European Commission

EU Regulatory Perspective and Funding Instruments for Smart/Connected Mobility

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Transport

- **Current ITS policy framework**

*** new funding instruments supporting ITS deployment along TEN-T under MFF 2014-2020**

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

Goals of European transport policy

- ***Paramount goal:***
  *A transport system that underpins EU economic progress, enhances competitiveness and offers **high quality mobility services** while using resources more efficiently*

- ***In practice***, transport should
  - use less energy
  - use cleaner energy
  - **better exploit** a modern network

White Paper 2011 on Transport:

a roadmap to a Single European Transport System

that is…

Sustainable
Integrated (all modes)
User-friendly
*Technology led (**ITS**)*

and that enhances…

Economic progress
Competitive growth (Single Market)
Efficient use of Resources
Use of cleaner fuels; reduction of oil dependency

> ITS considered to be a key enabler

White Paper 2011 on Transport – vision 2050

- *A global level-playing field for long-distance travel and intercontinental freight*
- *An efficient core network for multimodal inter-city travel and transport, well connected to local systems*
- *Clean urban transport and commuting*

> Focus on a single, integrated & intelligent infrastructure

Ten overarching goals related to:

- development & deployment of new & sustainable propulsion systems
- Optimisation of performance of multimodal logistics chains
- increasing the efficiency of transport & infrastructure use

> 40 actions

Status of ITS Deployment (2008)

- Fast technical development > high number of mature applications

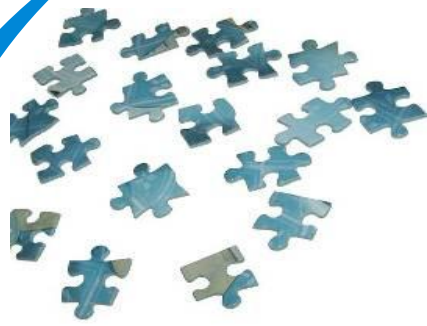
but…

- *Slow and fragmented uptake across Europe*
- *Large differences between countries*
- *Low degree of intermodality*

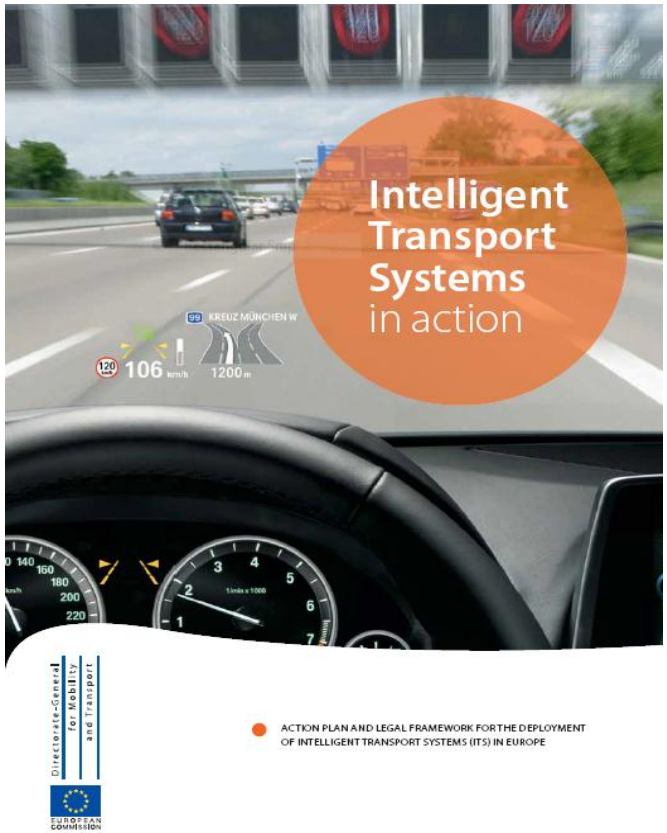
➔ **Patchwork of national, regional and local solutions**

main problem drivers identified:

