

The EU approach towards co-operative systems for safer and more efficient transportation environment

SAFESPOT & WATCHOVER WORKSHOP
'FUTURE PERSPECTIVES OF CO-OPERATIVE SYSTEMS FOR
ROAD SAFETY'
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Content

- **Introduction**
- Intelligent Car Initiative – the political backbone of ICT research in transport
- Research in Co-Operative Systems
- Further activities to support cooperative systems
- Conclusions

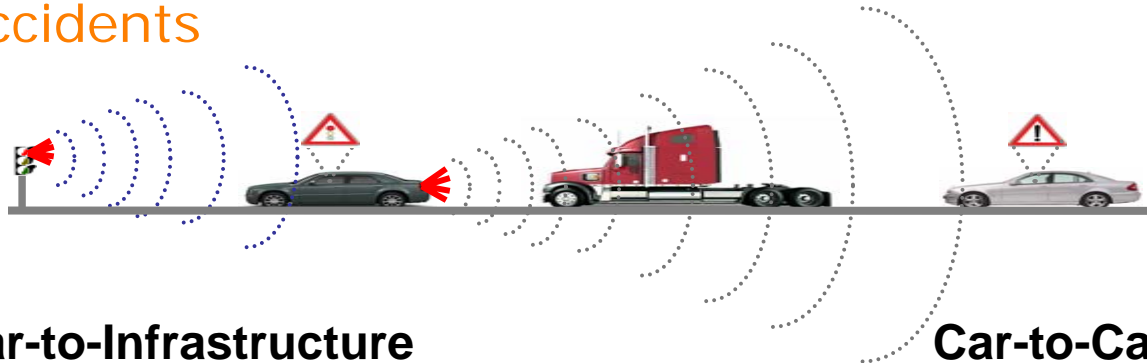


EU Approach to Co-operative Systems (1)

The Potential

The potential benefits include:

- increased road network **capacity**
- reduced **congestion** and **pollution**
- shorter and more predictable journey times
- improved traffic **safety** for all road users
- lower vehicle **operating costs**
- more efficient **logistics**
- improved management and control of the **road network** (both urban and inter-urban)
- increased efficiency of the **public transport systems**
- better and more efficient response to **hazards, incidents and accidents**



