



# EU developments in Intelligent Transport Systems

**EUROMED Workshop**  
**Crowne Plaza Hotel – Le Palace, Brussels**

**5<sup>th</sup> of July 2017**  
**Pedro.BARRADAS@ec.europa.eu**  
**European Commission – DG MOVE**



# DATA

*'is changing the transport DNA,  
unlocking opportunities to achieve a more  
intelligent, safer, cleaner transport  
and have a more efficient transport system.'*

*The 4<sup>th</sup> Industrial Revolution*



@Transport\_EU

Mobility and  
Transport

CONNECTING  
EUROPE

# ITS Action Plan



## Area 1

### Optimal Use of Road, Traffic & Travel Data

EU-wide real time travel information

Collection & provision of road data

Accurate public data for digital maps

Free minimum information service

Promotion of multi-modal journey planners

## Area 2

### Continuity of Traffic & Freight Management

Continuity of ITS services

Services for freight transport & logistics

European ITS Framework architecture

Interoperability of electronic toll systems

## Area 3

### Road Safety and Security

Promotion of in-vehicle safety systems

Introduction of Europe-wide eCall

Regulatory Framework on HMI

Guidelines: Impact on Vulnerable road users

Guidelines: Secure parking places for trucks

## Area 4

### Integration of Vehicle & Transport Infrastructure

Open in-vehicle Platform architecture

Development & evaluation of coop. systems

Specifications for V2X, I2X communication

Mandate for European standardisation

## Area 5

### Data Protection & Liability

Security & data protection

Addressing liability, esp. in-vehicle safety systems

## Area 6

### European ITS Coordination

Legal framework for EU ITS cooperation

Decision support toolkit for ITS investments

Guidelines for public funding for ITS

Collaboration platform on urban ITS



@Transport\_EU

Mobility and Transport

**CONNECTING**  
**EUROPE**



## **ITS Directive (2010/40/EU)**

### **Supporting Framework and Enabling Conditions**

**Data sharing mechanisms**

**Data interoperability**

**Data format**

**Quality framework**

**Interoperability and  
continuity of services**

**National  
Access  
Point**

**Optimal Use of Road,  
Traffic and Travel Data**

**Continuity of  
Traffic and  
Freight Management**

**Road Safety  
and Security**

**Linking Vehicle and  
Transport Infrastructure**

# Specifications



Priority Action (a)  
adoption 31 May 2017

- EU-wide **multimodal travel information** services

Priority Action (b)  
Adopted

- EU-wide **real-time traffic information** services

Priority Action (c)  
Adopted

- Road **safety related minimum universal traffic information** free of charge to users

Priority Action (d)  
Adopted

- the Interoperable EU-wide **eCall**

Priority Action (e)  
Adopted

- **Information** services for **safe and secure parking** places for trucks and commercial vehicles

Priority Action (f)  
On hold

- **Reservation** services for **safe and secure parking** places for trucks and commercial vehicles



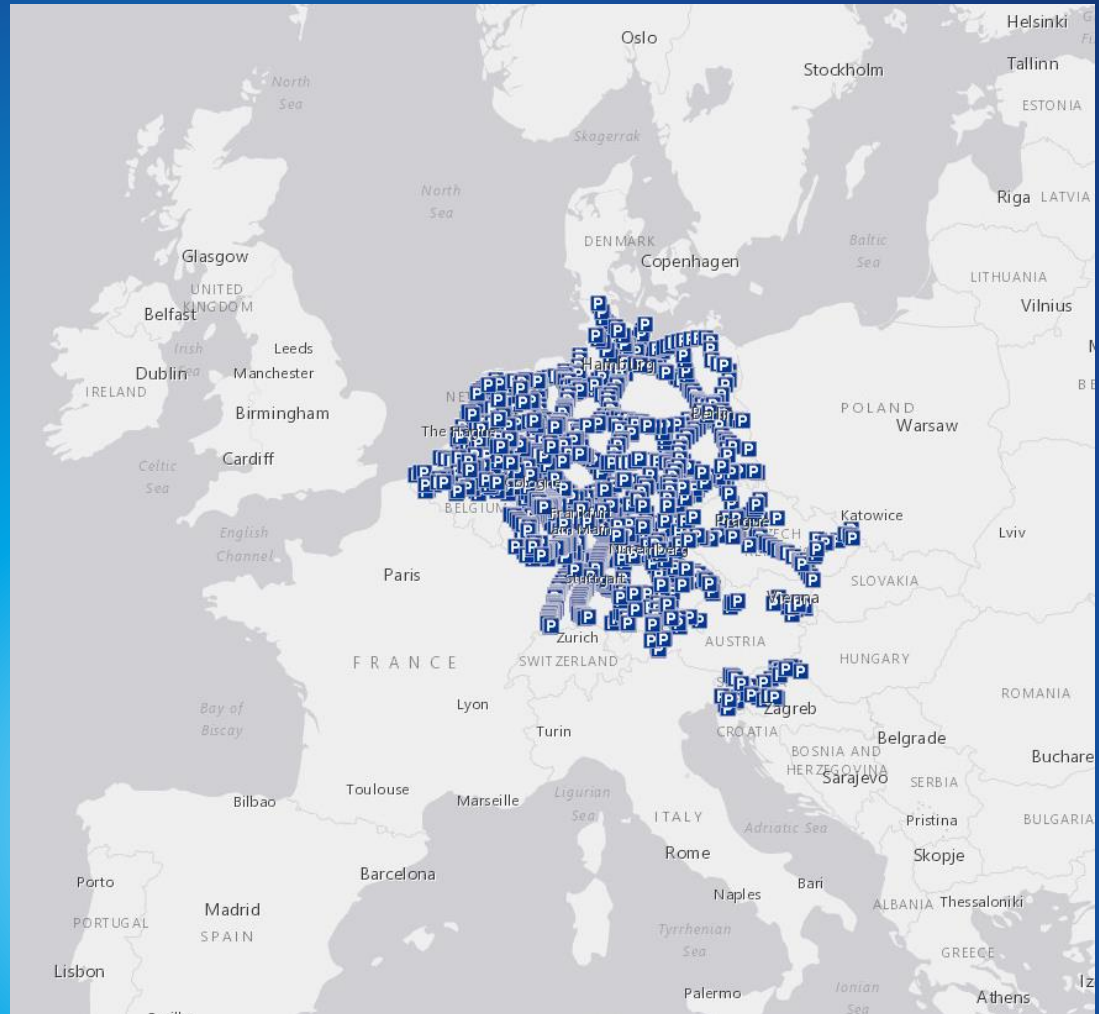


# 'E' - European Access Point Truck Parking



DATEX II data of Austria, Belgium (Flanders), Czech Republic, Germany, Netherlands, Slovenia and Switzerland already successfully published on EU Open Data Portal!

