About Cooperative Systems in Europe

Geonet Final Workshop

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Content

- **Why Co-operative Systems?**
- **The EU Approach**
- **EC Support to Co-operative Systems**
- **Cooperative systems: Towards Deployment**
- **Next Steps**

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The Challenges

Future improvements are urgently needed

Safety

- 38.000 deaths on the roads (EU 2008)
- 1.7 million injured persons (EU27-2007)
- Human error involved in 93% of the accidents

Congestion

- Represents a loss of 1% GDP yearly
- 10% of road network daily congested

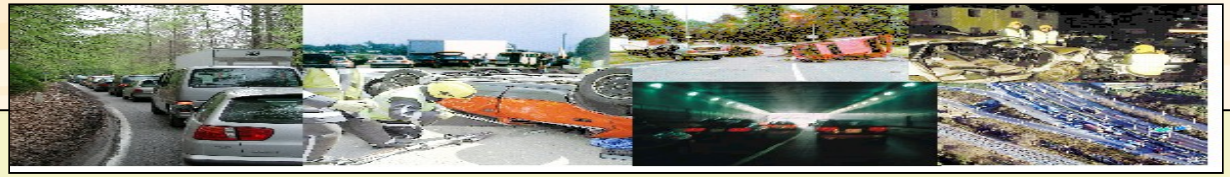
Energy Efficiency & Emissions

- Green house gases (CO2)
- Depending on fossil fuel
- Slow take-up of renewable fuels

Additional challenges and socio-economic trends

- Growth in demand
- Ageing of Europe's population
- Migration and internal mobility
- Increasing urbanisation

Why Co-operative Systems (2)
Road Safety in Europe



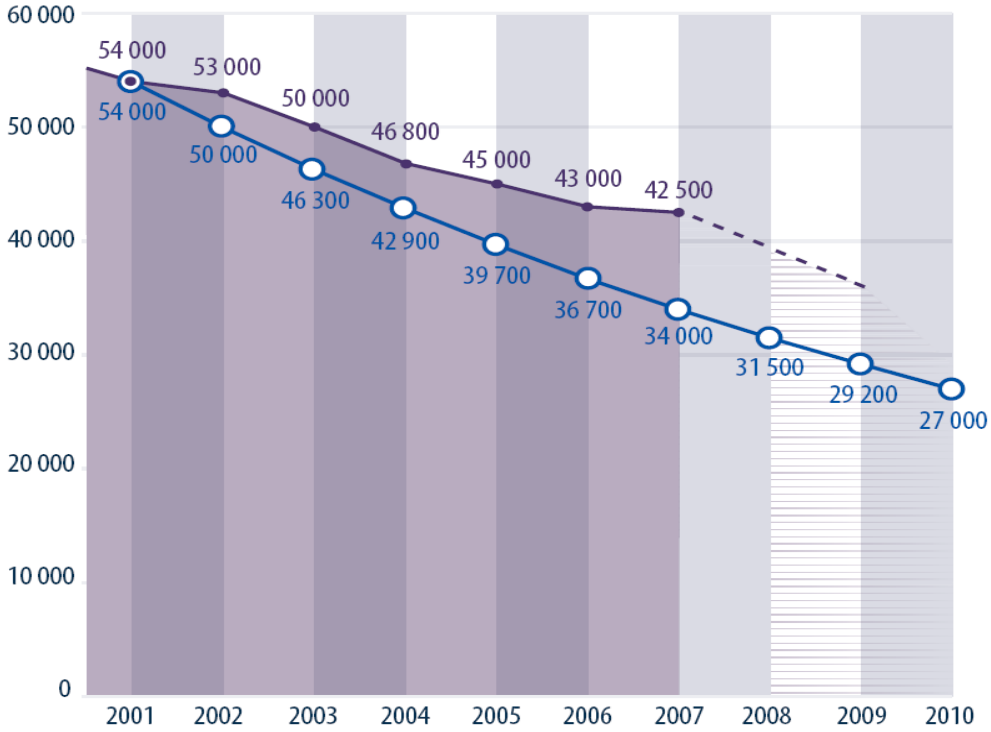
Halving the number of road accident victims in the EU by 2010

A shared responsibility

Road Transport in EU27

Road Accidents in 2008:

- ***38.000 fatalities***
- ***1.26 million accidents involving injury***
- ***1.7 million injuries***



