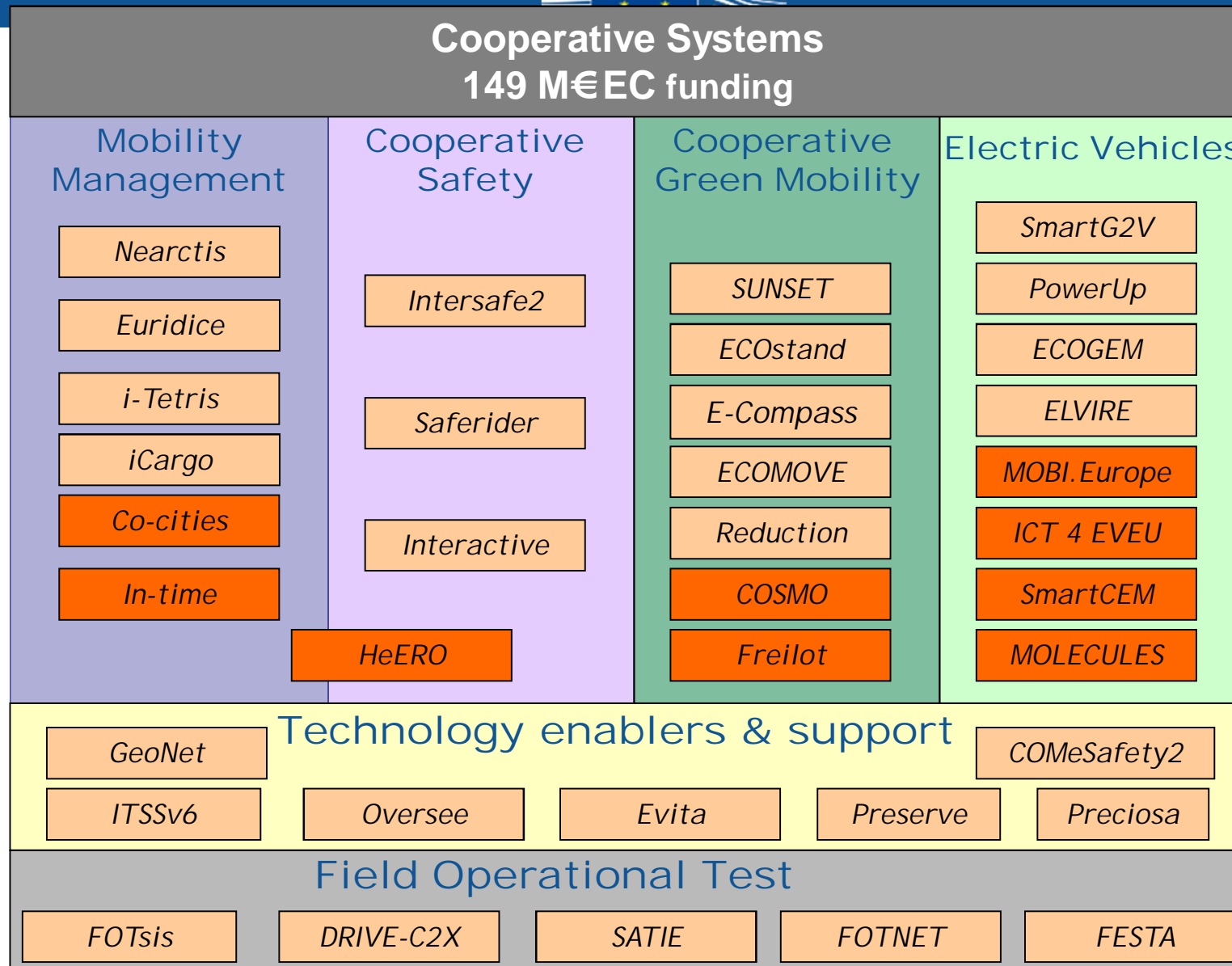


Research & Innovation in ICT for Mobility



Research & Innovation FP7 & CIP Projects







Research & Innovation Fully Electric Vehicles

Cluster of CIP Pilots



ICT4EVEU
SMARTCEM
MOLECULES
Mobi.EUROPE

**ICT for
Fully Electric Vehicles**
25 projects
86 M€EC funding

PowerUp

ELVIRE

SMARTV2G

EMERALD

OpEneR

eFuture

Cluster of FEV projects

MOBINCITY
Eco-FEV
Mobility2,0

V2X Communication
and Interfaces

HEMIS

Architectures

ODIN
AVTR
AUTOMICS
COSIVU
Smart EV-VC

EcoGem

e-Dash

ICT4EV

MAENAD

CSA

Under negotiations/just started projects

Energy/Power
Storage Systems

Sub-systems and
Integration

SuperLIB

Smart-LIC

E-VECTOORC

P-MOB

ESTRELIA

CASTOR

ID4EV

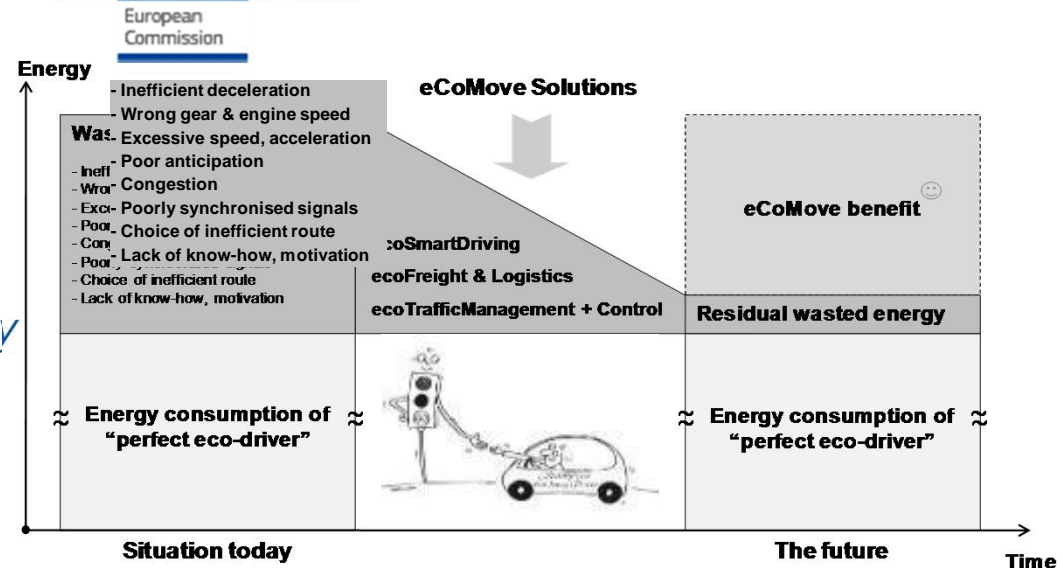


Managed by CNECT-A2

Managed by CNECT-H5

Mission:

"To develop a combination of cooperative systems and tools using vehicle-infrastructure communication to help drivers sustainably eliminate unnecessary fuel consumption, and road operators manage traffic in the most energy-efficient way."



Goals:

- Show that a combination of cooperative systems will reduce fuel consumption by 20%
- Develop eCoMove use cases, system concept and architecture
- Develop a common V2V & V2I platform based on CVIS
- Develop a strategic model of macroscopic energy consumption for an entire road network
- Develop, test and validate the applications: ecoSmartDriving, ecoFreight & Logistics, and ecoTrafficManagement & Control
- Assess applications in 4 field trials (3 cities & 1 interurban motorway)
- Assess implementation issues, carry out a cost-benefit analysis, and propose an implementation roadmap

Coordinator:

ERTICO ITS Europe

Project in negotiation phase

Total costs: ±22.5 M€

EC contribution: ±13.7 M€

Start date: Q1/2010

Duration: 36 months

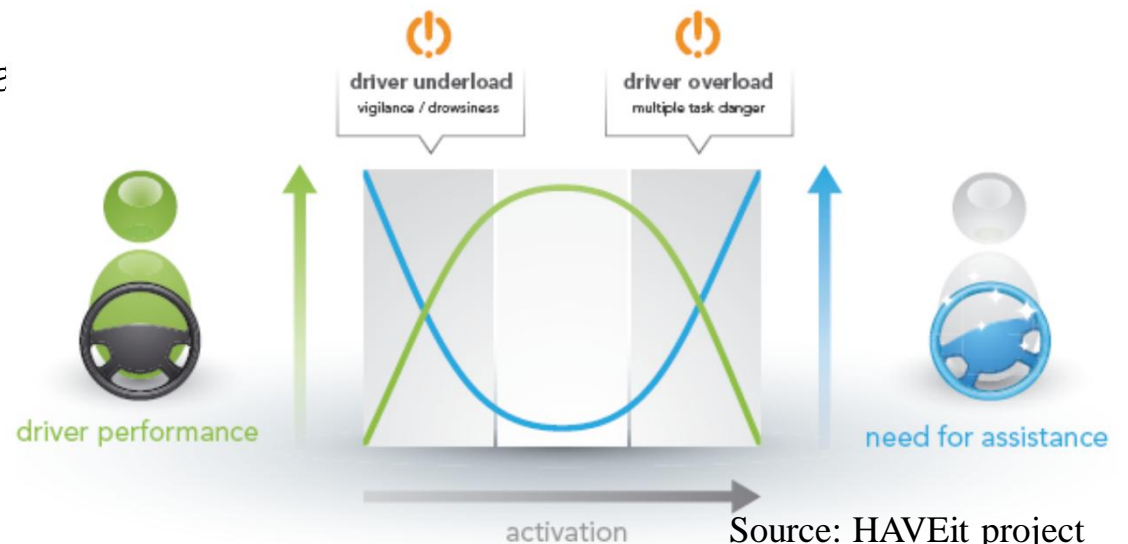
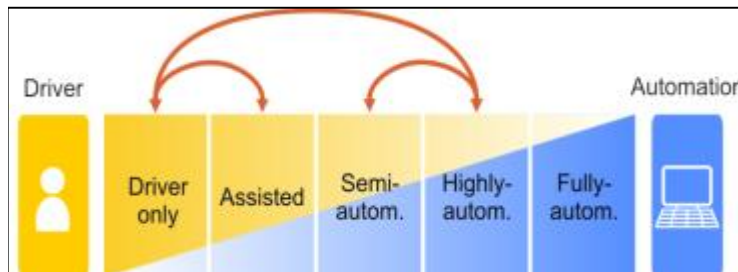
Highly Automated Vehicles for Intelligent Transport HAVEit (7FP)

Focus:

- Progressive step-by-step approach to transfer the driving task from driver to 'co-pilot'
- Failure tolerant safe vehicle architecture incl. advanced redundancy management
- Develop & validate next generation ADAS

Research Topics:

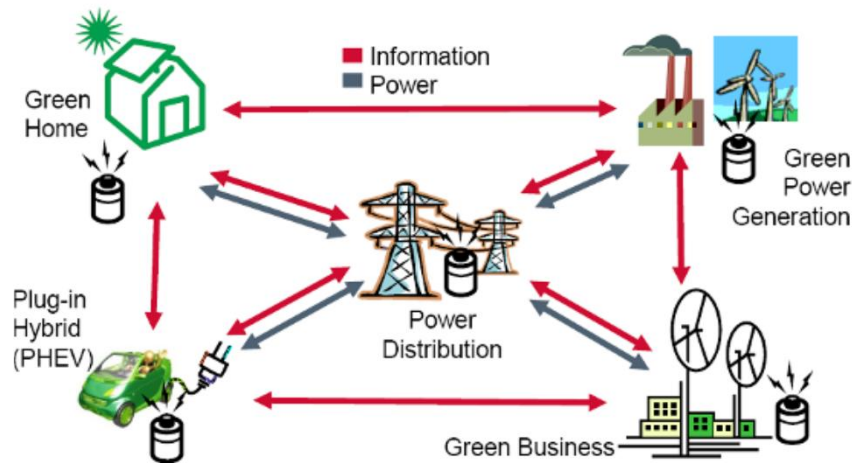
- Highly automated driving – applications
- Intelligent virtual co-pilot
- HAVE-IT concept will be integrated, tested & validated in 5 prototype vehicles



Source: HAVEit project



Mission: *connecting the electric vehicle to the grid by enabling controlled flow of energy and power through safe, secure, energy efficient and convenient transfer of electricity and data.*



Objectives:

- Develop a V2G system made up of a smart grid of charging stations
- Define control systems architecture
- Develop technical communication and information processing between EV and charging stations
- Define specification of communication standards and interfaces/information processing standards
- Ensure security in charging stations and identification
- Test and validate the developed technology and systems
- Disseminate project results and ensure scalability and compatibility

Coordinator: ITE

Total costs: 3,274,370 €

EC contribution: 2,520,000 €

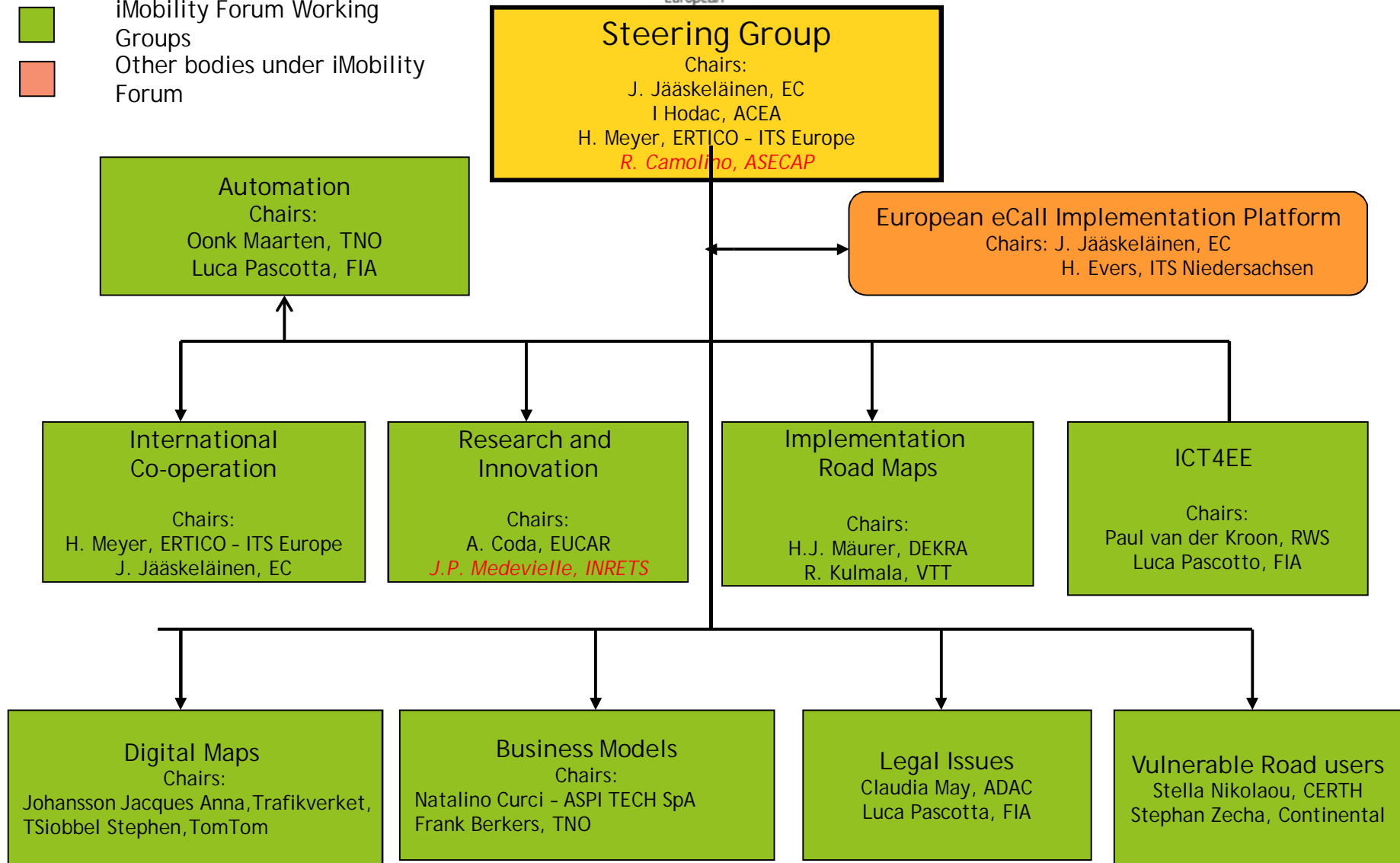
Start date: 01/05/2011

Duration: 36 months



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- iMobility Forum Working Groups
- Other bodies under iMobility Forum