- lack of interoperability
- lack of effective cooperation
- privacy and liability issues



Policy framework for the deployment of ITS in Europe



Action Plan *for the Deployment of Intelligent Transport Systems (ITS) in Europe (2008)*

Directive 2010/40/EU*: Framework for the Coordinated and Effective Deployment and Use of Intelligent Transport Systems*

→ *Road transport and interfaces with other modes through:*

- coordination and acceleration of ITS deployment throughout the EU
- tackling bottlenecks for deployment

ITS Directive: 6 priority Actions

- 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

ITS ACTION PLAN

European Commission

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

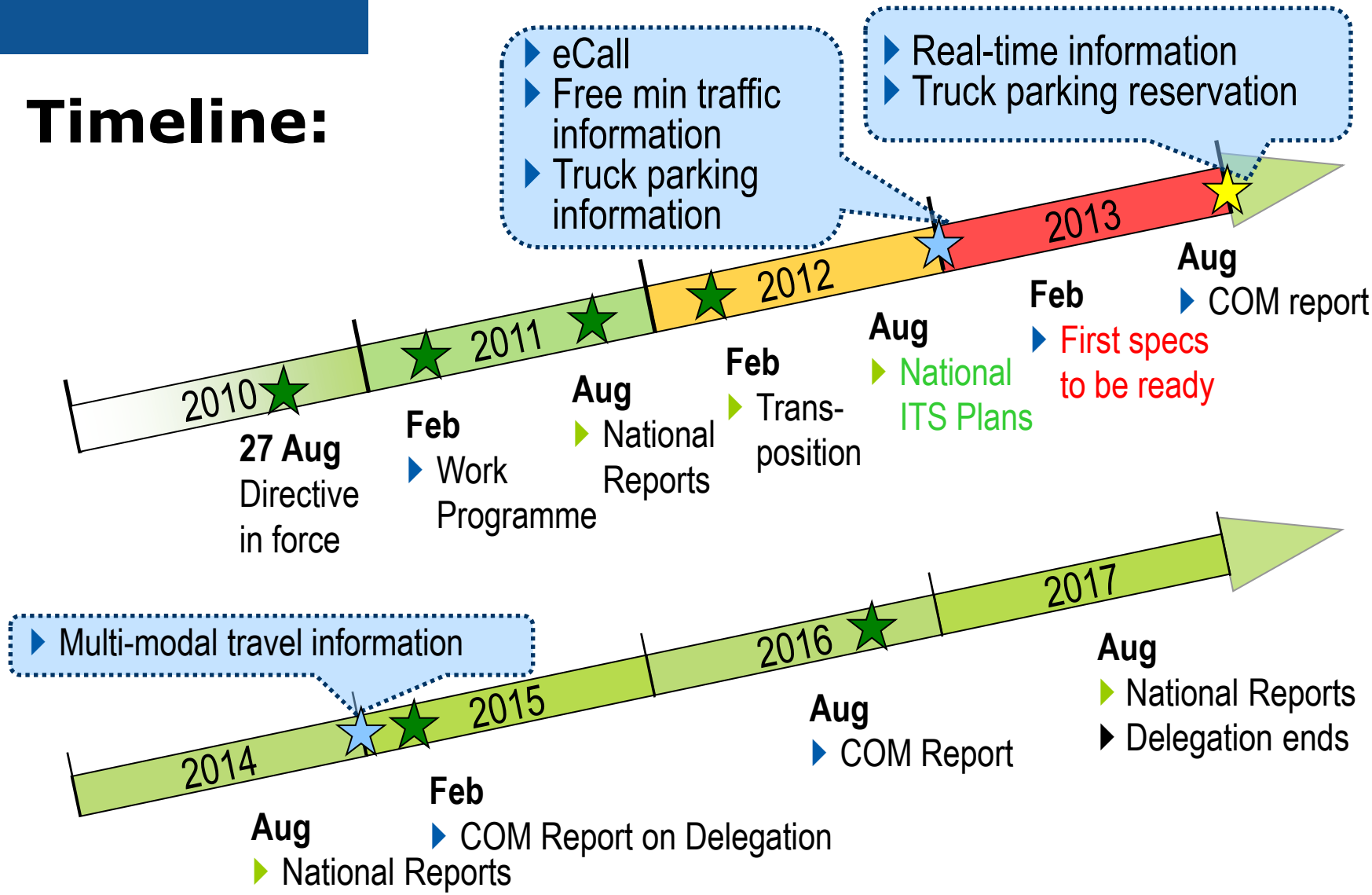
European ITS Coordination

- Legal framework for EU ITS cooperation
- Decision support toolkit for ITS investments
- Guidelines for public funding for ITS
- Collaboration platform on urban ITS

ITS Directive - supplementing *Specifications*

- *Aim: to ensure the compatibility, interoperability and continuity for deployment and use of ITS*
- *Binding Measures :*
  - **Adopted as "delegated acts" (Art 290 TFEU)**
  - Functional, technical, organisational, service provisions
  - Based on standards (where appropriate)
- *Obligations for Member States*
  - **cooperate in respect to priority areas**
  - **ensure use of specifications when ITS is deployed**
  - deployment obligation needs adoption of co-decision proposal

Timeline:


eCall
Free min traffic information
Truck parking information
Real-time information
Truck parking reservation
2010
2011
2012
2013
27 Aug
Directive in force
Feb
Work Programme
Aug
National Reports
Feb
Trans-position
Aug
National ITS Plans
Feb
First specs to be ready
Aug
COM report
Multi-modal travel information
2014
2015
2016
2017
Aug
National Reports
Feb
COM Report on Delegation
Aug
COM Report
Aug
National Reports
Delegation ends

What Human Factors tell us about drivers? They will…

- Not understand all the controls of their vehicle
