Towards Cooperative Mobility
EU-Japan cooperation

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Europe’s Transport Sector

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
- €25 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

Multimodal journey planners

E-Freight
Europe’s Transport Sector
Intelligent Vehicles

- Household charger plug
- Inverter
- On-board charger
- Motor
- Quick charger plug
- Lithium-ion battery system

Seminar on EU-Japan cooperation 17 Feb 2012
Europe’s Transport Sector
Cooperative Systems
Europe’s Transport Challenges
Targets 2020 - 2050

- Road Safety: - 50% by 2020, towards zero fatalities in 2050
- Reducing Congestion: estimated - 2% GDP
- Energy Efficiency & Emissions: - 60 % by 2050
- Addressing growth in demand and increasing urbanisation, aging population
- Integration of different transport modes
- Make use of research and developments including ICT
- Reducing dependence on oil and impact of increasing oil prices
- Reducing noise and air pollution in cities
Europe’s Transport Challenges
The White Paper 2011

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
Europe’s Transport Challenges
Policy Initiatives

• The European Green Cars Initiative - 2010
• ITS Directive 2010/40/EU and the ITS Action Plan - 2010
• CARS-21 Competitive Automotive Regulatory System for the 21st century - re-launch in 2011)
Europe’s Transport Challenges
Strategic Transport and Energy Plans

- Strategic Energy Technology Plan (SET) - 2010
- Communication on Clean and Energy Efficient Vehicles - 2010
- CARS 21 Mid-Term Report - 2011 (Final Report 2012)
- Strategic Transport Technology Plan (STTP) - 2012
- Strategic Transport Energy Plan (STEP) – 2012
“Advanced road safety technologies play an ever increasing role in improving road safety. Their strength and focus is accident avoidance, not just better occupant or road user protection in the event of an accident. For many years, Europe has invested in the research and development of these technologies. Now it is time to reap their benefits.”

Neelie Kroes
European Commissioner for Digital Agenda

Vice-president
Commissioner for Digital Agenda
Neelie Kroes
Addressing the Challenges with ICT - Overview

Policy Framework

Research & Development
- FP6
- FP7
- H2020

European Large Scale Actions
- The European Green Cars Initiative
- EIP in Transport
- Future Internet PPP

Pilots
- CIP Pilots
- eCall Pilots
- Other pilots

Field Operational Tests (FOTs)
- FOT Method
- Autonomous Vehicle Systems
- Cooperative Systems

Deployment

Standards
- eCall Standards CEN/ETSI
- ETSI in ITS
- Cooperative Systems standards

User Awareness
- Choose ESC! campaign
- eSafety Challenge
- eSafety Aware!

Regulation
- ITS Committee
- eCall regulation

International Cooperation
- EU - METI Coop. Agreement
- EU - US joint declaration
- EU-Japan MoC

Timeline:
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- ... 2020

Japan
USA
Tri-lateral cooperation
Research and Development – FP7
ICT for Transport

- 2007
  - Call 1: Intelligent Vehicles & Mobility Services
  - 14 projects, 57 M€ grant

- 2008
  - Call 2: Cooperative Systems
  - 12 projects, 48 M€ grant

- 2009
  - Call 4: Safety & Energy Efficiency in Mobility
  - 10 projects, 53 M€ grant

- 2010
  - Call 5: Fully Electrical Vehicle
  - 20 M€ grant

- 2011
  - Call 6: Mobility of the Future
  - 10 projects, 37 M€ grant

- 2012
  - Call 7: Low carbon multimodal mobility & freight transport
  - Budget: 50 M€

- 2013
  - Call 8: Cooperative Systems for energy efficient & sustainable mobility
  - Budget: 40 M€

Seminar on EU-Japan cooperation 17 Feb 2012
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, eco Freight & 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
Mission

"Provide Electric Vehicle users with relevant on-board and off-board services through usable and tangible ICT system prototypes, which are supporting E-Mobility to become a viable mass market alternative."