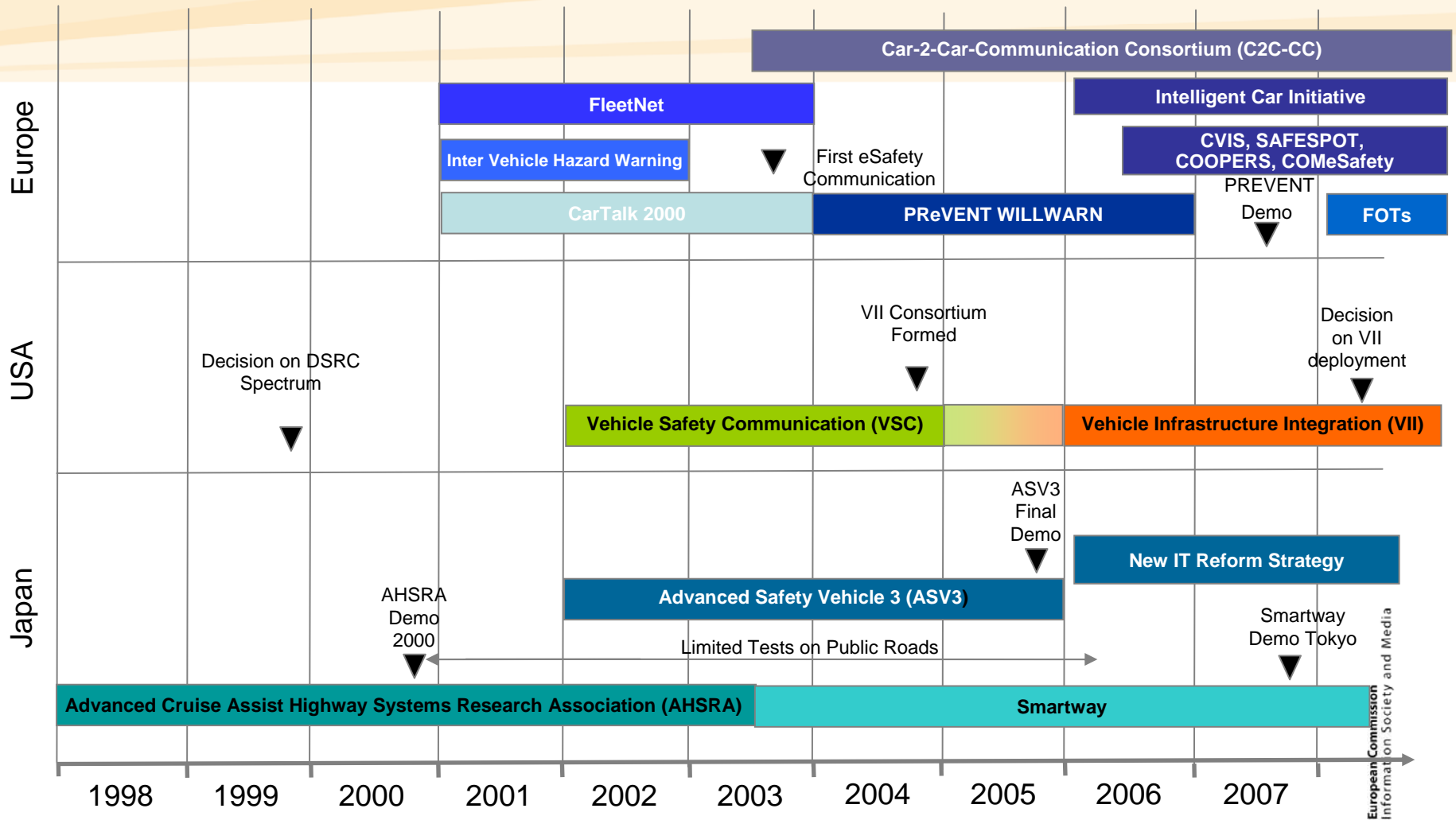
**Car-to-Infrastructure
Communication**

**Car-to-Car
Communication**



EU Approach to Co-operative Systems (2)

All regions are working on it...



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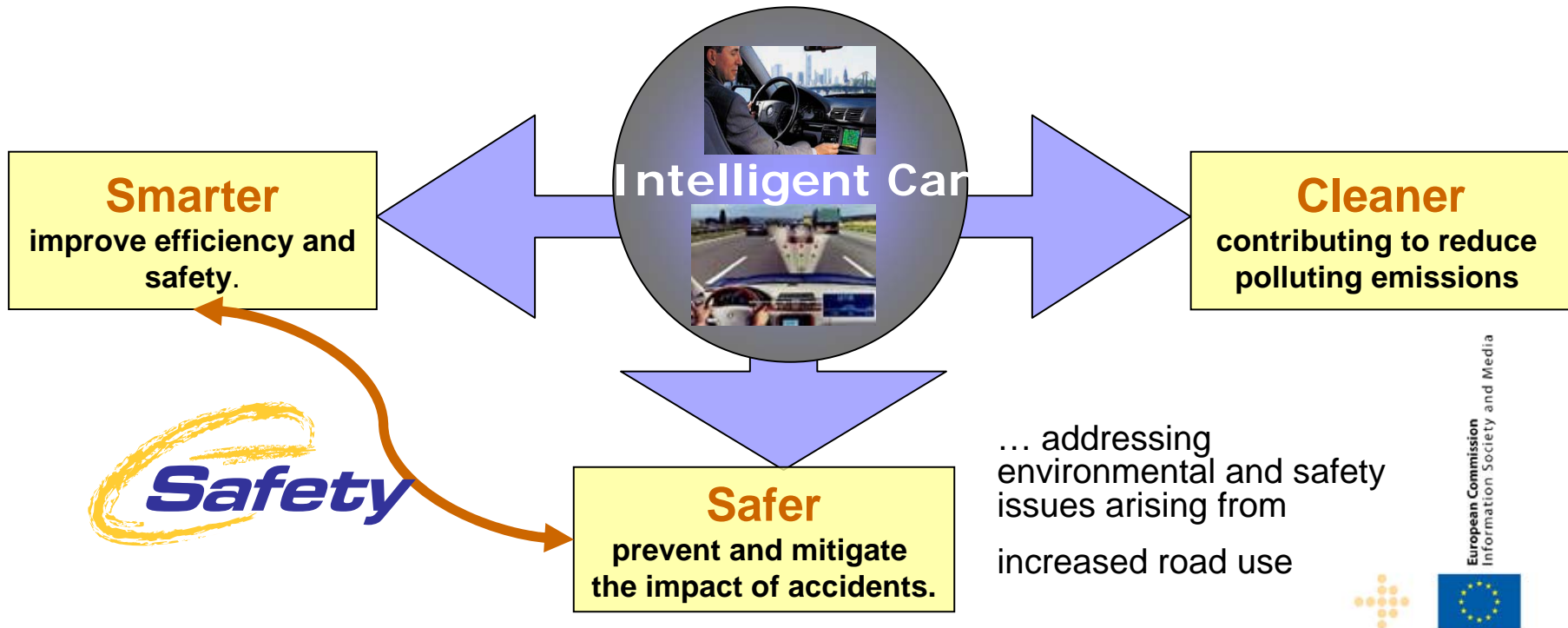