- Have poorer eyesight than required
- Obstruct their view out of the vehicle
- Not use their lights or have poorly adjusted or non-working lights
- Not use indicators or have malfunctioning indicators
- Drive too fast and aggressively
- Be inattentive and daydream
- Be distracted by in-vehicle sources (mobile phones, documents, smoking, eating, grooming etc)
- Be fatigued and/or intoxicated
- Miss signs
- Not know where they are or where they are going
- Not understand geography (e.g. whether their direction is “North")

HMI and the young…

The youngest age group of drivers (below 18):

- …less interested in car ownership…
- …not excited about getting a driver-license..
- …wants all their apps work when on the move (including in the car)…
- **…considers driving as a distraction to texting…!**

HMI – the parents and industry…

- Only a matter of time when cars will be "tablet-ready…"
- Need clear and consistent rules and regulations on which apps should be allowed in vehicles/when driving…
- Same rules and enforcement mechanisms needed across borders…
- Industry should provide solutions to only allow "safe" apps in moving vehicles (on all nomadic devices)…
- **Safe Apps Working Group established under iMobility Forum supported by the European Commission**

HMI Checklist for Implementation Success - Industry

ITEM	
Benefits exceed Costs	
Standards and Architectures	
Legal & Leglislation	
Business Case	
Human Factors	

Risk of distraction-related crash

Is a function of:

- **Timing** (e.g. coinciding with unexpected event is more critical than in a low workload situation such as a stpped vehicle or traffic light)
- **Intensity** (e.g. texting requires more resource than listening to the radio)
- **Frequency** – more often repeated actions more likely to coincide with a critical event
- **Duration of the distraction** – again increasing the probability of the distraction coinciding with a critical situation

European Statement of Principles (ESoP)