● Directive 2010/40/EU

in force since
26 Aug 2010

Framework for the Coordinated and Effective
Deployment and Use of Intelligent Transport Systems

Objectives

- Establishing a framework for coordinated and effective deployment and use of ITS
- Setting common priorities
- Development of specifications and standards focused on interoperability and continuity
 - » functional, technical, organisational & service provision-related

ITS Directive



EU-wide Multi-Modal Travel Information



EU-wide Real-Time Traffic information



Free safety-related minimum Traffic Info



Interoperable EU-wide eCall

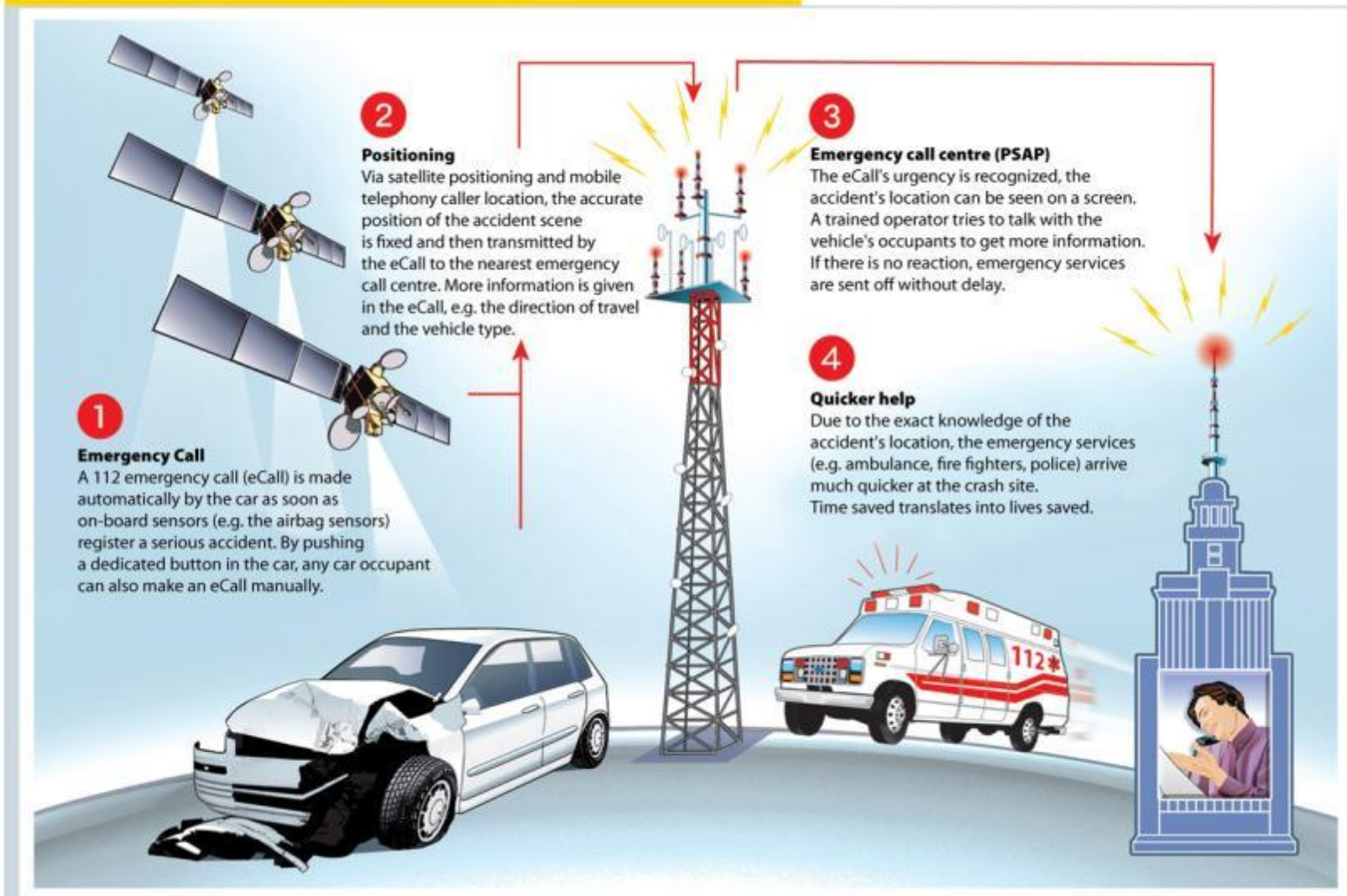


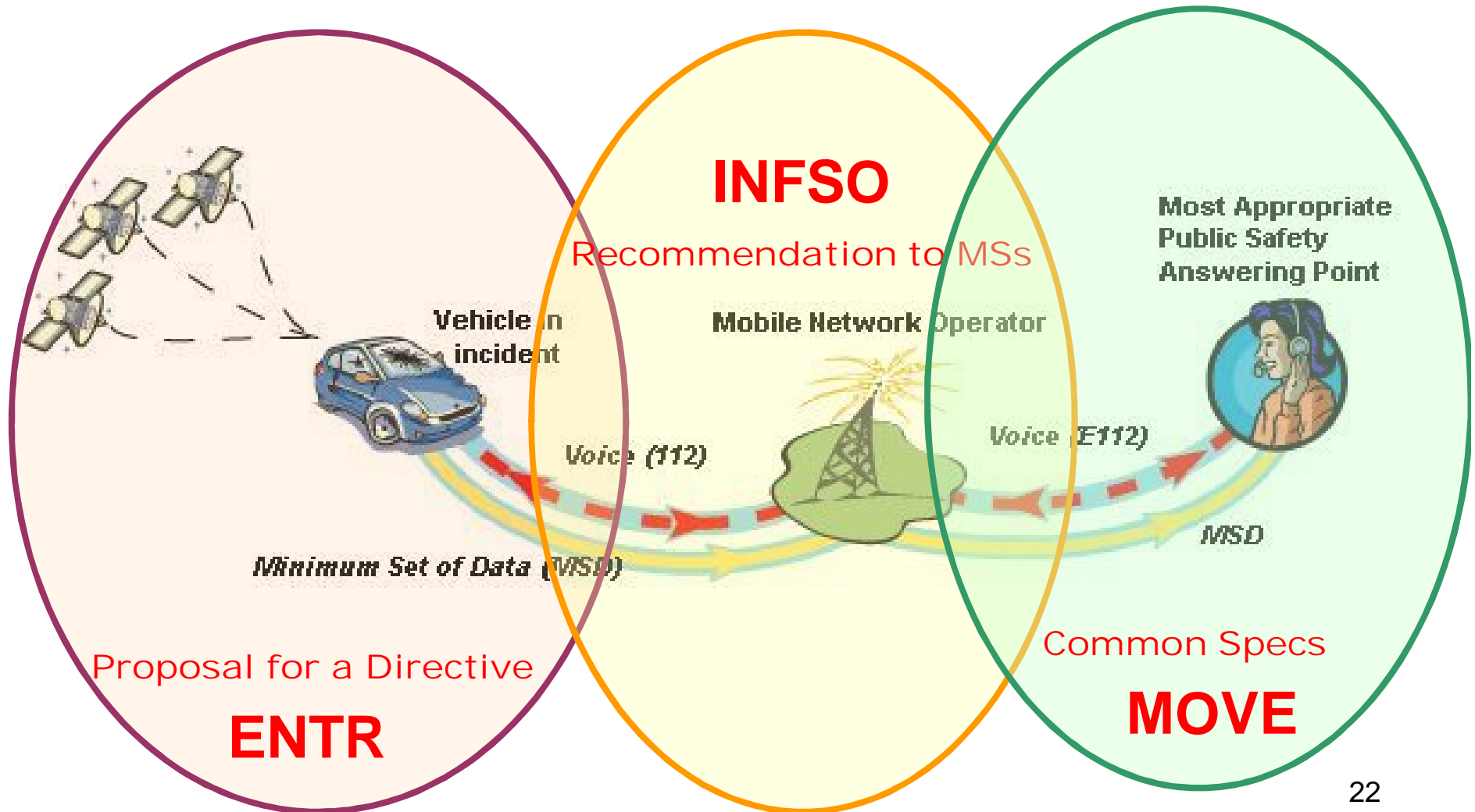
Information & Reservation systems for Truck Parking





eCall: The crashed car calls 112!





- The deployment of the eCall service will mean the introduction of an open telematics platform in all vehicles
- This platform comprising satellite positioning, processing and communication capabilities allows a variety of public sector and commercial services
- It is expected that this will be a trigger for the telematics applications and services market, leading to the deployment of affordable private and public services in Europe





