C-ROADS PORTUGAL
STAKEHOLDER WORKSHOP

C-ROADS Platform for C-ITS in Europe

28 November 2017
Auditório dos Serviços Sociais da CML (Olaias)
Lisboa, Portugal

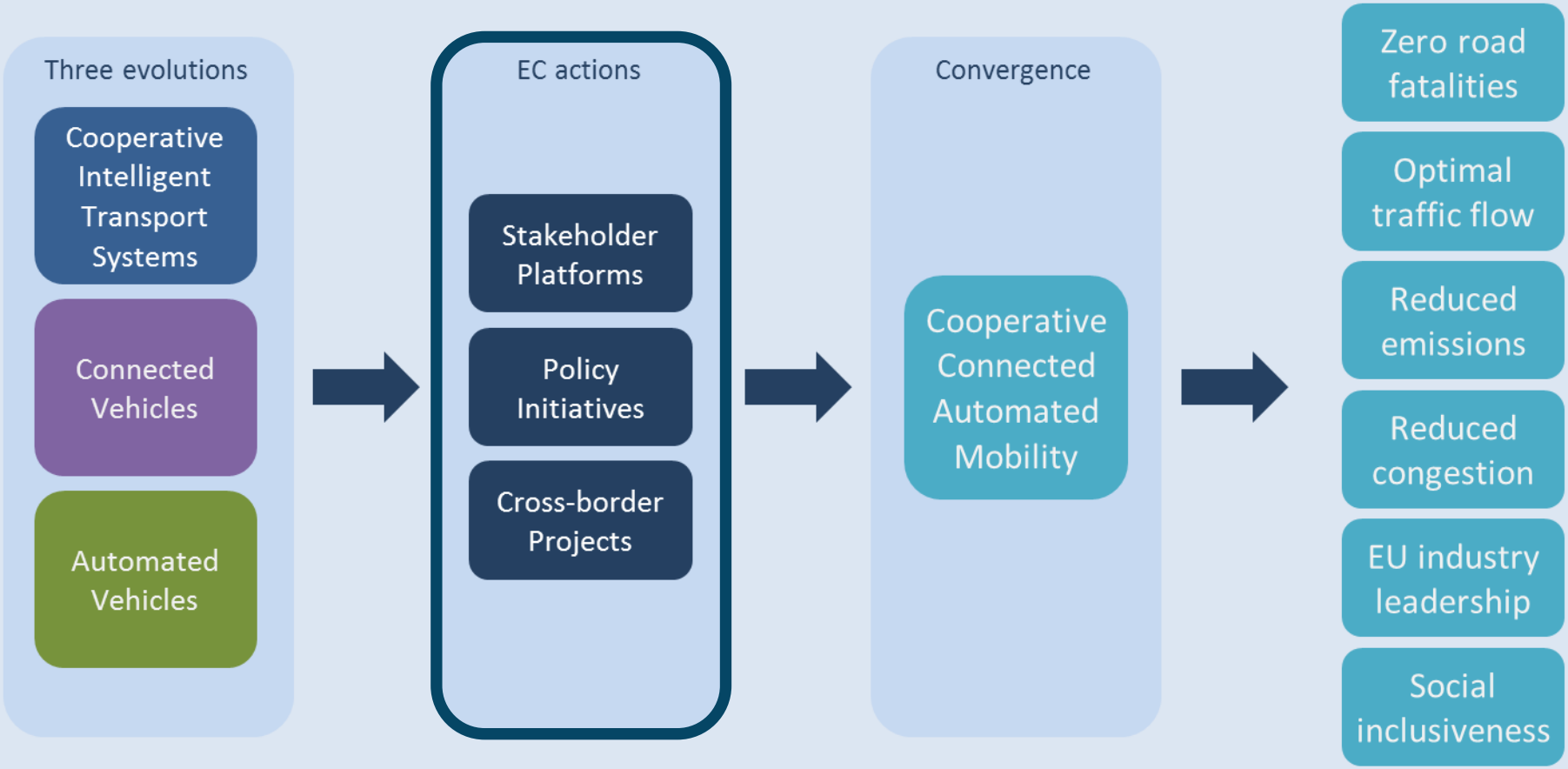
@Transport_EU

Mobility and Transport

CONNECTING EUROPE

European Commission

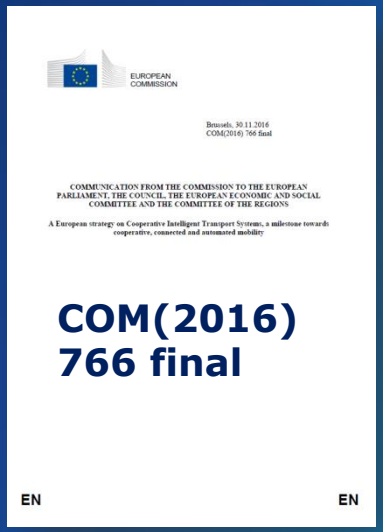
From Technology to Sustainable Mobility



EU C-ITS Strategy

European Commission

Preparation of a C-ITS Delegated Act under the ITS Directive 2010/40/EU


EUROPEAN COMMISSION

Brussels, 30.11.2016
COM(2016) 766 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

A European strategy on Cooperative Intelligent Transport Systems, a milestone towards cooperative, connected and automated mobility