- Communication from the European Commission

- Voluntary, relatively high-level principles

- *Balanced risk/benefit approach*
- *Not constraining design options*

- Assessment

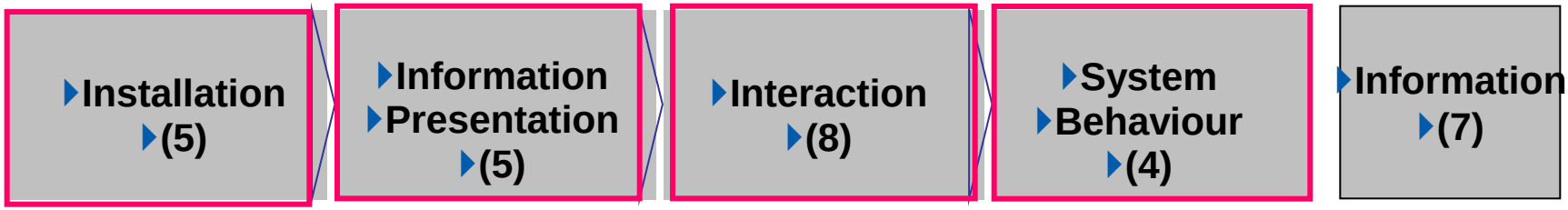
- *By inspection – Result = Yes/No*

Or

- *Assessment and Judgement – no specific criteria*

No overall pass/fail mark!

ESoP: Design Principles



29 Design Principles:

- **Principle**
- **Explanation**
- **Examples (good & bad)**
- **Applicability**
- **Compliance**
- **Definitions**

EXAMPLES:

The driver should always be able to keep at least one hand on the steering wheel while interacting with the system…

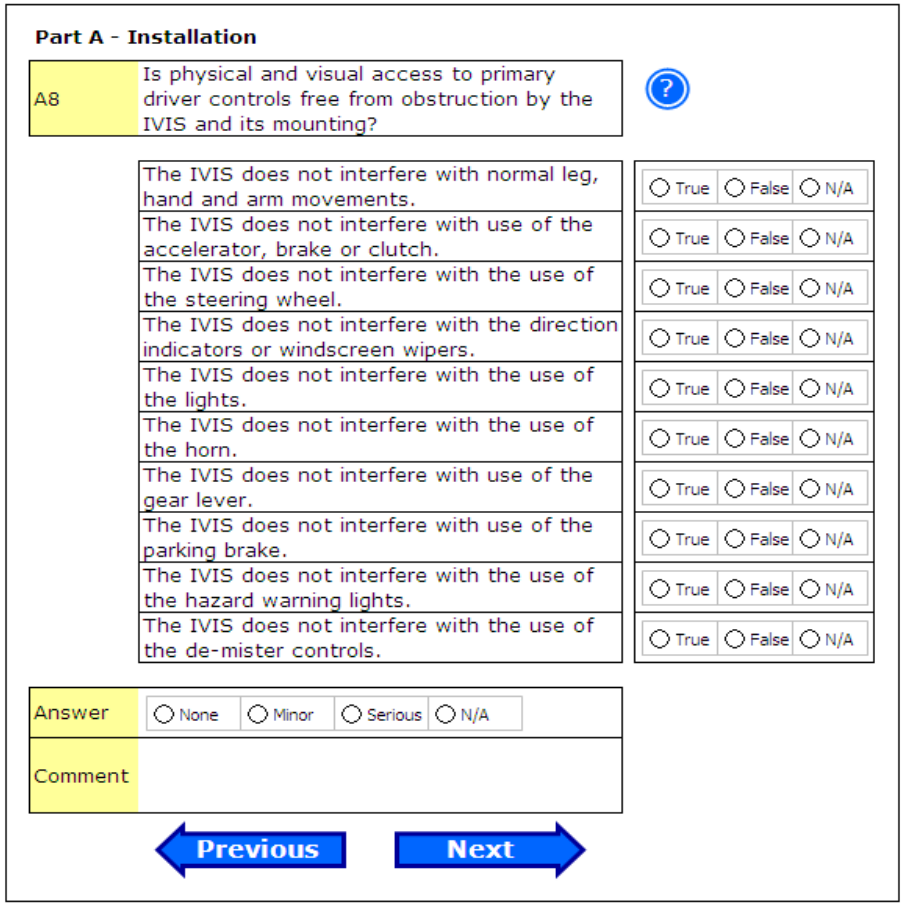
The system should not obstruct vehicle controls and displays required for the primary driving task…

