About Europe's Transport Sector

Research and Innovation in Cooperative Mobility in Europe

Deploying Cooperative Systems in Europe

Conclusions
  - The role of Mirrorlink
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
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Research & Innovation
Cooperative Mobility

6th FP

Call 1
Intelligent Vehicles & Mobility Services
14 projects
80 M€

Call 4
Moving to Cooperative Systems
22 projects
92 M€

7th FP

Call 1
Intelligent Vehicles & Mobility Services
14 projects
57 M€

Call 2
Cooperative Systems
12 projects
48 M€

Call 4
Safety & Energy Efficiency in Mobility
10 projects
Budget: 53 M€

Call 5
Fully Electrical Vehicle

Call 6
Mobility of the Future
Budget: 20 M€

Call 7
Low carbon multimodal mobility & freight transport
Budget: 37 M€

Call 8
Cooperative Systems for energy efficient & sustainable mobility
Budget: 50 M€

Budget: 40 M€
Research & Innovation
FP7 & CIP Projects

EC funding 338,82 M€

Cooperative Systems
- COMeSafety2
- eFrame
- Rosatte
- Intersafe2
- Nearctis
- Pre-Drive
- P3ITS
- COSMO
- Co Cities
- GeoNet
- CHARM
- ICSI
- MOBINET
- V-CON
- Studies

Green Mobility
- eCoMove
- Elvire
- Ecogem
- IFM project
- Europtima
- iTetris
- Sunset
- PowerUp
- In-Time
- Satie
- SmartV2G
- Roadidea
- SuperHub
- EcoNav
- Amitran
- eCOMPASS
- SmartV2G
- Roadidea
- SuperHub
- Modum
- ecoDriver
- ICT-EMISSIONS
- Decomobil
- Carbotraf
- Molecules
- MOBILEurope
- SmartCEM
- ICT4EVEU
- Hemis
- Mobincity
- Emerald
- Eco
- FEV Mobility2.0
- COLOMBO
- GET Service
- MobIS
- SIMPLI-CITY
- TEAM

Logistics, Freight & Fleet management
- Euridice
- Logistics4Life
- SmartFreight
- FREILOT
- iCARGO
- REDUCTION

Contribution to Safety
- 2Wide_sense
- Adose
- Have-it
- Fair
- ARTIC
- InteractIve
- Mosarim
- ATESS2
- Minifaros
- eValue
- Saferider
- ActiveTest
- HeER0
- 79GHz
- Compass4D
- Heero2

Supporting activities
- iCar Support
- iCars Network
- eSafety Challenge
- SCVP
- ECOSTAND
- eMAPS
- iMobility Challenge
- iMobilitySupport

FSO
- iTSSv6
- Festa

Field Operational Test
- Drive C2X
- TeleFOT
- euroFOT
- FOT-Net 1+2
- FOTsis
- ITSv6
- Festa

Supporting activities
- iCar Support
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Security & privacy
- Evita
- Oversee
- Preserve
- Preciosa

EC funding 43.7 M€

EC funding 121,52 M€

EC funding 27.9 M€

EC funding 9,4 M€

EC funding 12,2 M€

EC funding 49,9 M€

Running projects
Completed projects
Under negotiation
Cooperative Systems
149 M€ EC funding

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

Cooperative Safety
- Intersafe2
- Saferider
- Interactive
- HeERO

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, 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
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
To develop new high performance and integrated safety applications, enhancing the intelligence of vehicles and promoting safer and more efficient driving

Goals
1. Extend the range of possible scenarios and the usability of Active Safety Systems by multiple integrated functions and active interventions
2. Improve decision strategies for Active Safety and Driver-Vehicle-Interaction
3. Develop solutions for collision mitigation that are able to improve the market potential towards low segments
4. Create an innovative model and platform for enhancing the perception of the driving situation
**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
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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

SOURCE: European Commission
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.
eCall
Regulatory Strategy

Proposal for a Directive
ENTR

INFSO
Recommendation to MSs

MOVE
Common Specs

INFSO
Most Appropriate Public Safety Answering Point

Mobile Network Operator

Voice (112)

Voice (E112)

Minimum Set of Data (MSD)
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.
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
Taking a Global Approach
International Cooperation
The Tri-lateral Framework

Implementing Arrangement
January 2009

MoC signed
June 2011

MoU signed
October 2010
The U.S. DoT and the DG CONNECT are demonstrating cooperative vehicle communications to showcase their joint work on mutual ITS challenges and opportunities related to cooperative vehicles.
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
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
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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 2015
- Actions to fully utilize the results of the iMobility Forum and its Working Group in the ITS Action Plan and Directive (specifications)
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)
- Stakeholder commitment, including rapid progress in standardisation
- Cooperation between the industry and the authorities – the Amsterdam Group
- Strong international cooperation (USA, Japan, Russia…)
- Progress – the EU-US Showcase in Vienna ITS World Congress
What is good in Mirrorlink

- Cooperation between automotive OEMs, mobile communications industry, consumer electronics industry, service providers and other stakeholders
- Almost all stakeholders in rapid progress in standardisation possible
- Addresses the safe use of smartphones and other portable devices in the vehicle
- Certification process, test tools, user interface guidelines
eCall and Mirrorlink – a marriage made in heaven:

- Will make it mandatory to equip all new vehicles with telematics device from 2015 onwards
- EU Approach: Technology neutrality, performance of the in-vehicle device and the test procedures defined in ETSI standards
- Needed: A specification for Mirrorlink-technology based in-vehicle eCall device, with certification and test procedures
- A Working Group to be established?
Thank you for your attention!

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