COM(2016) 766 final

EN EN

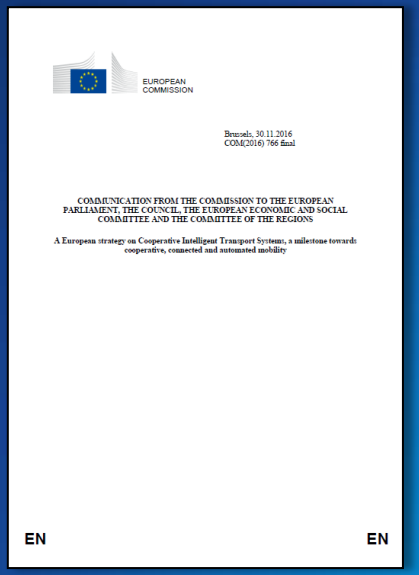
Applying a learning by doing approach

European Commission + **Member States (nominating experts / ITS Committee)** — **Policy level** *"developing legal certainty"*

C-ITS Platform — **Supporting level**

Large scale deployment projects and initiatives — **Implementation level**

EU C-ITS Strategy
COM (2016) 766 adopted Nov 30, 2016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A European strategy on Cooperative Intelligent Transport Systems, a milestone towards cooperative, connected and automated mobility

EN EN

A European strategy on cooperative ITS, a first milestone towards cooperative, connected and automated mobility

http://ec.europa.eu/transport/sites/transport/files/com20160766_en.pdf

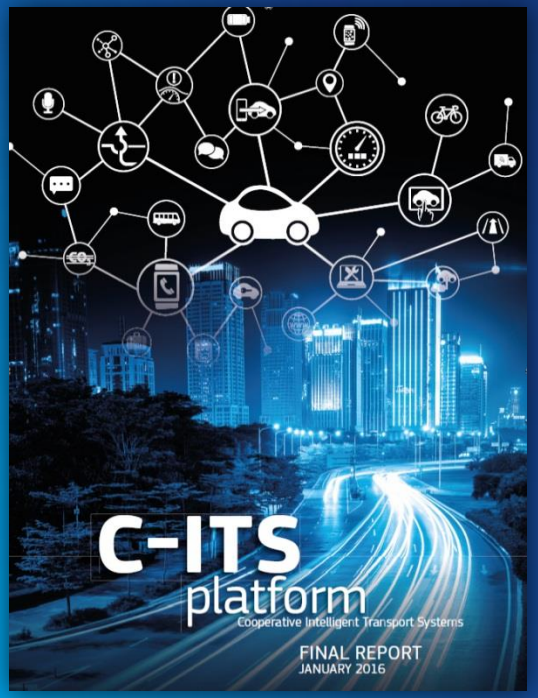
- Considering Delegated Act in 2018
  - Continuity of C-ITS services and interoperability
  - Security of C-ITS communications
  - Practical implementation of the GDPR
  - Compliance assessment