While the vehicle is in motion, visual information not related to driving that is likely to distract the driver significantly should be automatically disabled, or presented in such a way that the driver cannot see it…

Visually displayed information presented at any one time by the system should be designed in such a way that the driver is able to assimilate the relevant information with a few glances which are brief enough not to adversely affect driving…

ESoP as a design assessment check-list

- Excel Spreadsheet for PC, tablet, etc.
- Supportive Information for each question is available via a "help" icon
- Assessment Summary Sheet is automatically populated based on the data entered



Part A - Installation

A8	Is physical and visual access to primary driver controls free from obstruction by the IVIS and its mounting?

The IVIS does not interfere with normal leg, hand and arm movements.	○ True	○ False	○ N/A
The IVIS does not interfere with use of the accelerator, brake or clutch.	○ True	○ False	○ N/A
The IVIS does not interfere with the use of the steering wheel.	○ True	○ False	○ N/A
The IVIS does not interfere with the direction indicators or windscreen wipers.	○ True	○ False	○ N/A
The IVIS does not interfere with the use of the lights.	○ True	○ False	○ N/A
The IVIS does not interfere with the use of the horn.	○ True	○ False	○ N/A
The IVIS does not interfere with use of the gear lever.	○ True	○ False	○ N/A
The IVIS does not interfere with use of the parking brake.	○ True	○ False	○ N/A
The IVIS does not interfere with the use of the hazard warning lights.	○ True	○ False	○ N/A
The IVIS does not interfere with the use of the de-mister controls.	○ True	○ False	○ N/A

Answer	○ None	○ Minor	○ Serious	○ N/A
Comment				

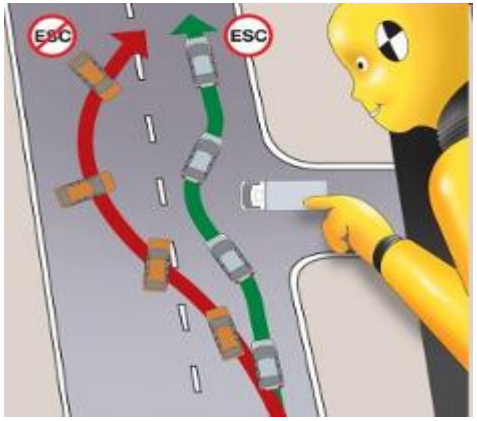
Previous Next

Source: Checklist for the Assessment of In-Vehicle Information Systems by A Stevens, S Cynk, TRL Published Report MIS005

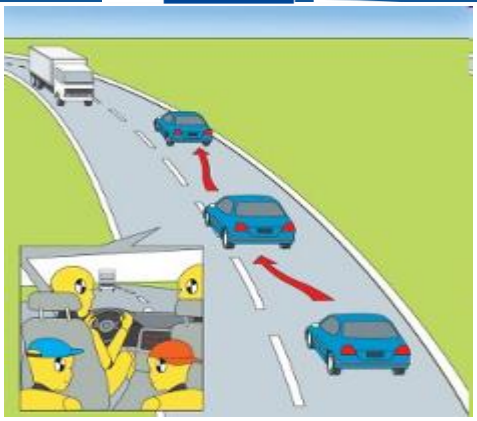
Increasingly seen as the only long-term option

- *Majority of accidents (> 90%) is caused by human error. The human is not always making optimal driving choices for (energy) efficiency either.*
  - **the impact of high levels of automation is clear**
- *ICT can significantly contribute to solving road transport related problems.*
  - **Automated driving has great potential to improve significantly safety and energy efficiency**
- *The driver needs assistance in increasingly complex traffic situations*
  - **The highly automated vehicle could take care of some driving tasks to make his/her task easier**