Goals

- Research and develop relevant E-Energy related information services for EV users.
- Build EVs which are equipped with ICT hard- and software prototypes.
- Create exemplary ICT service back-end system to host services.
- Develop usable on-board and off-board EV ICT Services.
- Develop fundamental algorithms for tangible on-board and off-board services.
- Develop Use cases and E-Energy HMI examples for On-Board systems.
- Define open system interfaces to support roaming EVs.
- Find collaborative solutions to avoid "Range Anxiety".
- Conduct system and usability test and analyse results.

Coordinator: Continental Automotive GmbH
Total costs: ±9.900 M€
EC contribution: ±5.200 M€
Start date: Jan 4, 2010
Duration: 36 months
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

Seminar on EU-Japan cooperation 17 Feb 2012
Ministry of Economy, Trade and Industry (METI):

- Informal Cooperation Agreement (INFSO-METI) since March 2008

- Covers ICT for Energy Efficiency and Automated Driving


- Aims at harmonised methodologies for assessing the impact of ITS applications on emissions

- New project ECOSTAND: Support Joint Task Force of Europe, Japan and USA

- International ITS Energy Symposiums: Stockholm, Amsterdam, Tokyo, Vienna, Washington DC
Ministry of Internal Affairs and Communications (MIC):

- Regular meetings with MIC representatives on the occasion of ITS World Congresses and international standardisation events (e.g., ETSI TC ITS, ITU-R)

- Exchange of information and cooperation on harmonisation of Radio Spectrum for ITS applications (EU-US-Japan, 5.8 – 5.9 GHz DSRC, also 700 MHz)

- Aiming at global harmonisation on ITS standards, especially on cooperative systems (ISO, ITU, IEEE)
Background EU-Japan Cooperation

Ministry of Land, Infrastructure, Transport and Tourism (MLIT):

- Informal cooperation and preparation of the MoC since 2009

- Covers research on Intelligent Transport Systems, focus on Cooperative Mobility

- Information exchange, standardisation efforts, “probe data” etc.

- Co-chairing of the International Workshops on Vehicle Communication (7th in Orlando, USA)
Memorandum of Cooperation between

Information Society and Media Directorate-General (DG INFSO) of the European Commission and

the Road Bureau of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japan

cconcerning Cooperative Systems in the field of Intelligent Transport Systems

Signed on June 9th 2011 in Lyon, France
- Leverage on the **deployment activities** in each region

- Focus on ITS and **Cooperative Systems** in particular (V2V and V2I)

- **Share results** of ongoing research and trials and identify future key research areas

- **Harmonisation of standards** to deploy cooperative systems

- Welcomes other regions to develop global standards

- Periodical dialogues; symposiums, seminars and meetings
Next Steps

- Identify clear goals, an Action Plan and monitoring mechanisms.
- Study Tour to Tokyo in May (ITS SPOTS)
- Trilateral (EC-USA-Japan) meetings in October 2012 (ITS World Congress in Vienna, Austria)
- Potential exchange of personnel EC-MLIT
- Global ITS Energy Symposium on “Impact Assessment Methodologies on CO2 Reductions with ITS Applications” in Oct 2012 (Vienna)
- Align and extend the tri-lateral cooperation (focus on standardisation, key research results, use and exchange of probe data and other topics later)
- Consider the opportunity to broaden the EU-Japan cooperation under the S&T Agreement
Aiming at Global Standards
Why do we need them?

- 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
Meeting the Future Challenges with Horizon 2020

- The Framework Programme for Research and Innovation 2014 – 2020 (87 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
Meeting the Future Challenges with Horizon 2020

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
Meeting the Future Challenges with Horizon 2020

Contribution of ICTs in research and innovation in Smart, Green and Integrated Transport

- European Innovation Partnerships (Smart Cities, Smart Mobility)
- Continuation of the European Green Cars Initiative (PPP)
- Roadmap-based and open innovative research in
- Co-operative Systems for safety and energy efficiency
  - Highly Automated Systems
  - Smart Connected Electro-Mobility
  - Transformative services based on Future Internet Technologies, Cloud Computing and service innovation
  - New virtual mobility concepts
Thank you for your attention!

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