C-ITS Platform

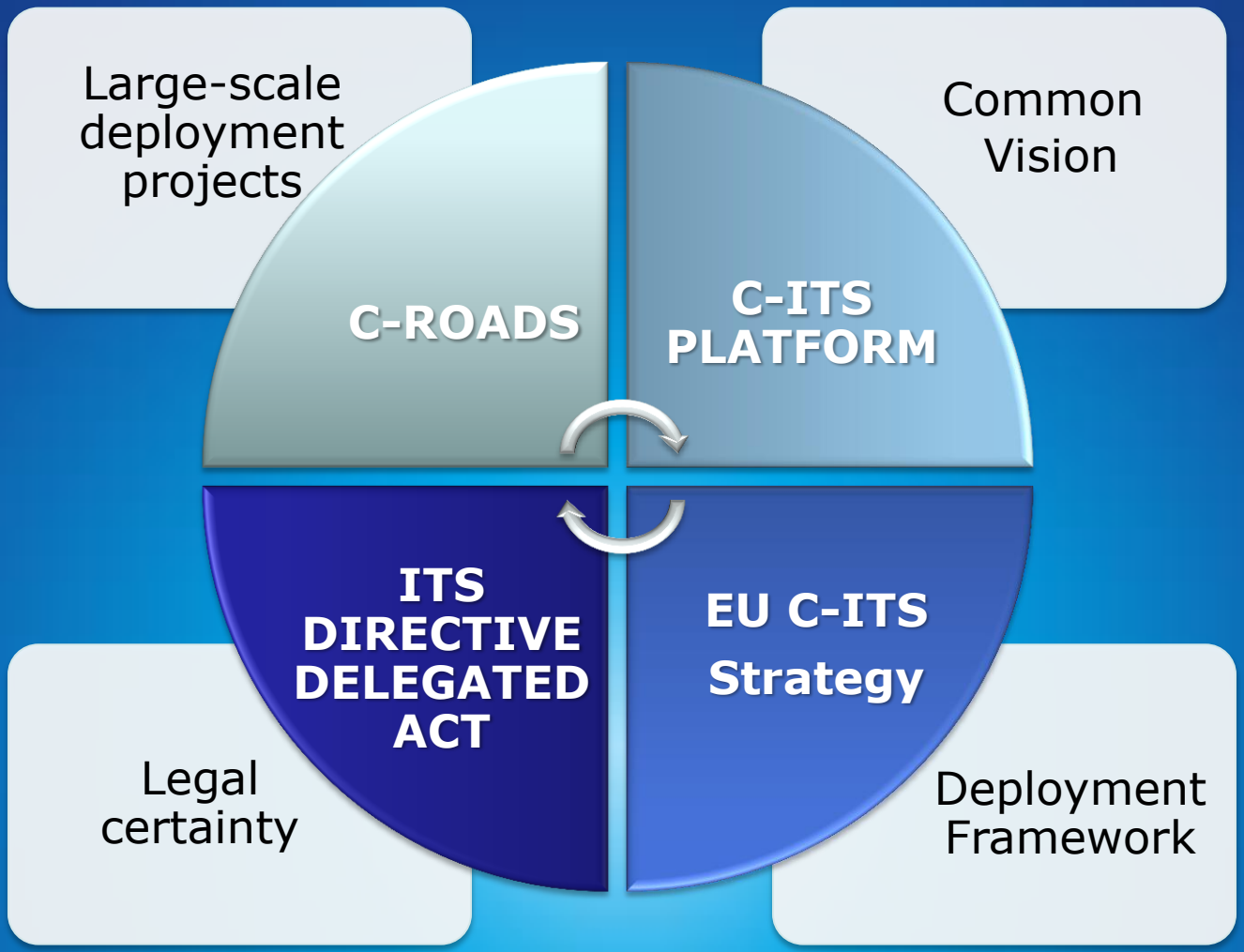
European Commission

Main outcomes – C-ITS Platform Phase I 2014- Jan 2016

- **Day-1 list of commonly agreed C-ITS services**
- A common vision how to tackle **cyber security**
- A forward looking **hybrid communication** approach
  - kick start for road safety related services based on ETSI ITS-G5 communication
  - allowing integration of cellular where and when available and appropriate
- Guiding principles for **access to in-vehicle data**
- Analysis on **privacy and data protection**
- Principles of **compliance assessment**



EU C-ITS Strategy



Intelligent Transport Systems

CEF supports ITS services along Core Network Corridors, Cooperative systems (C-ITS) and eCall

- 48 ITS projects
- € 443 million EU funding
- Total investments for ITS: 1,1 billion EUR

C-ROADS

CEF ITS Actions

ITS

- Arc Atlantique 2
- Arc Atlantique 3
- Ursa Major 2
- Ursa Major neo
- Ursa Czech Republic
- Next ITS 2
- Next ITS 3
- MedTIS 2
- MedTIS 3
- Crocodile 2
- Crocodile 3
- Crocodile 3 Hungary
- Crocodile 2 Hungary
- Crocodile 3 Croatia
- Crocodile 2 Croatia

EU ITS Platform

- ITS deployment PL
- ITS deployment SI
- ITS deployment SI 2
- ITPs in DE and AT
- ITPs in RO
- ITPs in Flanders
- ITPs in ES

- I_HeERO
- eCall.at

C-ITS

C-Roads Platform

- C-Roads AT
- C-Roads FR
- C-Roads SI
- C-Roads SI 2
- C-Roads BE/ Flanders
- C-Roads DE
- C-Roads IT
- C-Roads PT
- SCOOP@F
- InterCor
- NordicWay
- NordicWay 2
- C-Roads BE/ Wallonia
- C-Roads CZ
- C-Roads HU
- C-Roads ES

- CONCORDA
- Socrates
- CITRUS
- Timely
- AUTO C-ITS
- SOLRED
- MI2

Total CEF funding for ITS: 443,482,461 EUR
Including 121,497,176 for C-ITS

Total investments for ITS: 1,172,984,236 EUR
Including 235,632,797 for C-ITS

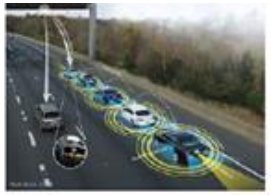
C-Roads

- Harmonised deployment of C-ITS in line with needs and priorities of Member States
- Definition of specifications (security, communication, etc.)
- Test suited and cross-border pilots
- Cooperation with EC and C-ITS platform
- 16 European States committed
- More details and description of the pilots available at www.c-roads.eu