2007	2008	2009	2010	2011	2012	2013	2014	
								
<p>Phase 1 Methodology for conducting FOTs</p>			<p>Phase 2: Field Operational Test on Autonomous Vehicle ICT Systems</p>					
								<p>Phase 3: Field Operational Test on Cooperative ICT Systems</p>
								





Mission:

Carry out comprehensive assessments of cooperative systems through Field Operational Tests in various places in Europe in order to verify their benefits and to pave the way for market implementation.

Expected outcome: Propose a commonly agreed cooperative driving system for the whole of Europe that is interoperable and considers the needs of all stakeholders involved

Research objectives:

- Create a harmonised Europe-wide testing environment for cooperative systems
- Coordinate the tests with cooperative systems technology carried out in parallel by various national projects in Europe
- Evaluate cooperative systems
- Promote cooperative driving



Test sites:

NL (main)
FI, FR,
DE, IT,
SE, ES

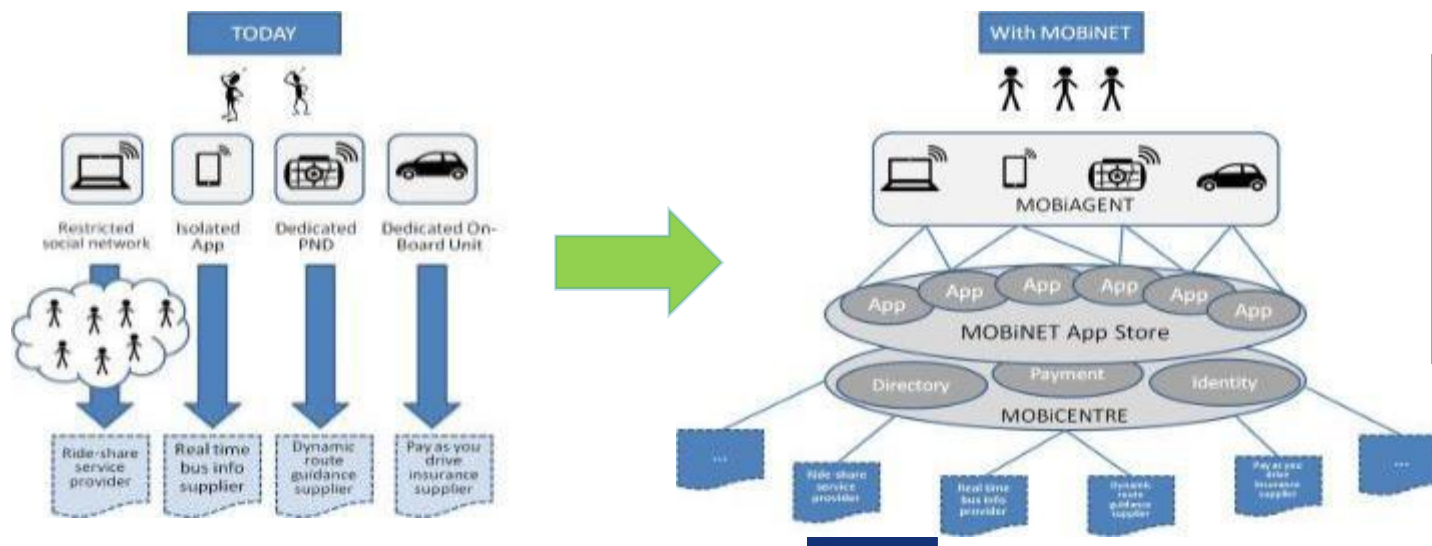
Coordinator: **Daimler AG**
32 consortium partners
Total costs: 18.9 M€
EC contribution: 12.4 M€
Start date: 01/01/2011
Duration: 36 months