The Intelligent Car Initiative (1)

On June 1, 2005 the Commission adopted the Communication
“i2010: European Information Society 2010 for growth and employment”

The **Intelligent Car** is one of the i2010 Flagship Initiatives.

The objective is to improve the quality of the living environment by supporting ICT solutions for **safer, smarter and cleaner mobility of people and goods.**



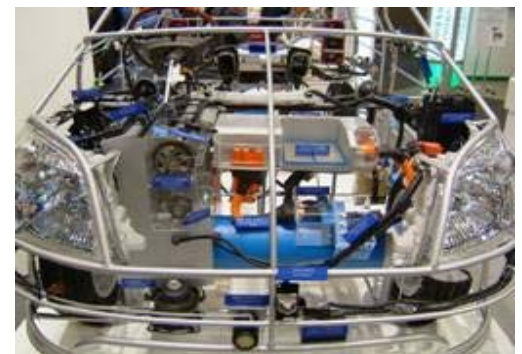
The Intelligent Car Initiative (2)

Policy Achievements through stakeholder concertation

- New Commission Communication on eCall to speed up its implementation
- European Statement of Principles (ESoP) with recommendations on HMI
- European Code of Practice for developing and testing ADAS from RESPONSE 3 project



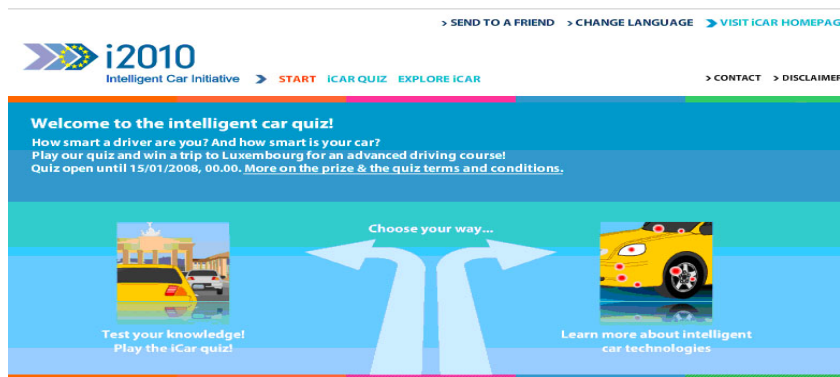
- New generation Preventive safety systems (PREVENT)
- Co-operative Systems for safer, cleaner and more efficient mobility (CVIS, SAFESPOT, COOPERS, ...)
- Field Operational Tests on mature IVS launched



The Intelligent Car Initiative (4)

User Awareness Achievements

- Information dissemination to raise awareness on the potential of Intelligent Vehicle Systems
- Stimulate user's demand and create socio-economic acceptance.
- Facilitate the deployment of mature technologies and systems
- ChooseESC! campaign by eSafetyAware!