Calls 2014-2016

ITS/C-ITS
17 projects
EC funding: 101 Million EUR

Automated Road Transport
7 projects
EC funding: 61.5 Million EUR



Connectivity for advanced level of automation

User and social acceptance

Automation pilots

Safe AD systems in complex traffic situations

Road infrastructure

Detect vehicle location and environment

Vehicle-driver interface

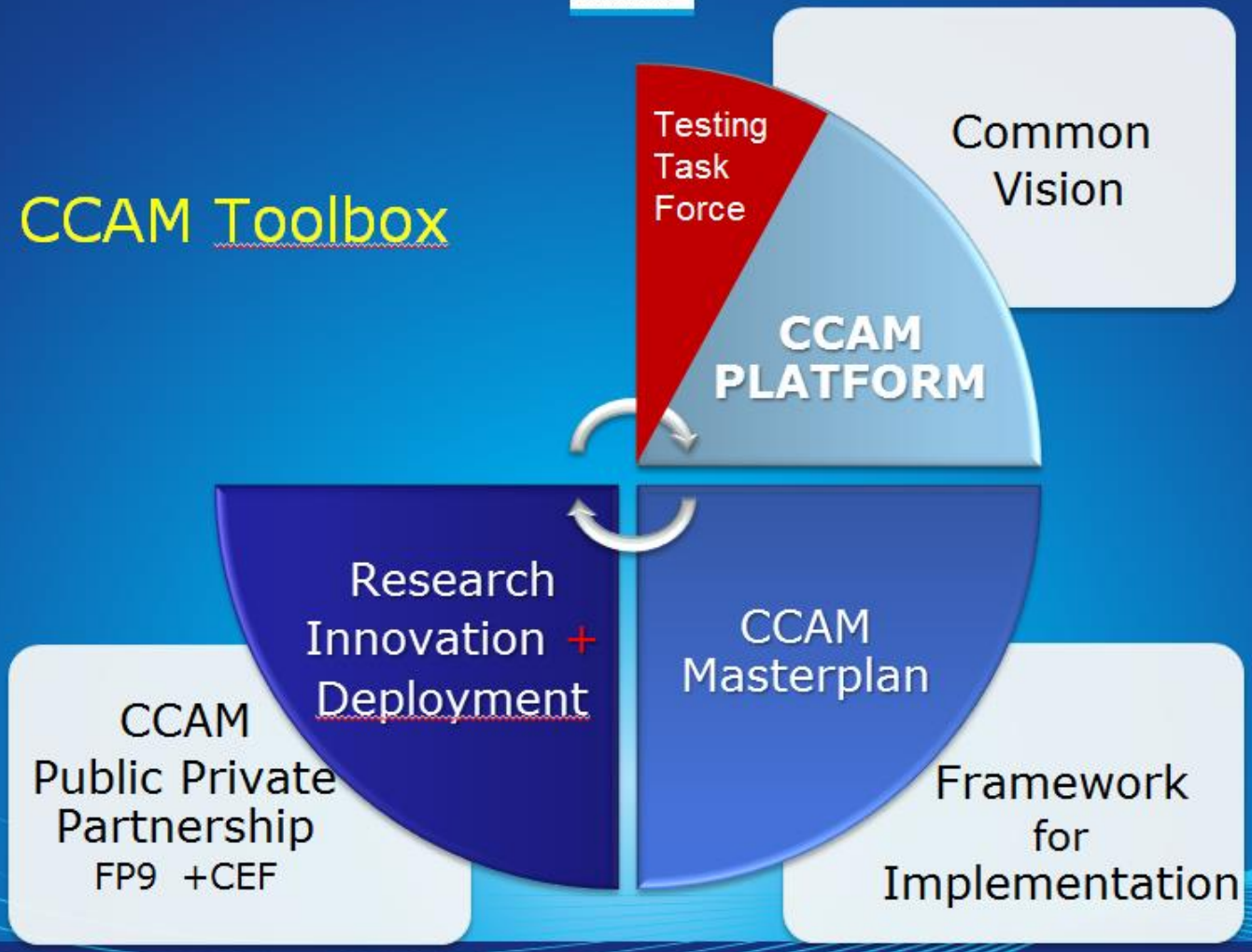
C-ITS Platform

European Commission

Main outcomes – C-ITS Platform Phase II Sept 2017

- Support and contribute to the common strategy for connected, cooperative and automated vehicles in the EU
- Continuing important work on Security, Data Protection, Business models and Compliance assessment
- Introducing **links with automation** in new WGs on
  - **C-ITS and automation in urban areas**
  - **Enhanced Traffic Management**
  - Road Safety
  - Physical and digital Road Infrastructure

After C-ITS Platform



2nd HL Dialogue

- Task Force on CCAM
- Mandate for 9 Actions
- For the development of this European methodological approach the Member States call upon the Commission to establish in close cooperation with Member States and industry a Task Force to work on the above mentioned thematic fields.

2nd HL Dialogue

European Commission

- The common European approach should at least include the following elements:

1. identifying prioritized common transport use cases,
2. developing shared objectives and a European strategy for testing
3. developing criteria for the operationalization of interoperability (based on international standards)
4. addressing (jointly industry and public authorities) spectrum use matters,
5. identifying and allocation of responsibilities of industries and Member States.

2nd HL Dialogue

- The common European approach should at least include the following elements:

6. mapping of the various formats of testing of CAD functions on various road categories and testing environments, as well as cross border corridors,
7. establishing in a phased approach a European map of test areas
8. implementing a framework for the exchange of knowledge, experience and data
9. identifying and developing long term European targets on the deployment of CAD