Objectives

- develop and operate an open, multi-vendor platform for Europe-wide mobility services
- create interoperable, innovative reference C-ITS services for end-users as well as service providers, and demonstrate these in a variety of trial sites across Europe
- identify governance, organisational and business models for deployment
- build up an eco-system of content & service providers to form the supplier community

Key innovation elements

- multi-vendor business-to-business E-Marketplace and service directory
- middleware making each MOBiNET-enabled user device accessible for any service provider
- a “MOBiNET App Store” for discovering user services
- a service factory developing reference C-ITS services to be deployed with Europe-wide interoperability, and a developers’ toolkit including MOBiNET core service components.



Project facts

Duration

11/2012 – 06/2016

Budget/EU Co-funding

€15.5M / €10.9M

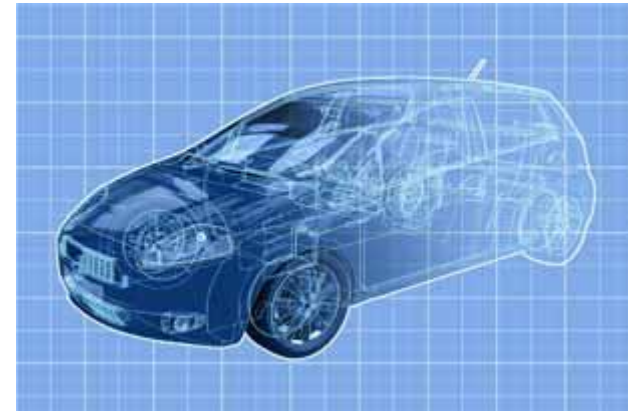
Coordinator: ERTICO

No. partners: 34



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- For the benefit of consumers, industries and the public sector
- Reducing development costs
- Getting to global markets
- Avoiding duplication of efforts
- Generating economies of scale)