The Intelligent Car Initiative (5)

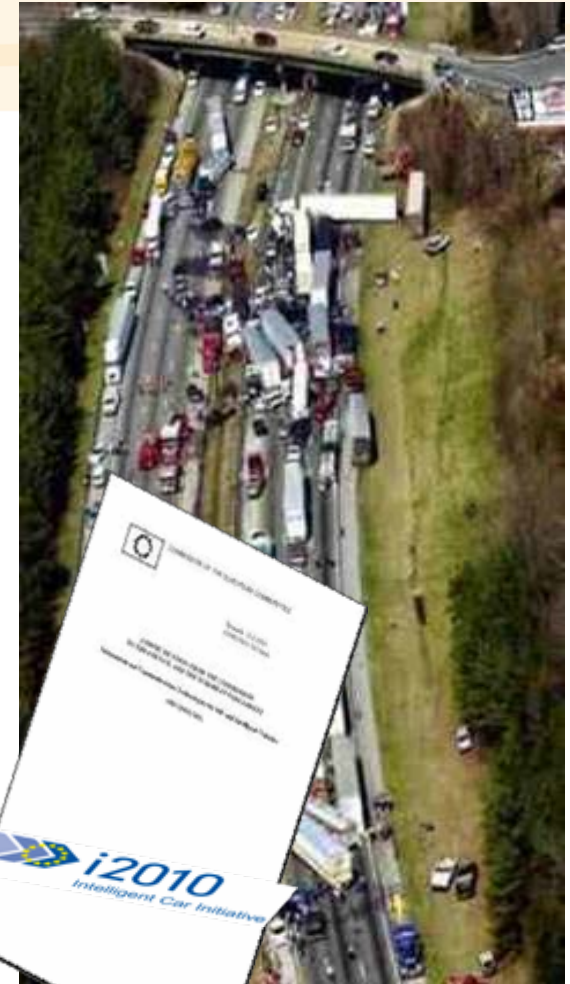
The New Communication



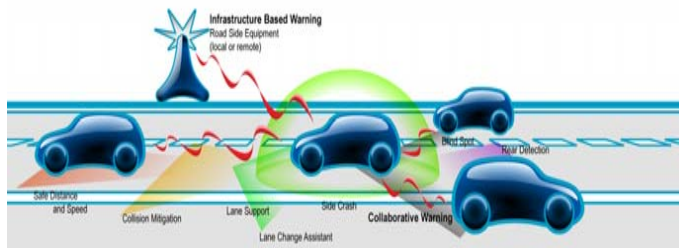
*New
Commission Communication*

Adopted 17 September 2007

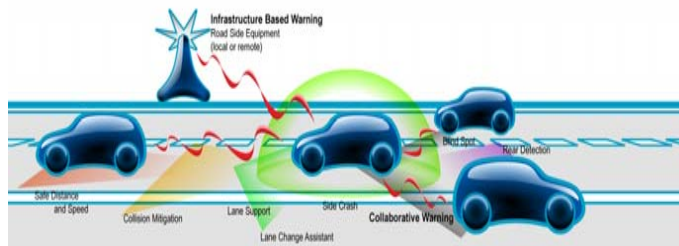
**Towards Europe-wide
Safer, Cleaner and Efficient
Mobility:
The First Intelligent Car Report**



- Stakeholders should work towards an **open, pan-European, standardised and interoperable Communications Architecture** for Co-operative Systems.
- The Commission will continue to support further **R&D under the ICT priority on Co-operative Systems** in the time frame 2009-2010.
- The Commission will continue to work with the Radio Spectrum Committee in solving the remaining spectrum issues.



- Identification of the benefits of ICT systems and
- propose a methodology for **measuring the impact of ICT in reducing CO2 emissions by 2008.**
- Roll-out plan for the **most effective ICT low-CO2 technologies** for both the vehicles and the infrastructure.



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aims at

- new generation advanced driver assistance systems to offer a higher degree of safety through accident prevention based on improved hazard detection, sensing and integration of systems
- mobility services which make transport of people and good safer, more secure, efficient, comfortable and environment-friendly
- ramping up of Field Operational Tests
- focusing on the sub-areas:
 - **Intelligent Vehicle Systems**
 - **Mobility Services for People**
 - **Mobility Services for Goods**
 - **Coordination and Support Actions:**

**Budget
57 M€**

(related to Standardisation and Agreed Specifications; Ramping up of Field Operational Tests; Mobility Services for People and Goods)

Overview of Selection

- **Very good coverage of the WP**
- **78 eligible proposals (84 submitted)**
- **31 met the evaluation thresholds**
- **14 are just starting**



Projects within the first call: the IPs

- **HAVE-IT** proposes to develop, validate and demonstrate 6 cutting edge, **automated driving applications** for both passenger cars and trucks. Rather than simply switching control from ADAS to driver in potentially critical situations, the project will develop a step-by-step approach to the transition.
- **EURIDICE** will create concepts, technological solutions and business models to establish an **information services platform for the freight sector**. It aims to improve logistics, business processes and the public policy aspects of freight transportation.