European Commission

WG Enhanced Traffic Management

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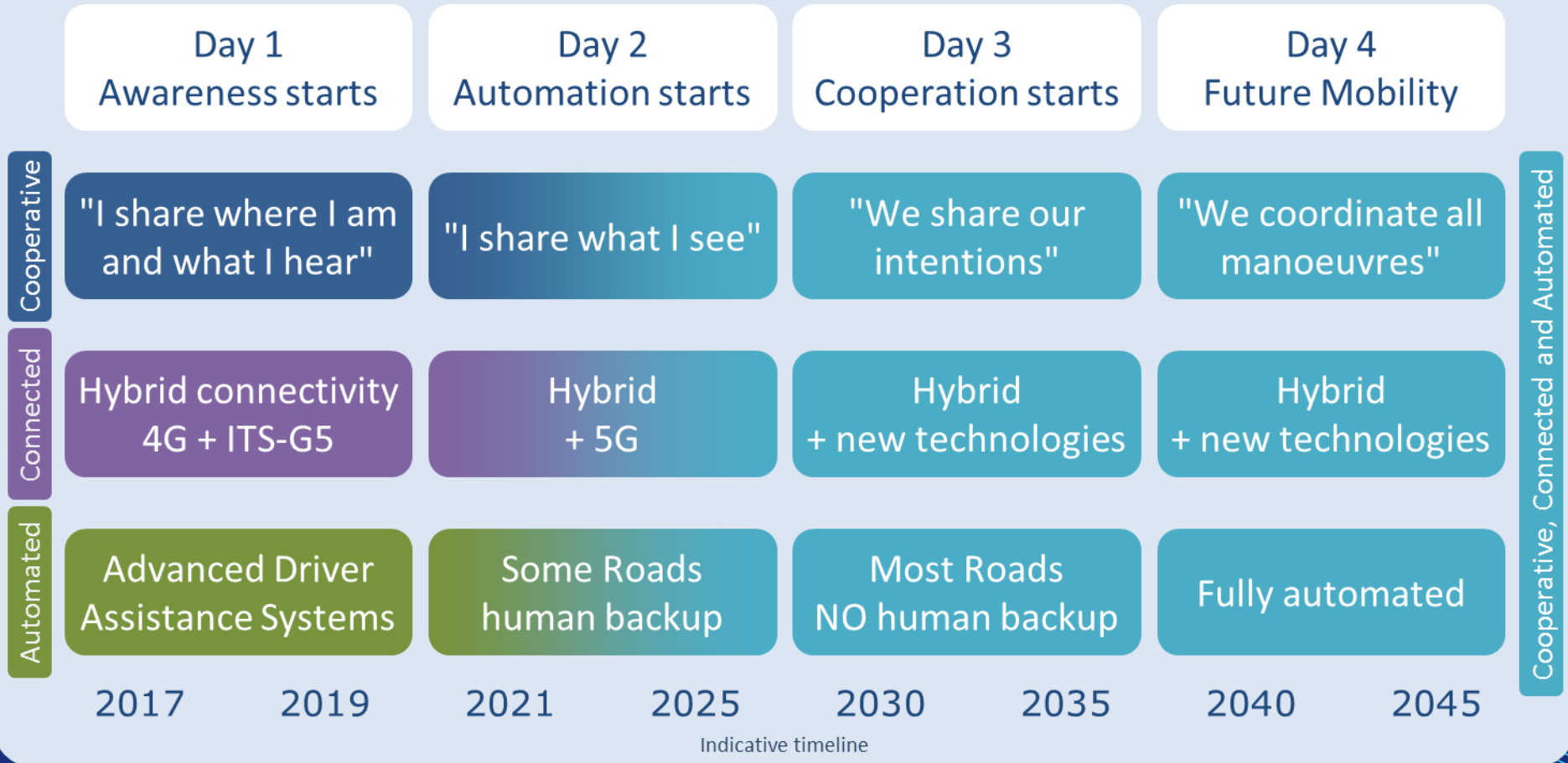
Mobility and Transport

CONNECTING EUROPE

European Commission

Towards Cooperative, Connected and Automated Mobility



Context

- Today, OEMs and Service providers' nomadic devices offer navigation and routing advice. In the future, the data collected with cooperative, connected and automated systems will grow in volume, thus improving the quality of navigation services. **These services will have a big influence on traffic behaviour**.

- However, in order for cooperative, connected and automated systems, to produce the expected collective benefits in terms of road safety and traffic flow efficiency, **alignment with the public sector is required.**

- The group agreed that traffic regulations (static or dynamic; mandatory or advised) need to be digitalised and become 'electronic regulations'. **Traffic managers will therefore need to translate their traffic management policies** (Mobility plans, Traffic Management Plans and Traffic Circulation Plans) **into a digitalised standardised language**, so that it can be exchanged with the other stakeholders and become much more effective.

Outcomes

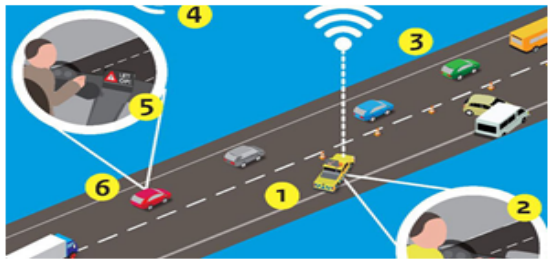
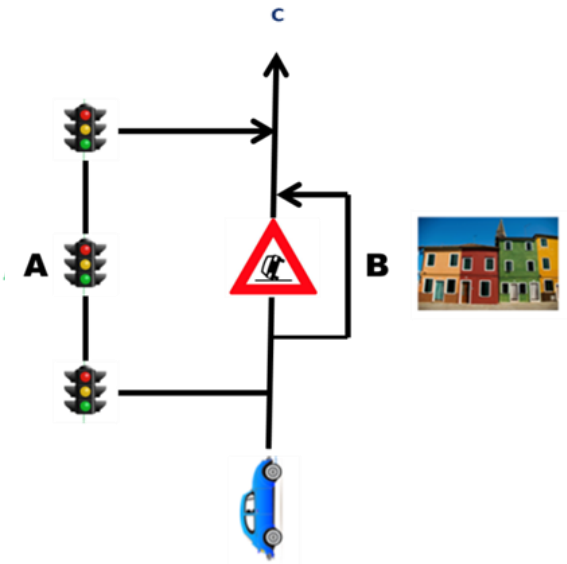
- The WG followed an operational approach aiming to understand what Cooperative Traffic Management could mean **in practice,** when compared to today's procedures, and concluded with these needs:

- To develop the **building blocks** for digital Traffic Management Plans (TMPs) and Traffic Circulation Plans (TCPs), specifically for the deployment of Cooperative Incident Management:
  - Classification of Roads;
  - Geo-fencing mechanisms;
  - Network performance LOS;
  - Agreement to the triggering conditions.

- To develop a **digital library of TMPs and TCPs** to be available via the **National Access Points (NAPs).** The library should be the outcome of a joint effort from both the private and public sectors.

Cooperative Traffic Management

- Scenario for Cooperative Incident Management, was established and a three-step approach was proposed.

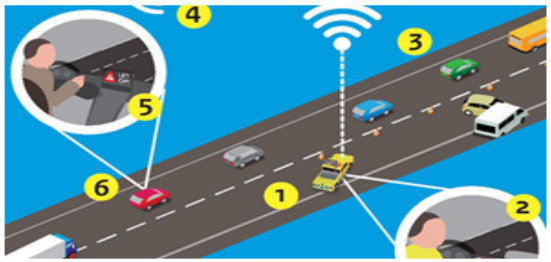
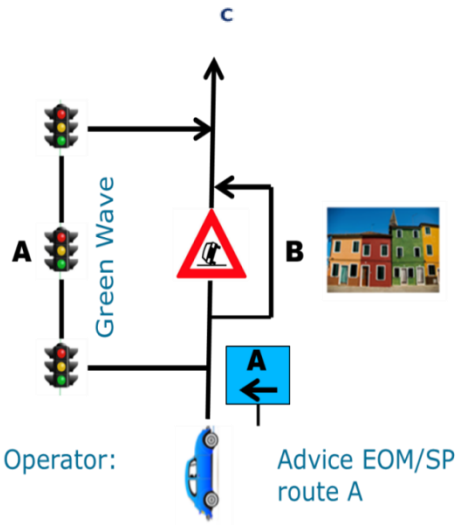
local	Regional
	

Cooperative Traffic Management

- Scenario for Cooperative Incident Management, was established and a three-step approach was proposed:
    1. **Detection** of an incident, using current and future sensors (loops, floating vehicle data);
    2. Creation of an **Common Operational Picture**;
    3. Implementations of **Local and Regional traffic management measures**.
- **Local measures** can help to change lane or adjust speed, improving safety and flow efficiency, using appropriate V2V and V2I communications.
- **Regional mea**sures relate to the tactical operational instruments to put into place, such as Traffic Management Plans. Depending of the scenario, the Regional measures can be understood as a recommendation or an obligation.

Cooperative Traffic Management

- Scenario for Cooperative Incident Management, was established and a three-step approach was proposed.

local	Regional
	

Cooperative Traffic Management

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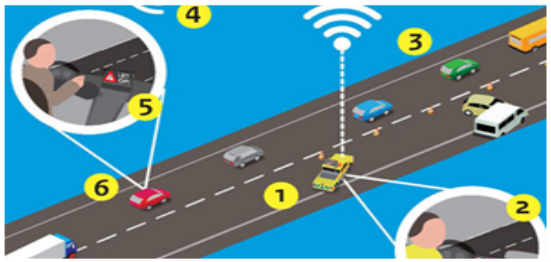
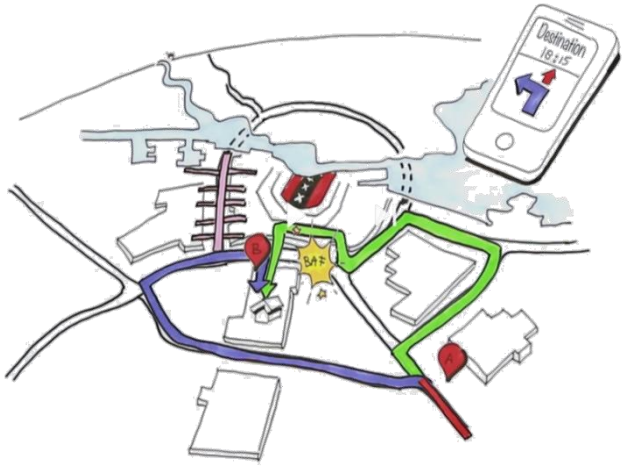
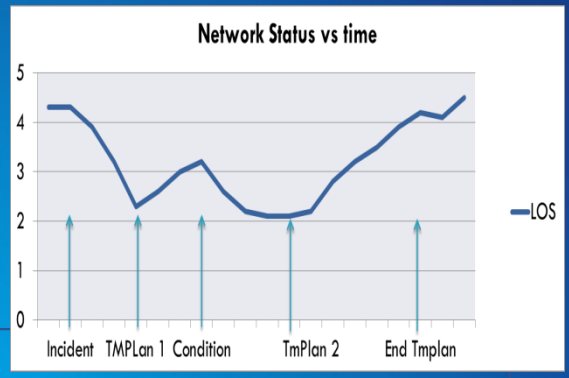
	

