EU Mobility Policy Framework
Towards Cooperative Mobility

IEA EGRD Conference
Espoo, Finland 23 May 2013

Juhani Jääskeläinen
European Commission
Directorate General for Communications Networks, Content and Technology
Content

- 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
Intelligent Vehicles
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.
Content

- 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
Cooperative Systems
149 M€ EC funding

Mobility Management
- Nearctis
- Euridice
- i-Tetris
- iCargo
- Co-cities
- In-time

Cooperative Safety
- Intersafe2
- Saferider
- Interactive

Cooperative Green Mobility
- SUNSET
- ECOstand
- E-Compass
- ECOMOVE
- Reduction
- COSMO
- Freilot

Electric Vehicles
- SmartG2V
- PowerUp
- ECOGEM
- ELVIRE
- MOBI.Europe
- ICT 4 EU
- SmartCEM
- MOLECULES

Technology enablers & support
- GeoNet
- ITSSv6
- Oversee
- Evita
- Preserve
- Preciosa

Field Operational Test
- FOTsis
- DRIVE-C2X
- SATIE
- FOTNET
- FESTA

Research & Innovation
Cooperative Systems
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
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
Content

- 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
Directive 2010/40/EU

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
Deploying ITS
What is eCall?

**eCall: The crashed car calls 112!**

1. **Emergency Call**
   A 112 emergency call (eCall) is made automatically by the car as soon as on-board sensors (e.g. the airbag sensors) register a serious accident. By pushing a dedicated button in the car, any car occupant can also make an eCall manually.

2. **Positioning**
   Via satellite positioning and mobile telephony caller location, the accurate position of the accident scene is fixed and then transmitted by the eCall to the nearest emergency call centre. More information is given in the eCall, e.g. the direction of travel and the vehicle type.

3. **Emergency call centre (PSAP)**
   The eCall’s urgency is recognized, the accident’s location can be seen on a screen. A trained operator tries to talk with the vehicle’s occupants to get more information. If there is no reaction, emergency services are sent off without delay.

4. **Quicker help**
   Due to the exact knowledge of the accident’s location, the emergency services (e.g. ambulance, fire fighters, police) arrive much quicker at the crash site. Time saved translates into lives saved.
Deploying ITS eCall Regulatory Strategy

Proposal for a Directive

ENTR

INFSO
Recommendation to MSs

Common Specs

MOVE
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.
Deploying ITS
The Role of FOTs

<table>
<thead>
<tr>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: Methodology for conducting FOTs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase 2: Field Operational Test on Autonomous Vehicle ICT Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase 3: Field Operational Test on Cooperative ICT Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**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
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
International Cooperation

Why?

- 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
The Tri-lateral Framework

Implementing Arrangement January 2009

MoC signed June 2011

MoU signed October 2010
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
Europe supports a global approach to Cooperative Mobility which aims at a common communications architecture, interoperability and global, open standards.

Source: COMeSafety2 project
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
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:

- 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)
Conclusions (2)

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!

Juhani Jääskeläinen
juhani.jaaskelainen@ec.europa.eu