Currently in the uploading process with other countries

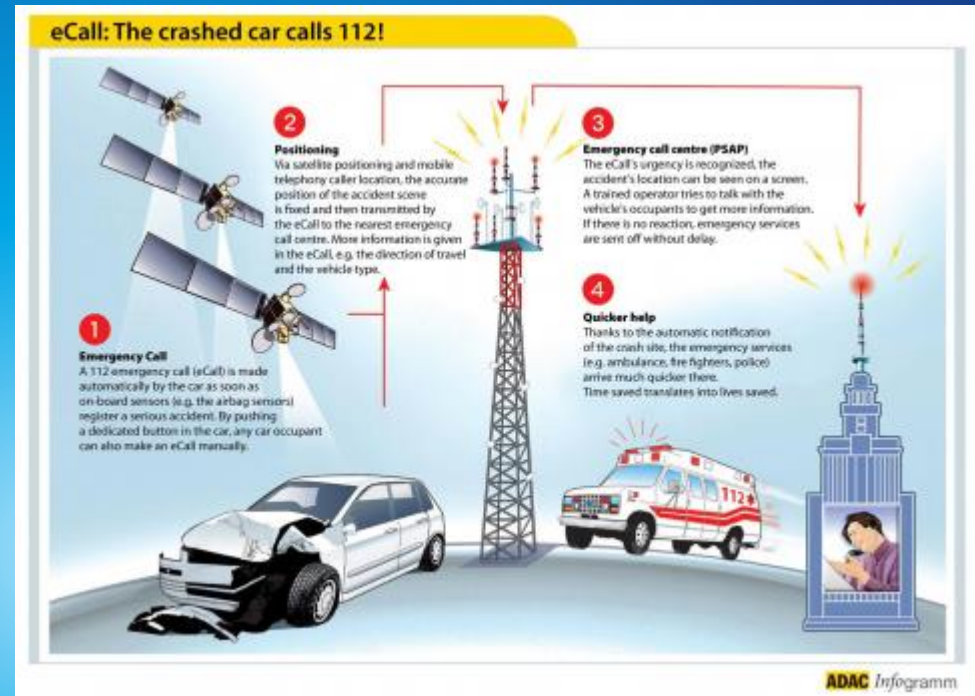


[http://ec.europa.eu/transport/themes/its/safe\\_and\\_secure\\_parking\\_en.htm](http://ec.europa.eu/transport/themes/its/safe_and_secure_parking_en.htm)

# 'D' - eCall



- Specifications for the upgrading of the Public Safety Answering Point (PSAP) infrastructure required for handling of eCalls
- Every eCall PSAP is equipped to handle eCalls and receive the MSD originating from the in-vehicle equipment according to the standards
- The eCall PSAP shall have access to an appropriate Geographical Information System (GIS) allowing the eCall PSAP operator to identify the position and heading of the vehicle



# 'C' – Road Safety Traffic Info



- The events or conditions covered :
  - (a)temporary slippery road;
  - (b)animal, people, obstacles, debris on the road;
  - (c)unprotected accident area;
  - (d)short-term road works;
  - (e)reduced visibility;
  - (f)wrong-way driver;
  - (g)unmanaged blockage of a road;
  - (h)exceptional weather conditions.
- The information provided on the road safety-related events or conditions shall include the following items:
  - (a)location of the event or the condition;
  - (b)the category of event or condition and, where appropriate, short description of it;
  - (c)driving behaviour advice, where appropriate.



# 'B' – Real Time Traffic information



Static road data	Dynamic road status data	Traffic data
Road network links and physical attributes (e.g. geometry, road width, number of lanes, gradients, junctions)	Road / lane / bridge closures, Accidents, Incidents	Traffic volume
Road classification	Overtaking bans on HGV	Speed
Traffic signs on traffic regulations and dangers (e.g. access conditions for tunnels / bridges, permanent access restrictions, other)	Road works, Poor pavement conditions	Location and length of queues, Travel times
Speed limits	Dynamic speed limits	Waiting time at border crossings to non-EU countries
Freight delivery regulations, Traffic circulation plans	Temporary traffic management measures	
Location of tolling stations	Direction of travel on reversible lanes	
Tolled roads, fixed RUC, payment methods	Variable RUC, payment methods	
Location of parking places / service areas	Availability of parking places, cost of parking	
Location of charging points for EV and conditions of use	Availability of charging points for EV	
Location of CNG / LNG / LPG stations	Availability of delivery areas	
Location of public transport stops and interchange points	Weather conditions affecting road surface and visibility	
Location of delivery areas		

# 'A' – Multi Modal Travel Info Services



## **Group 1 static data**

Address identifiers, points of interests, access nodes, geometry of access nodes, network topology, timetables, accessibility information, road/cycle/pedestrian network etc.

## **Group 2 static data**

Car-sharing, bike-sharing stations, refuelling points, bike parking, basic ticket information etc.

## **Group 3 static data**

Detailed cycle network attributes and estimated travel times by day type and time-band etc.