Cooperative Traffic Management

- Building Blocks for Traffic Management Plans



Steps	Road classification and priority	Zoning (identify areas to avoid)	Define Minimum Network Performance	Define Trigger Levels	Establish Agreements
Which Parties?	Public	Public, working with private organisations	Public	Public – Private Cooperation	Public – Private Cooperation
Supporting Tools	Common Operational Picture Tools				

Recommendations

- To develop the building blocks for digital TMPs and TCPs **taking into account the public's authority hierarchy**, including enforcement bodies, with competences for the same geographical area, e.g. local, regional, national or cross border.

- To develop the building blocks for digital TMPs and TCPs using an **'ITIL' framework**, establishing the minimum common functional and organizational needs between the stakeholders.

- To **develop pre-established digital TMPs**, describing the local and regional measures/actions to face e.g. recurrent congestion situations, roadwork or planned events.

- To develop a **digital library of TMPs and TCPs** to be available via the National Access Points (NAPs). The library should be the outcome of a joint effort from both the private and public sectors.

Recommendations

- To **foster cooperation** between the different players and enable coopetition for the development of the common tools and building blocks.

- To **start piloting** digital TMPs, TCPs and the building blocks, in the comprehensive TEN-T Road Network, including urban nodes. Road authorities/operators should be in charge, acting as the 'orchestra conductor', being the only one to have a “global system” view of the road network and its performance, including safety.

- **This work to continue**, beyond the second phase of the C-ITS Platform, under the European's Commission coordination.

ITS&C-ITS in Cities

Why is it more complicated to deploy ITS in urban areas?

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Urban ITS Mandate Deliverables

1. Allocated for 2017

#	Domain
1	**LOCATION REFERENCE HARMONISATION** Identifying the exact location of different vehicle positions (car – public transport etc.) use different systems, for urban traffic management purposes a single uniform way to conduct this needs to be realised –a harmonised location referencing translator between existing systems will be developed, cities want uniform model to follow.
2	**TRAFFIC MANAGEMENT SYSTEMS STATUS, FAULT AND QUALITY STANDARDS** Quality/performance criteria standard to be used by cities for service level agreements of traffic management performance (availability and timeliness of data transactions i.e. traffic volumes, occupancy rates, average speed) for the validation and assessment of traffic management services from suppliers – cities want uniform model to follow.
3	**EMISSIONS MANAGEMENT IN URBAN AREAS** Standards for traffic management centres to measure emissions management in segregated parts of the city (low emission zones vs other parts of the city)

European Commission

Urban ITS Mandate Deliverables

2. Allocated for 2018

#	Domain
4	**MIXED VENDOR ENVIRONMENT** Open interface standard to integrate widely used traffic adapted control and data processing methods in traffic signal controllers for mixed vendors environment
5	**TRAFFIC MANAGEMENT DATA MODELS AND INTERFACES** Coherent data model to cover traffic volumes, occupancy rates, average speed times, traffic conditions, and circulation/traffic management plans and interface to exchange network performance data (extended scope of DATEX)
6	**DATA MODELS AND DEFINITIONS FOR NEW MODES** Extending scope of public transport standards to cover car-sharing, bike-sharing , cycling data

ITS&C-ITS in Cities

European Commission

Cooperative and Connected Mobility in a City

Multimodal (cars, buses, trucks, trams, VRU)

Traffic Management (cooperation with public and private)

Integration with **Urban Planning** and **Mobility Strategies**

Upgrading and complementing **existing Urban ITS Systems**

Focus on **enabling local policy goals** (modal shift, access control, parking, VRU protection)

ITS&C-ITS in Cities

European Commission

Facilitating exchange of information and best practice

www.eltis.org

The urban mobility obse…on, knowledge and experien… in Europe

1. Discover: case studies, EU legislation & policies
2. Resources: EU funding, pictures, videos
3. Participate: events
4. Mobility plans: everything related to SUMPs!