Projects within the first call: the STREPs (2)

- **SAFERIDER** aims to enhance the safety of **Powered Two Wheeled (PTW)** vehicles by applying ADAS/IVIS for critical functions and developing user-friendly interfaces & interaction elements for rider comfort & safety.
- **ROSATTE** aims to establish an efficient & quality-assured **data supply chain** of safety-related road attributes between public authorities and commercial map providers. It will produce an harmonised data exchange infrastructure.
- **ADOSE** proposes to **enhance ADAS functions** through the development of high performance, low cost technologies suitable for reliable detection and classification of road users in all driving conditions.
- **FNIR** is targeted at improving driver warning strategies for long-range detection of pedestrians using **Night Vision Systems (NVR)**.



Projects within the first call: the STREPs (3)

- **eVALUE** aims at defining objective evaluation and testing methods for ICT-based safety systems. It will identify **evaluation and testing methods**, especially those associated with active safety systems, covering user needs, environmental and economic aspects. The use of standardised test and evaluation methods is expected to ultimately lead to increased awareness of ICT-based safety systems' performance.
- **GeoNet** will contribute to the EU goal of halving the loss of life due to road accidents by providing **reference geo-location** and geo-addressing modules using IPv6 protocols that support message delivery between cars (V2V) and with the infrastructure (V2I).



Projects within the first call: the STREPs (4)

- **SMARTFREIGHT** aims at making **urban freight transport** more efficient, environmentally friendly and safe by making smarter use of distribution networks, improved delivery and return-load systems. The project will integrate urban traffic management systems, with freight management and on-board systems.
- **ROADIDEA** will analyse differences between existing transport systems and available data sources. The output of ROADIDEA will be a **roadmap** to a more innovative and competitive European transport service sector.
- **Smart-Vei** aims to design and develop a portable “predictive-adaptive” learning system, which will provide **intelligent driver assistance** (innovative control strategies that are specific to that driver).



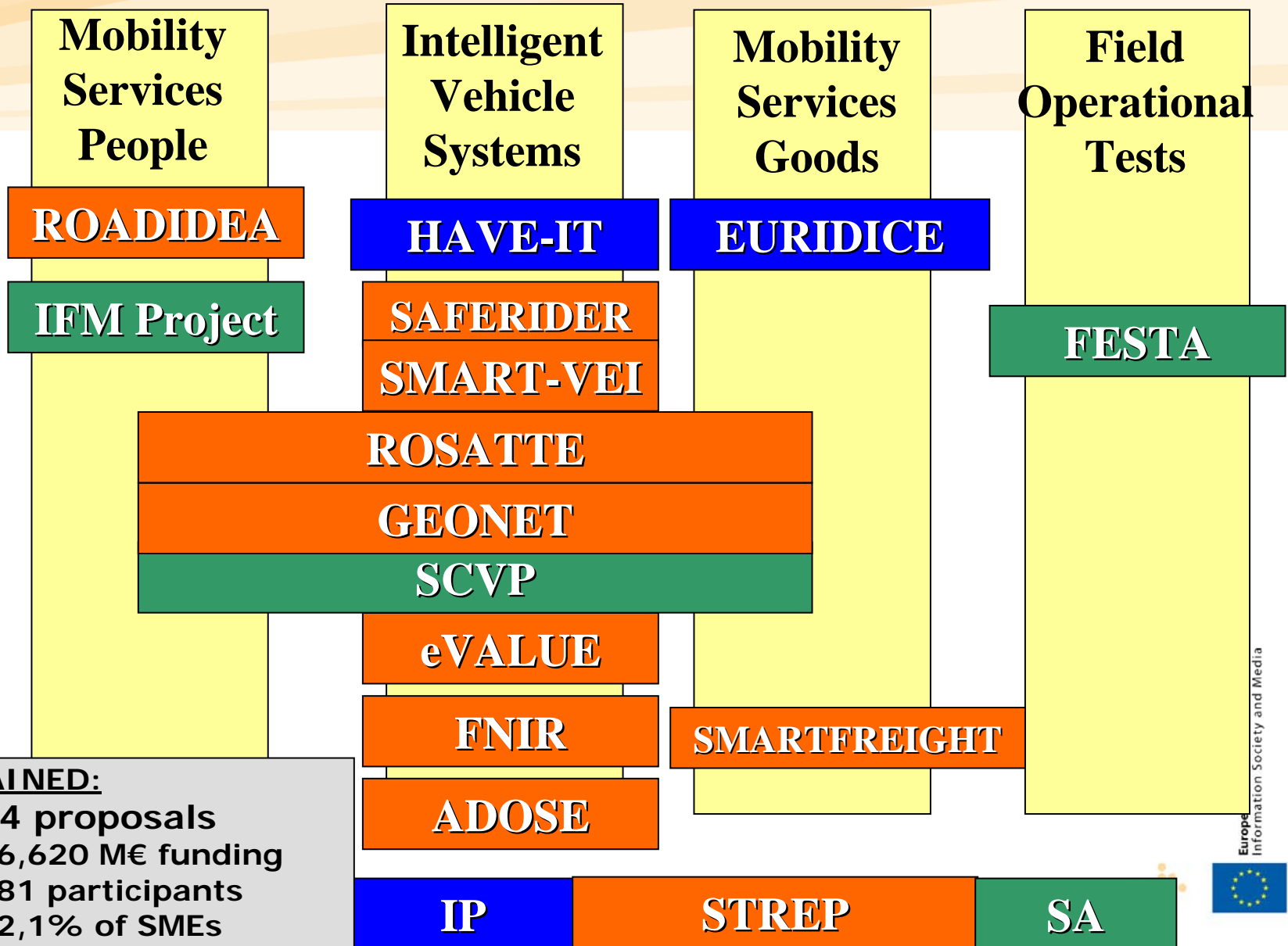
Projects within the first call: the CSAs