## **[Group 1 dynamic data**

Disruptions, real-time status information - delays, cancellations, guaranteed connections monitoring, status of access nodes (platform information, operational lifts/escalators, closed entrances and exit locations)

## **Group 2 dynamic data**

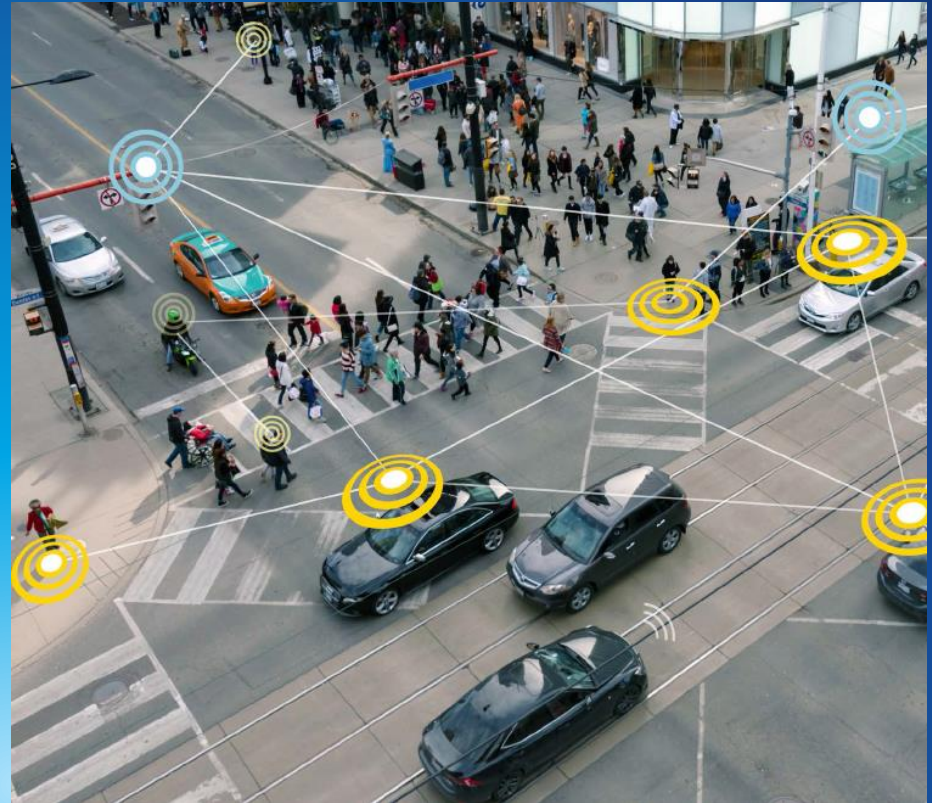
Car-sharing availability, bike sharing availability etc.

## **Group 3 dynamic data**

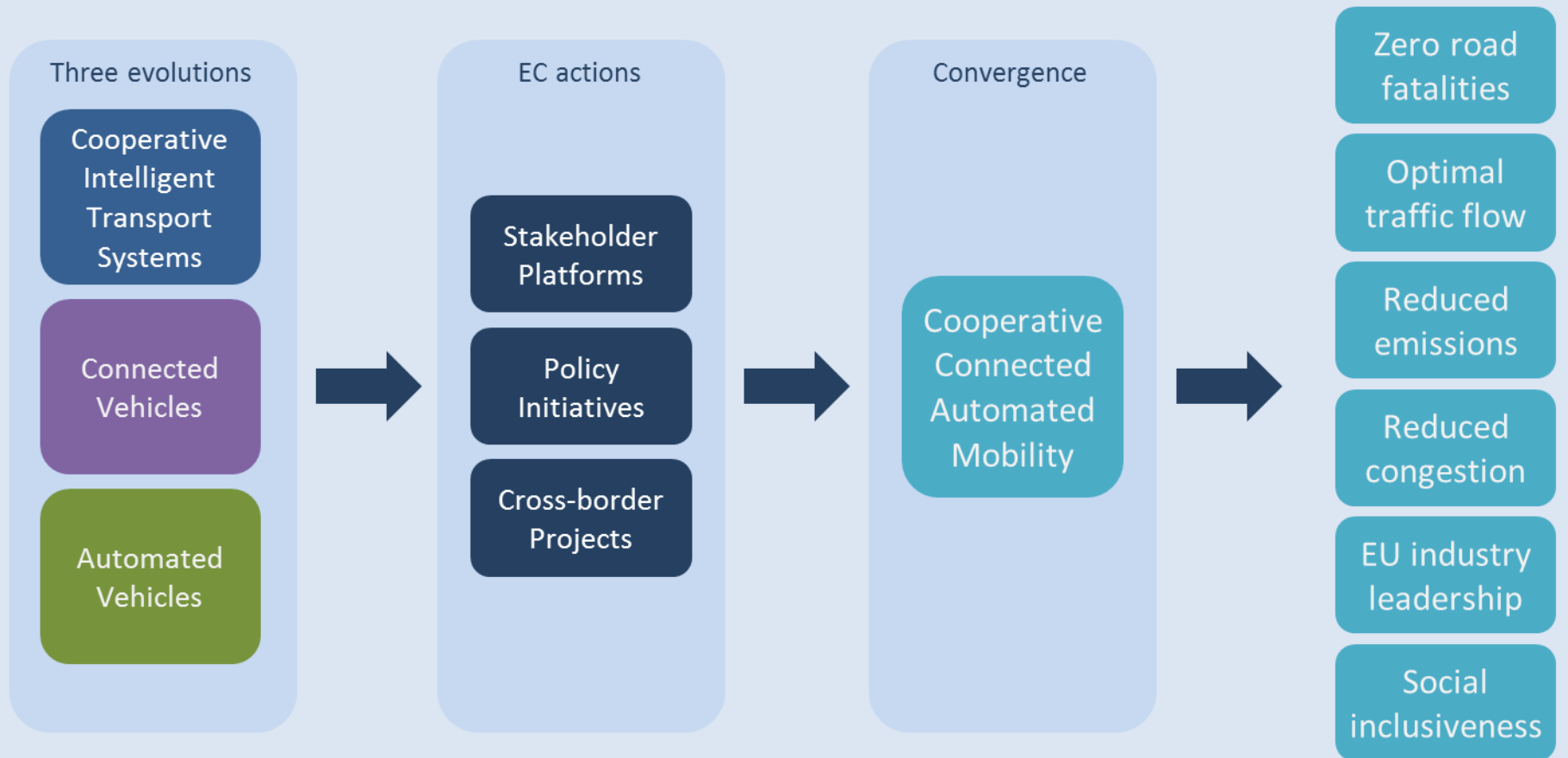
*Car parking spaces (on-street) etc.*

At discretion of M.S.