International Cooperation Taking a Global Approach



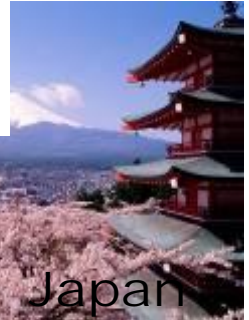
Russia



South Korea



Canada



Japan



USA



China



India



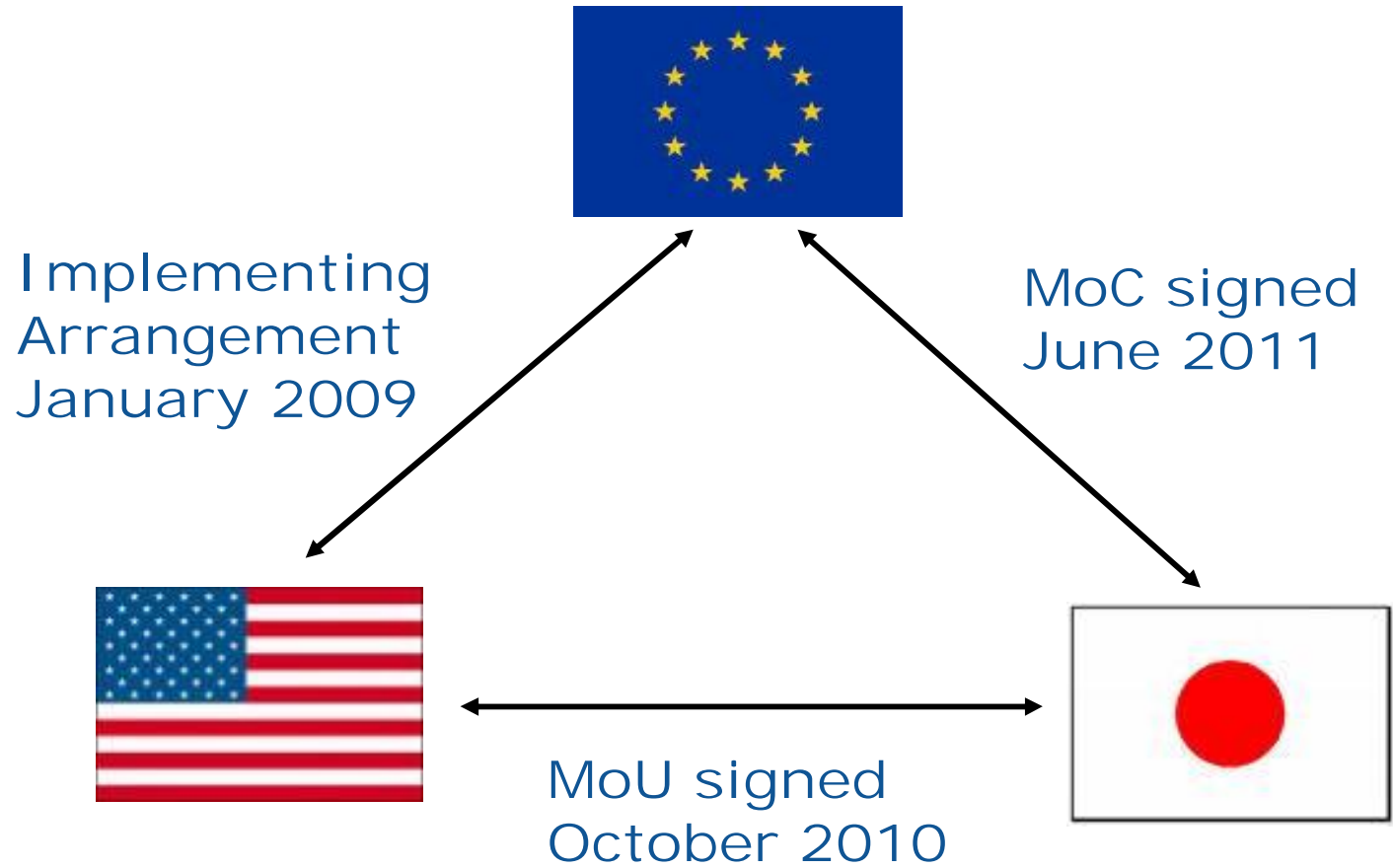
Taiwan



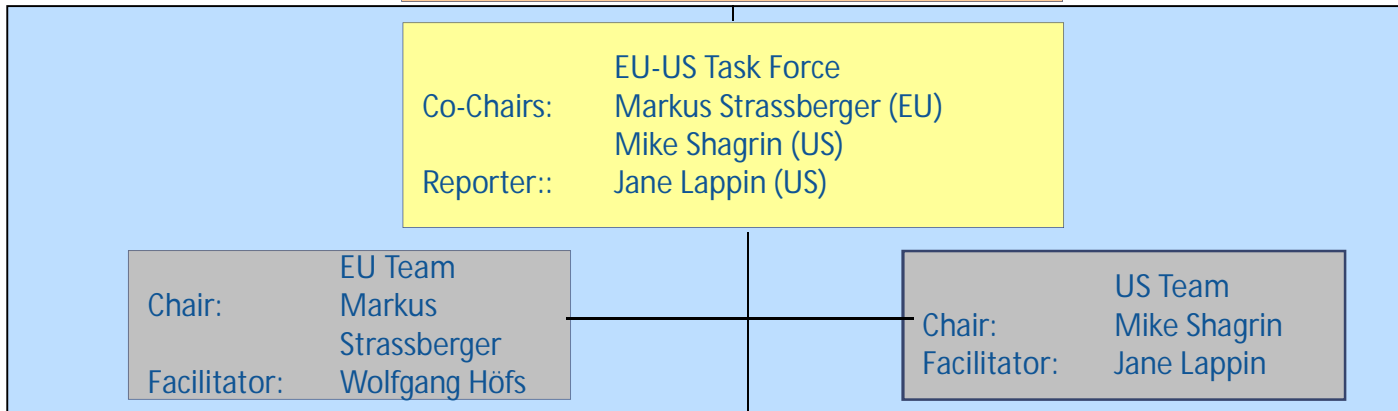
Australia



International Cooperation The Tri-lateral Framework



EU-US Steering Group
 Co-Chairs: Juhani Jääskeläinen (EU)
 Shelley Row (US)
 Member: Brian Cronin (US)
 Facilitators: Wolfgang Höfs (EU)
 Jane Lappin (US)



WG Safety Apps

 Co-Chairs:
 R. Resendes (US)
 M. Schulze (EU)

WG Sustainability Apps

 Co-Chairs:
 M. Pincus (US)
 H.-J. Schade (EU)

WG Standardisation Harmonization

 Co-Chairs:
 W. Höfs (EU)
 S. Sill (US)

WG Assessment Tools

 Co-Chairs:
 T. Benz (EU)
 J. Harding (US)

WG Driver Distraction / Human Factors

 Co-Chairs:
 J. Engström (EU)
 C. Monk (US)

WG Glossary of Terms

 Co-Chairs:
 R. Bishop (US)
 R. Bossom (EU)