- **FESTA** aims to contribute to the development of best practice in the design and implementation of **FOTs** of key ICT functions.
- **IFM Project** aims to introduce **Interoperable fare management**, which will provide travellers with common styles of contact-less media for multiple transport services in different geographic areas.
- **SCVP** will produce a high quality **video documentary**, which will raise public awareness of eSafety systems.



RTD in ICT for Mobility (6)

7th FP Call 1 : Retained proposals



RETAINED:

- ✓ 14 proposals
- ✓ 56,620 M€ funding
- ✓ 181 participants
- ✓ 22,1% of SMEs

RTD in ICT for Mobility (7)

7th FP Call 2: Cooperative Systems

aims at

- advanced, reliable, fast and secure vehicle-to-vehicle and vehicle-to-infrastructure communication for new functionalities, real-time traffic management and new levels of support to active safety systems in vehicles and to the driver
- large scale test programmes (Field Operational Tests) with comprehensive assessment of the efficiency, quality, robustness and user-friendliness of IT solutions for smarter, safer and cleaner vehicles and real-time traffic management
- focusing on the sub-areas:
 - **Cooperative Systems**
 - **Field Operational Tests**
 - **Coordination and Support Actions:**
(related to Cooperative Systems; Standardisation; Assessment of Socio-economic Impact; International Cooperation; Training Activities)

**Indicative
budget
48 M€**

Overview of Selection

- Coverage of the WP ok in some but not all areas
- 65 eligible proposals (71 submitted)
- 28 met the evaluation thresholds
- **12 are under negotiation**



- **High overall quality of proposals (43% of submitted proposals above threshold)**
- **Good coverage of Co-operative Systems: 33 (53%) of the submitted proposals focused on co-operative systems technologies, and 7 proposals (11%) on co-operative systems architectures**
- **Field Operational tests well covered with 4 IP and 1 CSA proposal**
- **Environmental dimension not equally well covered (only 3 proposals addressed this explicitly)**
- **Strong industrial participation (with 13% SMEs) and European dimension**



Proposals under negotiation: the IPs

- **EUROFOT**: a proposal on **field operational tests** of mature **in-vehicle safety systems** let by industry. This proposal will built on the FESTA methodology and will assess in a large scale test the potential of these technologies to enhance their visibility and to create the momentum for future accelerated deployment.
- **TELEFOT**: a proposal on **nomadic devices** in vehicles These enter are more and more the vehicles without a proper assessment of their positive and negative effects. This proposal will perform a huge **field operation test** to **show their potential and give advice for safe and efficient use.**