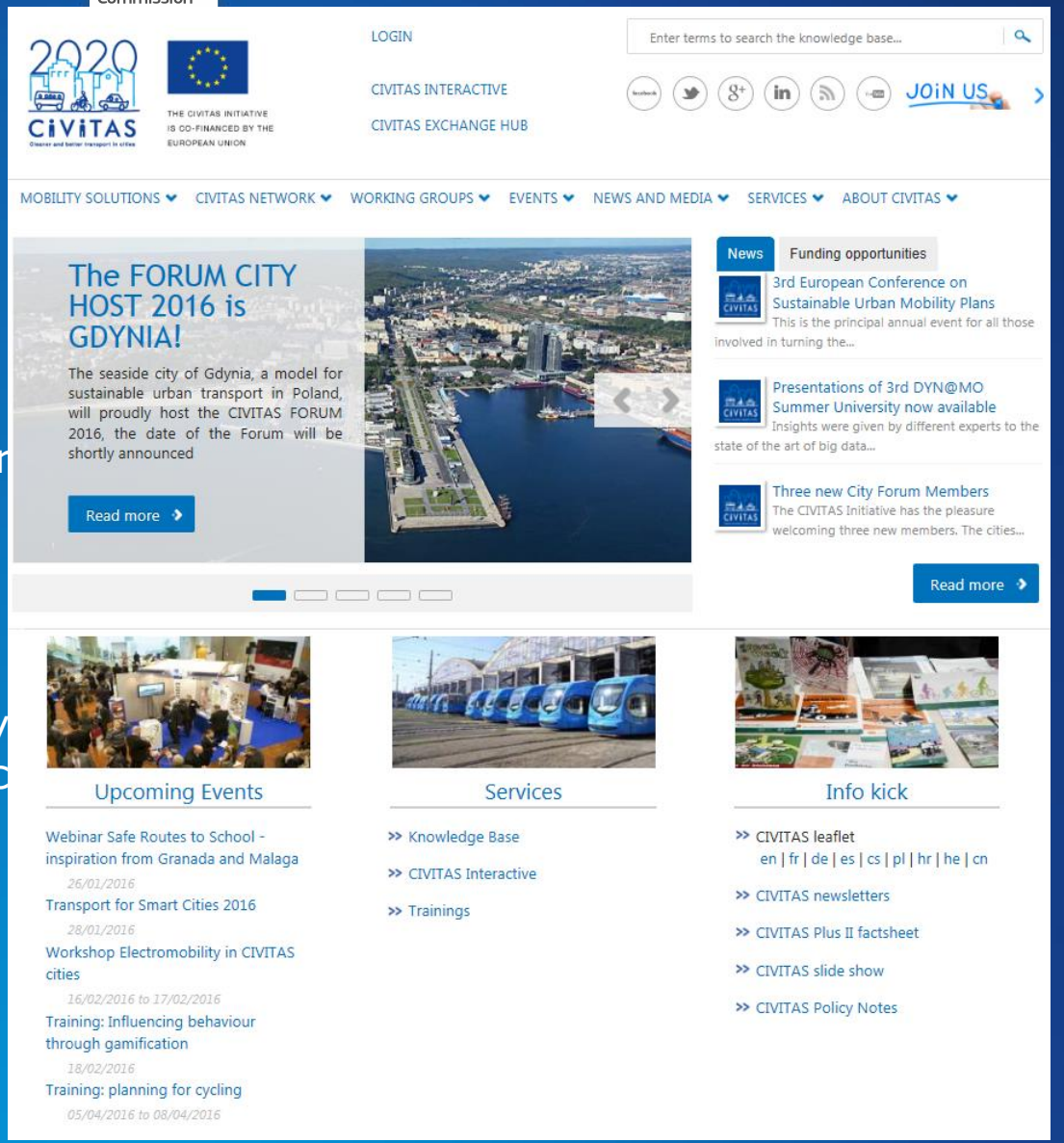
ITS&C-ITS in Cities

European Commission

CIVITAS (www.civitas.eu):

City, **Vita**lity and **S**ustainability. Initiative launched in 2002 to redefine transport measures and policies in order to create cleaner, better transport in cities

- Join Us: for cities to become members of the CIVITAS networ (free)
- Mobility solutions: CIVITAS demonstration measures in different areas or urban mobility (public transport, clean fuels etc
- Services: CIVITAS Knowledge Base and documents
- Policy Notes



ITS&C-ITS in Cities

European Commission

THE CIVITAS INITIATIVE IS CO-FINANCED BY THE EUROPEAN UNION

- CIVITAS is a network of cities for cities dedicated to cleaner, better transport in Europe and beyond. Since 2002, the CIVITAS Initiative has tested and implemented over 800 measures and urban transport solutions as part of demonstration projects in more than 80 Living Lab cities Europe-wide.
    - More than **91 ITS measures** were implemented in **43 cities (**traffic monitoring, management and enforcement, real-time road user information, public transport communication)
- One of the 10 CIVITAS Thematic Groups is **Transport Telematics**
- Urban ITS Policy Note 2016 (inform decision makers and urban professionals on relevant topics that currently play an important role in urban mobility planning and operations).
- Focus for ITS WG in latest CIVITAS SATELITTE Phase is:
    - **Travel and Traffic Data (Mobility Services)**
    - **Cooperative ITS**
    - **Automation**

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Mobility and Transport

ITS&C-ITS in Cities

European Innovation Partnership on Smart Cities and Communities – building a market place

1. **Support roll-out of mature replicable technologies – foster open collaboration**

2. **Focus on intersections**
   → Energy, Transport and ICT

3. **Facilitating match-making of cities and companies**

4. **Action cluster initiatives to support project roll out(e.g.):**
   - Smart electric mobility (EV4SCC)
   - Smart mobility services

More Information

Directorate-General for Mobility and Transport
http://ec.europa.eu/transport/index_en.htm

ITS Action Plan and Directive
https://ec.europa.eu/transport/themes/its/road/action_plan_en

Cooperative, connected and automated mobility (C-ITS)
https://ec.europa.eu/transport/themes/its/c-its_en

Thank you!
Pedro.BARRADAS@ec.europa.eu
European Commission - DG MOVE
B.4 Sustainable & Intelligent Transport