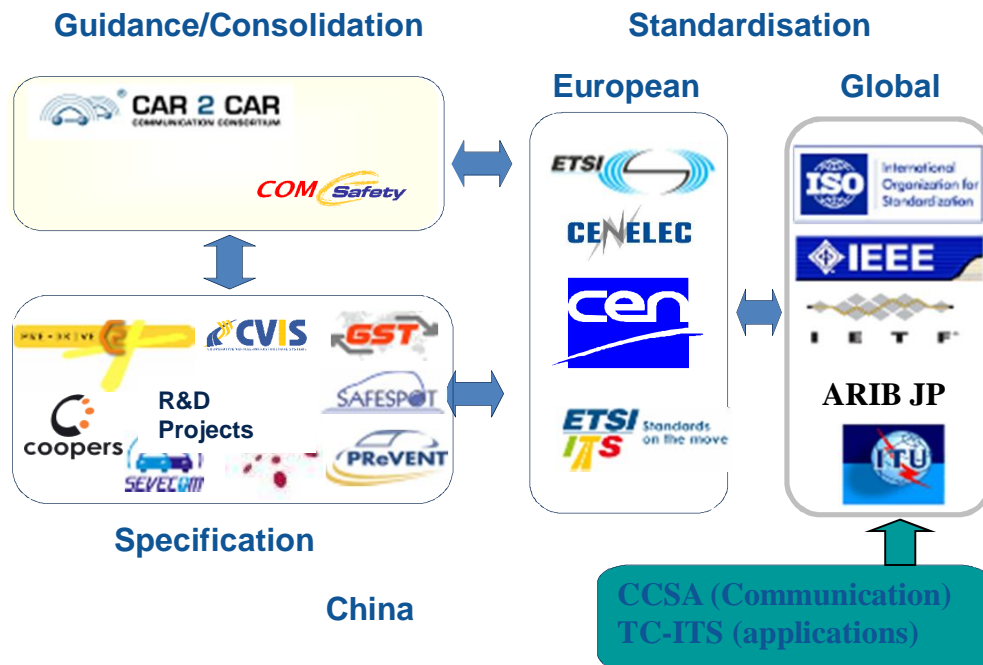


International Cooperation Aiming at Global Standards

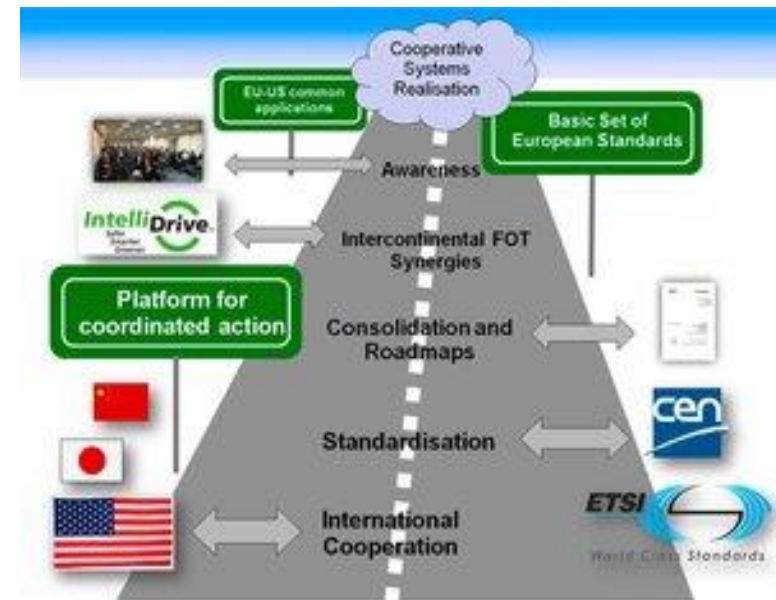
- Enable interoperability of systems/services
- Encourage innovation, fosters enterprise and opens up new markets for suppliers
- Create trust and confidence in products and services
- Expand the market, brings down costs and increases competition
- Help to prevent duplication of effort
- Support greater confidence in procurement
- Interchangeability of system component suppliers



International Cooperation Standards for Cooperative Systems



Europe supports a global approach to Cooperative Mobility which aims at a common communications architecture, interoperability and global, open standards.



Source: COMeSafety2 project



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Addressing the challenges of future mobility

- In Europe and other regions we need a transport system that is resource efficient, environmentally friendly, safe and seamless for the benefit of citizens, the economy and society. More specifically, we need to address the following challenges:
 1. Full connectivity in transportation
 2. An electromobility revolution
 3. Supporting different ownership models
 4. Automation for safety and sustainability
 5. New disruptive and transformative services
 6. Re-vitalising the markets
 7. New industry based on new vehicle concepts
 8. Tackling changes in demographics and the continuing urbanisation and aging population



The Framework Programme for Research and Innovation 2014 – 2020 (80 B€)

- Commission proposal, negotiations and co-decision with the Council and the European Parliament in 2012 - 2013
- Three mutually reinforcing priorities dedicated to
 - ✓ Excellent Science
 - ✓ Industrial Leadership
 - ✓ Societal Challenges
- Smart, Green and Integrated Transport is one of the societal challenges
- In the transport domain, H2020 will be one of the main instruments to deliver the goals of the White Paper



Smart, Green and Integrated Transport

- **Specific objective**
 - To achieve a European transport system that is resource-efficient, environmentally-friendly, safe and seamless for the benefit of citizens, the economy and society.
- **Broad lines of the activities**
 - Resource efficient transport that respects the environment
 - Better mobility, less congestion, more safety and security
 - Global leadership for the European transport industry
 - Socio-economic research and forward looking activities for policy making
 - International cooperation
- **Roadmap-based research based on STTP and ERTRAC Strategic Research Agenda**





Better framework, strategy, vision and stakeholder involvement will make wide-scale deployment of ITS a reality in Europe, creating a market for in-vehicle telematics:

- ✓ The Policy Framework – ITS Action Plan and Directive
- ✓ eCall will spearhead the services by introducing location capability and connectivity to all vehicles from 1 October 2015
- ✓ Actions to fully utilize the results of the iMobility Forum and its Working Group in the ITS Action Plan and Directive (specifications)





Better framework, strategy, vision and stakeholder involvement will make wide-scale deployment of ITS a reality in Europe, creating a market for in-vehicle telematics:

- ✓ Large investment in Research and Innovation (EU FP7, CIP, FOTs, H2020)
- ✓ Stakeholder commitment, including rapid progress in standardisation
- ✓ Cooperation between the industry and the authorities
- ✓ Strong international cooperation (USA, Japan, Russia, China)



Thank you for your attention!



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