# C-ITS strategy, status C-ITS deployment platform

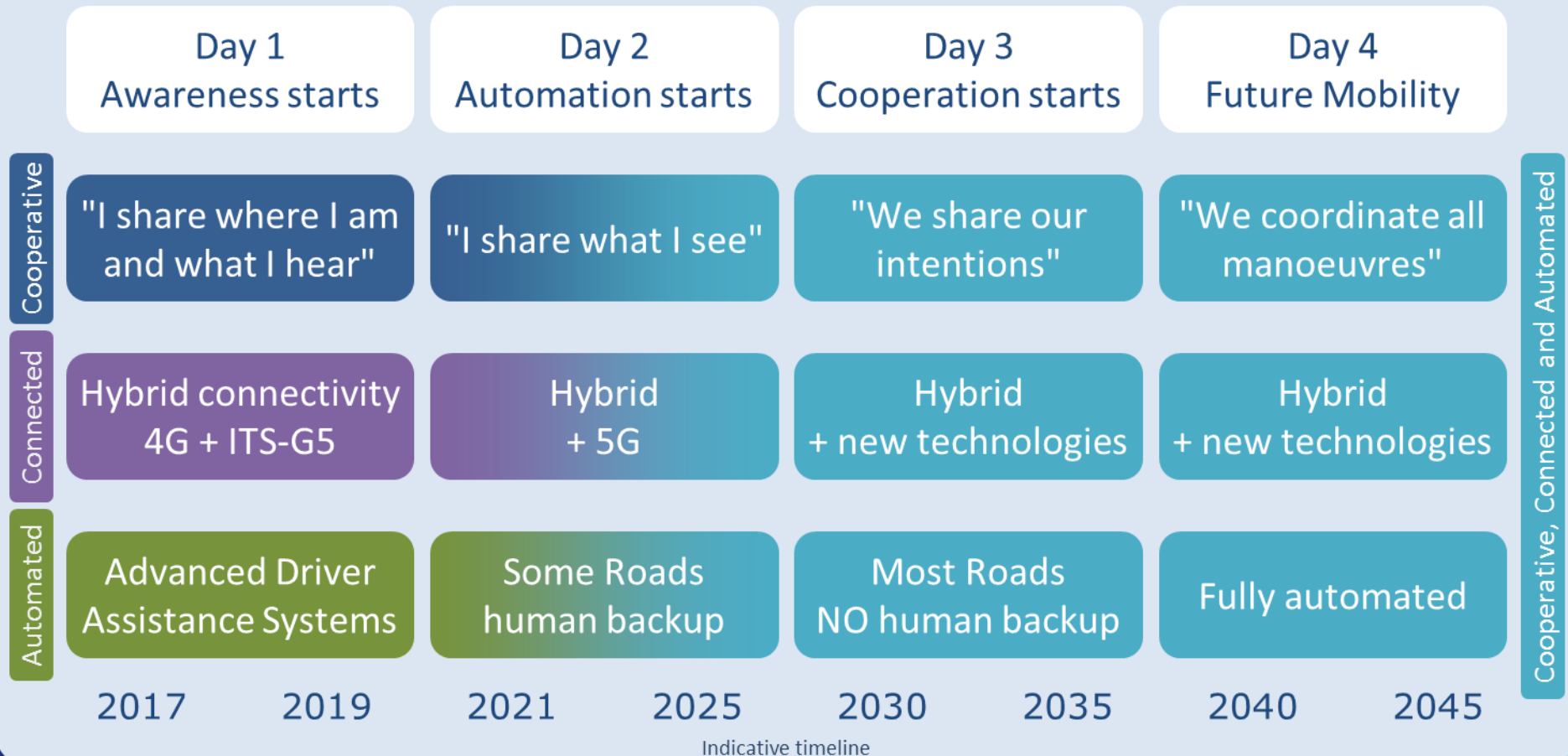


## From technology to sustainable mobility