About Automated Driving
(Some) State of the art



- Electronic Stability control

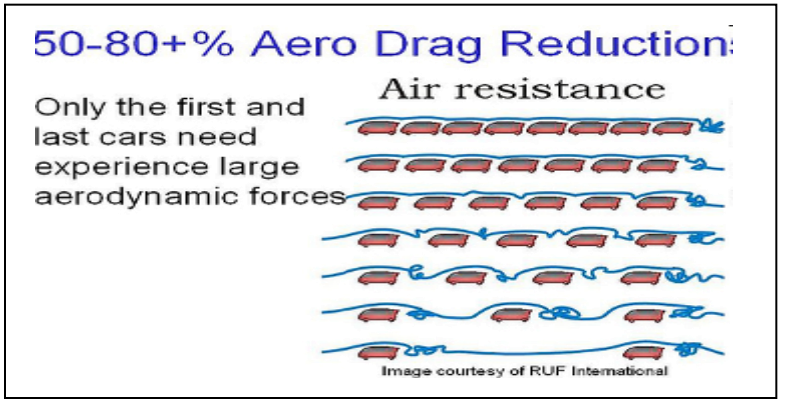


- Lane Support Systems

- Emergency braking

These systems are key building blocks of Automated driving

- Advanced Driver Assistance System



Platooning of vehicles

Supporting Activities Studies 2010

- ***SMART 2010/0063***
  *Defining the required **Infrastructure** supporting Co-operative systems*

- ***SMART 2010/0064***
  *Definition of necessary vehicle and infrastructure systems for **Automated Driving***

- ***SMART 2010/0065***
  *New services enabled by the **Connected Car***

Cooperative systems

- Informal meeting of European ITS Committee & European ITS Advisory Group held on 4 June 2013 during ITS Congress in Dublin
- Agreed on the need for a European vision/strategy
- Set up a platform for the coordination and the integration of deployment initiatives in order to:

  -> ensure interoperability and create synergies across Europe

  -> focus investment on deployment of cooperative systems

  -> mobilisation of funds from Horizon 2020 and Connecting Europe Facility

-> Commission's draft initial document on the vision will be sent to the EIC / EIAG

-> Public consultation to be launched soon

-> Stakeholder Workshop in Q4 2013

-> Contribution to Working Programmes 2014-2015 for both Horizon 2020 and CEF funding instruments

* ITS policy framework

*** new funding instruments supporting ITS depolyment at EU level**

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

indicative budget breakdown

Societal Challenges
31,7 B€

Smart, Green and Integrated Transport 6,8 B€

Secure, Clean and Efficient Energy 5,8 B€

Leadership in enabling and industrial technologies
18,0 B€

ICT Research and Innovation
8,0 B€?

R&I in Mobility and Transport

Connecting Europe Facility (CEF)

Supports the implementation of Transport White Paper through new infrastructure policy including:

- Dual layer approach based on an objective methodology: core and comprehensive network;
- Ambitious standards for infrastructure for all modes;
- Common deadlines to achieve network (2030/2050);
- Corridors and coordinators for implementation.

CEF in figures

<table>
<tr><td rowspan="2">CEF 2014-2020</td><td colspan="4">€50 billion (total)</td></tr>
<tr><td>€9.1 billion (energy infrastructure)</td><td>€9.2 billion (broadband & digital services)</td><td colspan="2">€31.7 billion (transport infrastructure)</td></tr>
<tr><td></td><td></td><td>€21.7 billion</td><td>€10 billion (earmarked from the Cohesion Fund)</td></tr>
</table>

Thank you for your attention !

More information

- Directorate-General for Mobility and Transport

http://ec.europa.eu/transport/index_en.htm

- ITS Action Plan and Directive

http://ec.europa.eu/transport/its/road/action_plan_en.htm