Proposals under negotiation: the NoE

- **NEARCTIS: the proposal for this network of excellence will structure the research area on **Advanced Road Cooperative Traffic management in the Information Society**. It will contribute to the development of cooperative systems for road traffic optimisation and integrate cooperative systems into overall traffic management in order to cope with today problems of road traffic.**



Proposals under negotiation: the STREPs (1)

- **INTERSAFE-2**: the continuation of the successful sub-project INTERSAFE on **intersection safety** within the IP PREVENT. This proposal will enhance the technologies and systems developed before.
- **PREDRIVE**: will support the **communication architecture on V2V and V2I** via the development of system specifications that will be realised a in first prototype and will provide a simulation model for cooperative systems.
- **EVITA**: will work on the **prevention of unauthorised access and manipulation of onboard ICT systems**. It complements the running projects SEVECOM and NOW.



Proposals under negotiation: the STREPs (2)

- **ATESST 2:** the continuation of **ATESTT** will continue to develop the **architecture description language EAST-ADL2** for capturing requirements and allow the characterisation of the configuration of cooperative systems and will develop model based verification and validation systems.
- **PRECIOSA:** deals with **privacy issues of cooperative systems** and will develop a demonstrator of one application to show the protection of privacy in location based data. The final outcome will be a privacy aware architecture.
- **ITETRIS:** will develop **advanced tools for the coupling of traffic and wireless communication simulators**. This will allow large scale computing analysis of adequate communication protocols and algorithms for cooperative systems.



Proposals under negotiation: the CSAs

- **FOTNET:** the proposal will provide a platform for **knowledge exchange on field operational tests** with the FP as well as in Europa on national level. It will furthermore continue the work on the FESTA methodology.
- **ARTIC:** will build on the work of the **Network of Excellence ACE and antenna research for cooperative** systems and will transfer the knowledge acquired in this NoE to the domain of ICT for transport.
- **E-FRAME:** will continue the development of the **FRAME architecture and extend it to cooperative systems.**



And the future calls

- Need to cover area of clean and efficient road transport
- Field operational test of cooperative systems
- We have taken notice of your identified research needs



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EU Approach to Co-operative Systems

The role of the European Commission

Supporting Co-operative Systems via

- **Intelligent Car Initiative:**
 - eSafety Forum
 - RTD – FP7, CIP
 - User Awareness
- **eSafety Forum Working Groups on**
 - RTD
 - Communications WG
 - Service-Oriented Architectures WG
 - Security WG
 - WG ICT for Clean and Efficient Mobility
- **Standardisation**
 - ICT standardisation Work programme, ICT Call 2
- **Radio Spectrum Policy**
 - Radio Spectrum Decision 676/2002/EC



CODIA: Study on Impact Assessment

- Conducted by a consortium composed of VTT and TRL
- Duration 1/08 – 9/08
- The main task of the study is to **evaluate the impact of selected co-operative applications** with focus on
 - safety
 - traffic efficiency
 - environment

and carry out **cost – benefit analysis** for these applications.

The CODIA consortium will need to co-operate with the projects developing co-operative applications – this is fully supported by the Commission and we ask for your support!



The ITS action plan a new action under construction

- **Joint initiative from several DGs (TREN, INFSO, ENV, ENTR)**
- **To determine further action to enhance the deployment of ITS in Europe**
- **To facilitate the take up of ITS in order to realise their full potential**
- **First proposal of Commission now tested via:**
- **First high level interviews with stakeholders ongoing**
- **Future consultation with more stakeholders under planning**

Future workshops will be conducted in the next months to get more input from all stakeholders. An opportunity to take your share in this process.



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Conclusions:

To realise the potential of ITS including Co-operative Systems, we need

- Common pan-European Architecture and Deployment Model (Architecture Task Force)
- Policy support through the Intelligent Car and the eSafety Forum and its Working Groups (with Socio-economic Impact studies) and the ITS action plan
- Joint work on standards between ISO, IEEE, ETSI, CEN, IETF and Projects
- International Cooperation and harmonisation
- Spectrum Allocation at 5.9 GHz
- Field Operational Tests (FP7 Call5?)
- Continuation of RTD in Cooperative Systems



Thank you for your attention!

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www.ec.europa.eu/intelligentcar

www.ec.europa.eu/information_society/activities/esafety/index_en.htm

www.esafetysupport.org

www.esafetyaware.eu