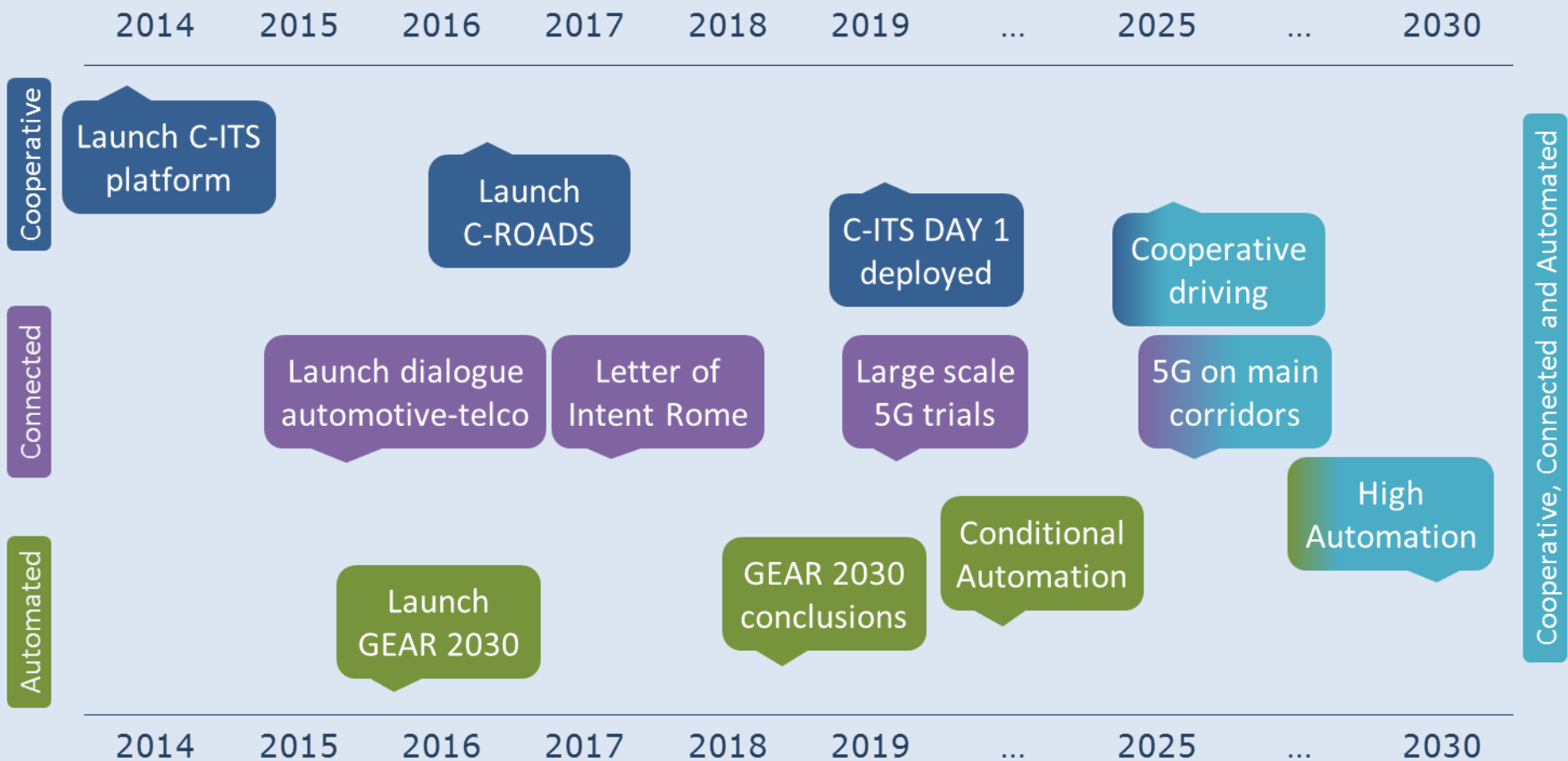




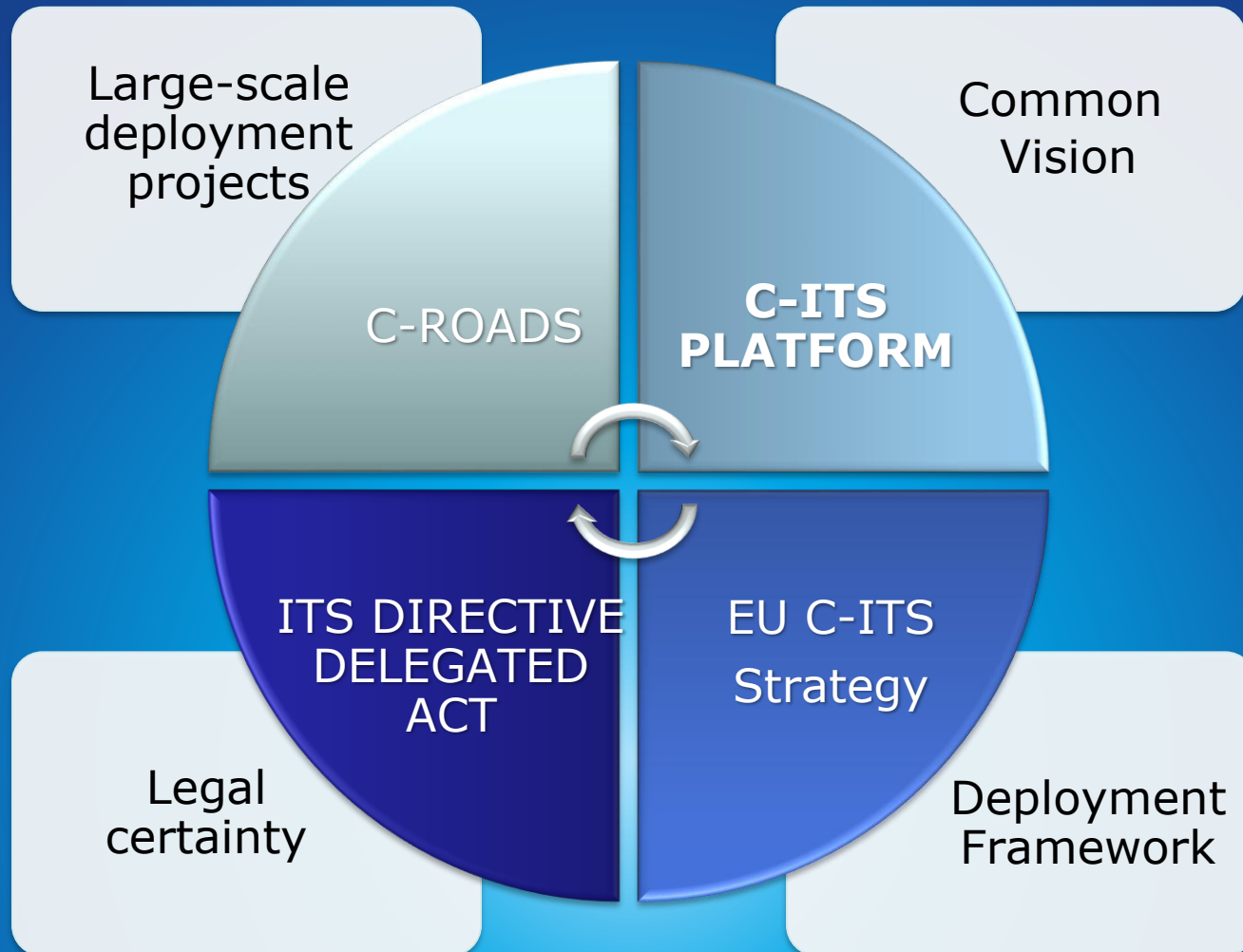
# Towards Cooperative, Connected and Automated Mobility



## Stakeholder Platforms for shared Visions



# EU C-ITS Strategy

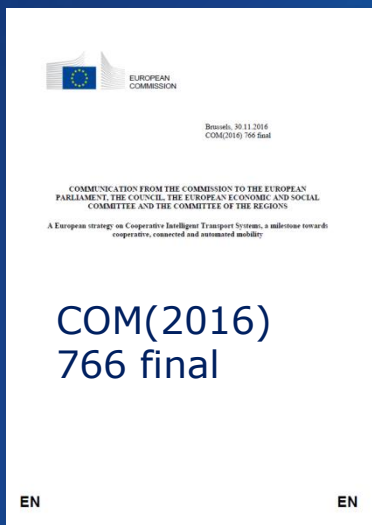
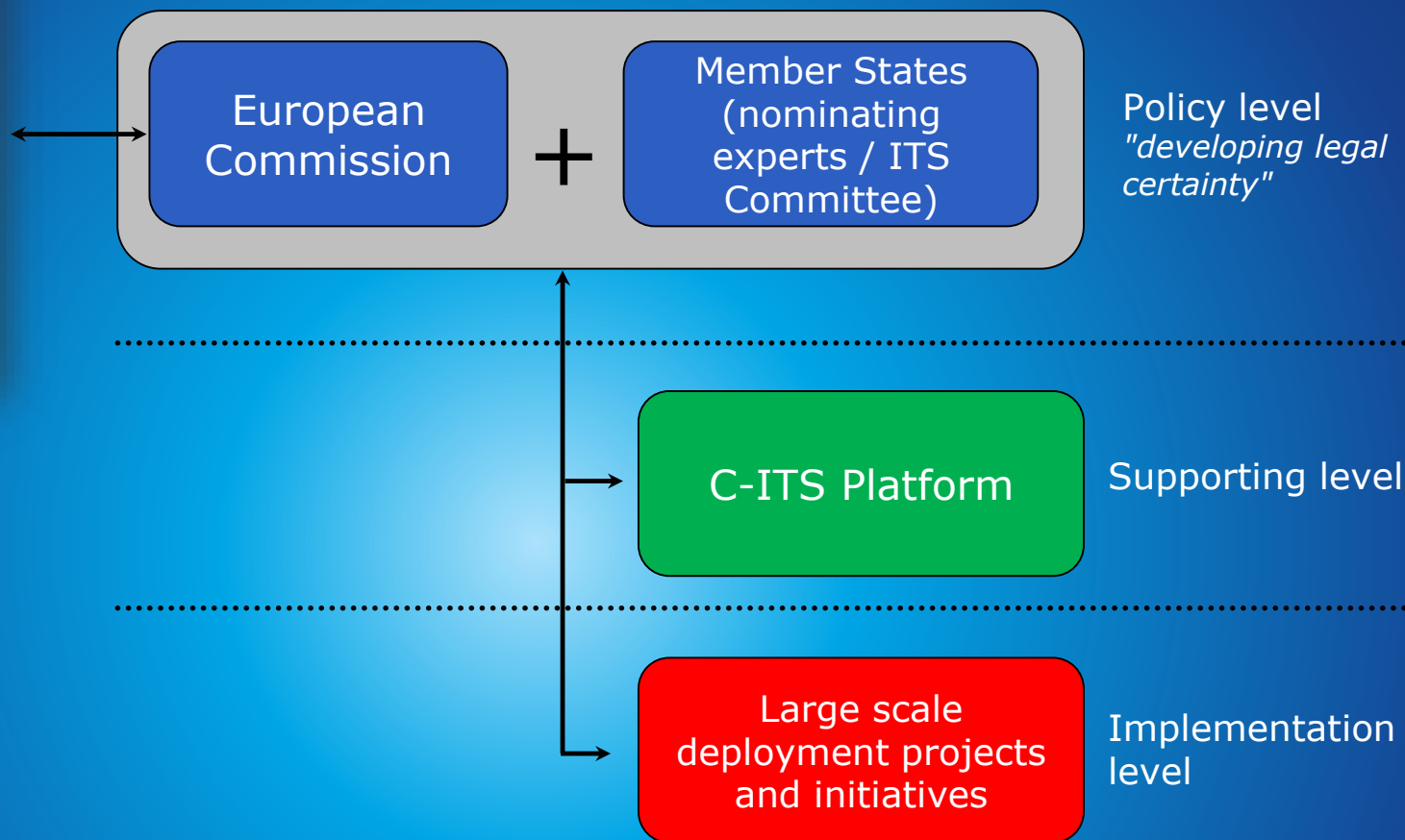


# EU C-ITS Strategy



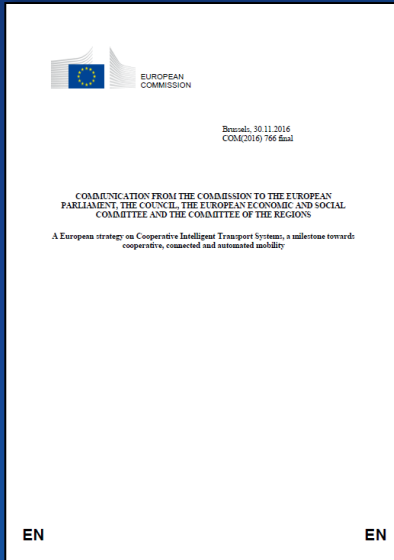
## Preparation of a C-ITS Delegated Act under the ITS Directive 2010/40/EU

*Applying a learning by doing approach*





# EU C-ITS Strategy COM (2016) 766



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

COM(2016) 766 final

30.11.2016

[http://ec.europa.eu/transport/sites/transport/files/com20160766\\_en.pdf](http://ec.europa.eu/transport/sites/transport/files/com20160766_en.pdf)



# EU C-ITS Strategy COM (2016) 766



## adopted 30 Nov!

- First EC Deliverable following the Declaration of Amsterdam of EU Transport
- “Making C-ITS a reality from 2019 onwards”
- Considering Delegated Act in 2018
  - Continuity of C-ITS services and interoperability
  - Security of C-ITS communications
  - Practical implementation of the GDPR
  - Compliance assessment

[https://ec.europa.eu/transport/themes/its/c-its\\_en](https://ec.europa.eu/transport/themes/its/c-its_en)

Mobility and  
Transport



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

EN

EN

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

- 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





## C-ITS platform phase II

- 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







## C-ITS Platform Phase II

Continue supporting C-ITS deployment – implement recommendations of first phase

Analyse how cooperation, connectivity and automation converge

C-ITS Platform Report Phase II - September 2017





## Interoperability at all levels

- EC will make full use of the **C-Roads platform** as the coordination mechanism for C-ITS deployment at operational level.
- **Member States** should join the C-Roads platform for testing and validation, ensuring the interoperability of Day 1 C-ITS services across the EU.
- **C-ITS deployment initiative** should complete their **C-ITS communication profiles** and publish them.
- **Industry players** should use these opportunities for validation.



Co-financed by the European Union  
Connecting Europe Facility



## The C-Roads Platform

- Harmonised deployment of C-ITS in Europe
- Definition of specifications (security, communication, etc.)
- Cross-border pilots & testing in Member States, open to all
- Close cooperation with EC and C-ITS platform, Coordination mechanism of ALL European C-ITS implementation initiatives
- Already over €150 M in deployment investment, expected to be doubled with next CEF Call



**C-ROADS EC Press release**  
**07/10/2016**

[About this site](#) | [Legal notice](#) | [Contact](#) | [Search](#)

**MOBILITY AND TRANSPORT**

European Commission >

[Home](#) [Transport Modes](#) [Transport Themes](#) [Media Corner](#) [Facts & Fu](#)

**Intelligent transport systems**

**European Commission, Member States and industry join forces on the deployment of connected, cooperative and automated driving in Europe**

07/10/2016

This week, the European Commission together with representatives of 12 EU Member States and industry launched the C-ROADS platform – a set of projects on connected, cooperative and automated driving. The C-ROADS platform gathers real-life deployment activities taking place in Austria, Belgium, Czech Republic, Finland, France, Germany, Hungary, Italy, Netherlands, Slovenia, Sweden and UK.

By linking all deployment activities and planning intensive cross-testing, C-ROADS is making cross-border cooperative intelligent transport systems a reality today. The projects serve to make European roads safer for

# Current CEF-T ITS projects



European  
Commission

European  
Commission

## ITS Works

Arc Atlantique 2

Ursa Major 2

Next ITS 2

MedTIS 2

Crocodile 2

Crocodile 2 Hungary

Crocodile 2 Croatia

ITS deployment PL

ITS deployment SI

ITPs in DE and AT

ITPs in RO

ITPs in Flanders

ITPs in ES

**EU ITS  
Platform**

**C-Roads  
Platform**

I\_HeERO

eCall AT

## C-ITS Pilots

C-Roads AT

SCOOP@F

C-Roads FR

NordicWay

C-Roads CZ

Timely

C-Roads SI

AUTO C-ITS

C-Roads BE

SOLRED

C-Roads DE

CITRUS

InterCor

**Total CEF funding for ITS: 318,449,472 EUR  
Including 71,293,517 for C-ITS**

**Total investments for ITS: 731,570,742 EUR  
Including 129,338,280 for C-ITS**

Intelligent  
and Sustainable  
Mobility Agency



@Transport\_EU

Mobility and  
Transport

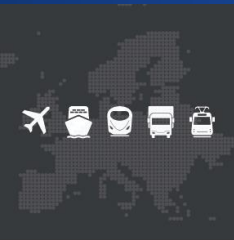
24 **CONNECTING  
EUROPE**



# Large scale deployment



## CEF grants



**9** major transport **corridors**  
to act as the backbone for transportation

**35 000 km**

The nine core network corridors consist of an estimated **35.000 km** of multi-modal connections

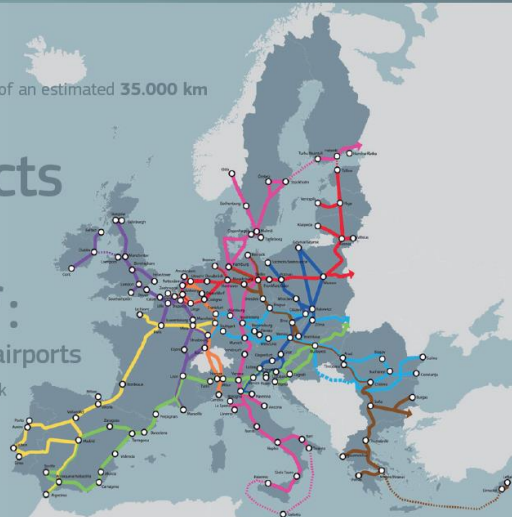
**2 500 projects**

More than **2 500 projects**, will have to be completed until 2030

**Hundreds of:**  
core ports, urban nodes, airports

Constitute an integral part of the network as European gateways and start and end-points of TEN-T journeys

Source: Regulation (EU) No 1315/2013



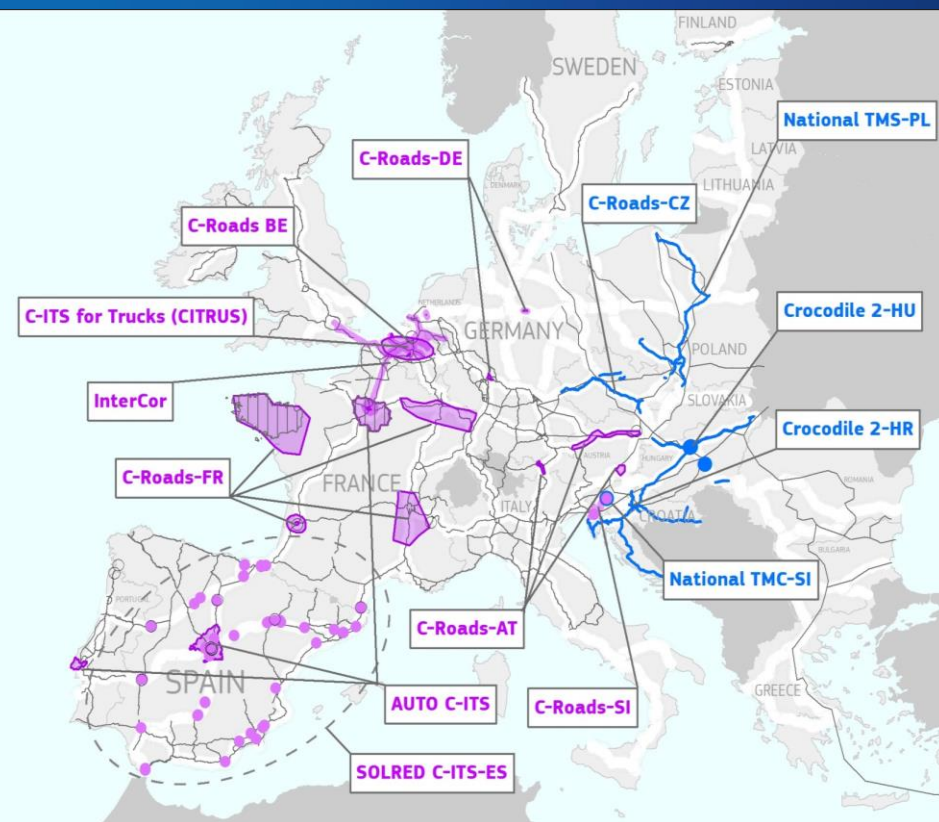
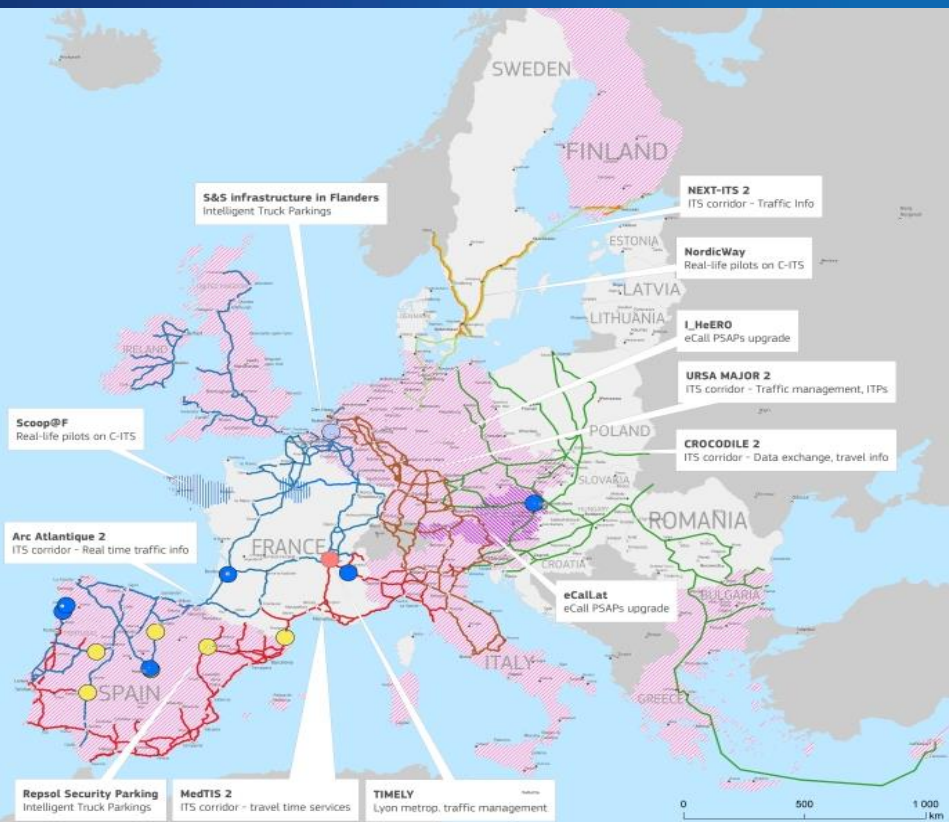
CEF Transport focuses on cross-border projects and projects aiming at removing bottlenecks or bridging missing links in various sections of the TEN-T Core Network and on the Comprehensive Network, as well as innovation in the transport system.

**2014 & 2015** calls for proposals: €20 billion CEF grants already allocated to 458 projects, mobilizing €37.6 billion of total investment

# Large scale deployment



## CEF 2014-2015



# EC TEN-T Coordinators Recommendations



- The "**ITS corridors**" should be expanded to cover all core network corridors.
- **Coordination** is key for sharing experiences, lessons learnt and best practices between Member States and their stakeholders with different level of advancement in the pre-deployment of C-ITS. [...] **the recommendations of the C-ITS platform to be implemented** +there should be **a feedback loop**.
- Core network corridor stakeholders should support the deployment of **national access points** to road and multimodal travel data on core network corridors and the linkage of multimodal information services/journey planners along core network corridors **to enable a data-sharing backbone**.
- Coordinator should ensure cohesion of (C-)ITS deployment along their corridors [...]

<http://ec.europa.eu/transport/themes/infrastructure/news/doc/2016-06-20-ten-t-days-2016/issues-papers.pdf>



# Transport Architecture


NETWORKS

SERVICES/SOLUTIONS

APPLICATIONS

DATA

INFRASTRUCTURE

		Layer	Issues / Goals	ITS Directive Delegated regulation	CEF - programme Support Action
 <p>Enabling Interoperability and continuity of services</p>	<b>Network</b>	Foster Deployment		Door to door multimodal and geographical coverage	
				Growth of new services (data economy)	
	<b>Service</b>	More accurate information services		Neutral, transparent on criterias	
				Timeliness of the information	
	<b>Application</b>	Interoperability of data		Accuracy of the information	
				Harmonised data formats through a set of interoperable standards (incl. public transport)	Support the use of standardised data
	<b>Application</b>	Interoperability of services		Standardised interfaces for linking services (API)	Support linking travel information services
	<b>Data</b>	Expand data accessibility to include all modes of transport		Public and private travel and traffic data made accessible through the NAP	
	<b>Infrastructure</b>	Facilitate access/sharing of travel & traffic data		National Access Point for static data	Support the creation of National Access Points





## - 20% CO<sub>2</sub> emissions from transport by 2030

- Global solutions to reduce emissions (IMO, ICAO)
- Polluter pays principle
- Modal shift

## DECARBONISATION



## INNOVATION



## GLOBAL LEADERSHIP



## INVESTMENT

- Innovative financing mechanisms (EFSI)
- Infrastructure investment (CEF)
- Strategic Research and Innovation

**CEF €24 bn for 2014-2020**



## deployment of connected vehicles on European roads by 2019



- Intelligent Transport Systems (ERTMS, SESAR, VTMS, RIS)
- Collaborative Economy
- Drones

## DIGITALISATION

## PEOPLE

- Safety and Security
- Passenger Rights
- Jobs

**Halving road deaths by 2020**



# Get engaged!



## More Information

### Directorate-General for Mobility and Transport:

[http://ec.europa.eu/transport/index\\_en.htm](http://ec.europa.eu/transport/index_en.htm)

### ITS Action Plan and Directive:

[http://ec.europa.eu/transport/its/road/action\\_plan\\_en.htm](http://ec.europa.eu/transport/its/road/action_plan_en.htm)

### Cooperative, connected and automated mobility (C-ITS):

[https://ec.europa.eu/transport/themes/its/c-its\\_en](https://ec.europa.eu/transport/themes/its/c-its_en)



*Thank you for your attention!*

**Pedro BARRADAS**

[Pedro.BARRADAS@ec.europa.eu](mailto:Pedro.BARRADAS@ec.europa.eu)

European Commission - DG MOVE

B.4: Sustainable & Intelligent Transport



@Transport\_EU

Mobility and  
Transport

**CONNECTING**  
**EUROPE**