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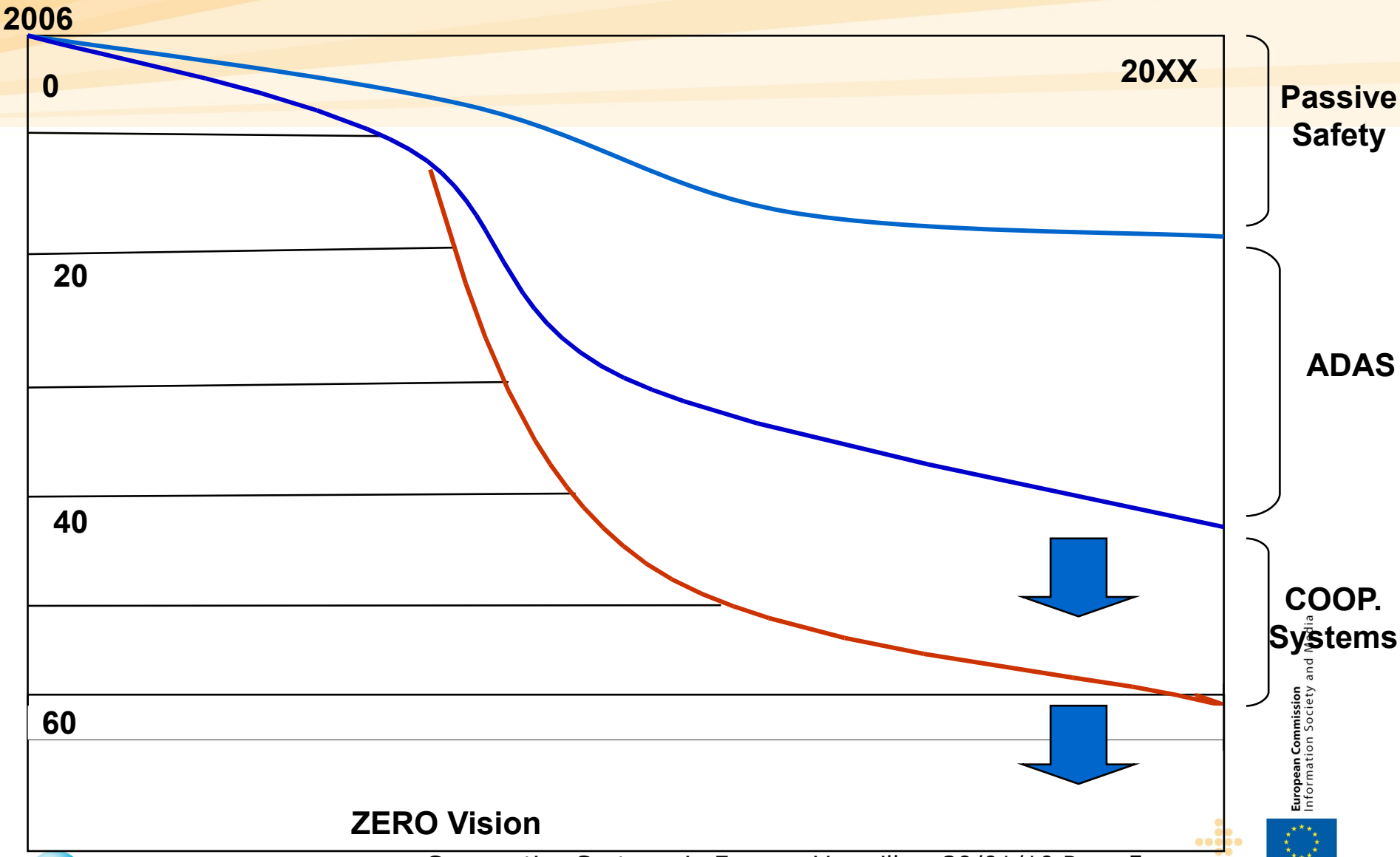
Why Co-operative Systems (3)
Towards the zero vision



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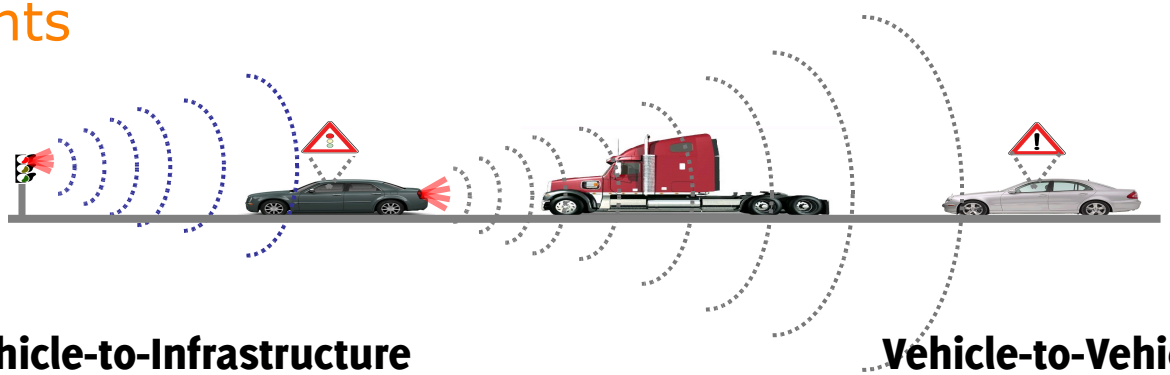
Why Co-operative Systems?

The potential benefits of Cooperative Systems

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



Vehicle-to-Infrastructure Communication (V2I)

Vehicle-to-Vehicle Communication (V2V)

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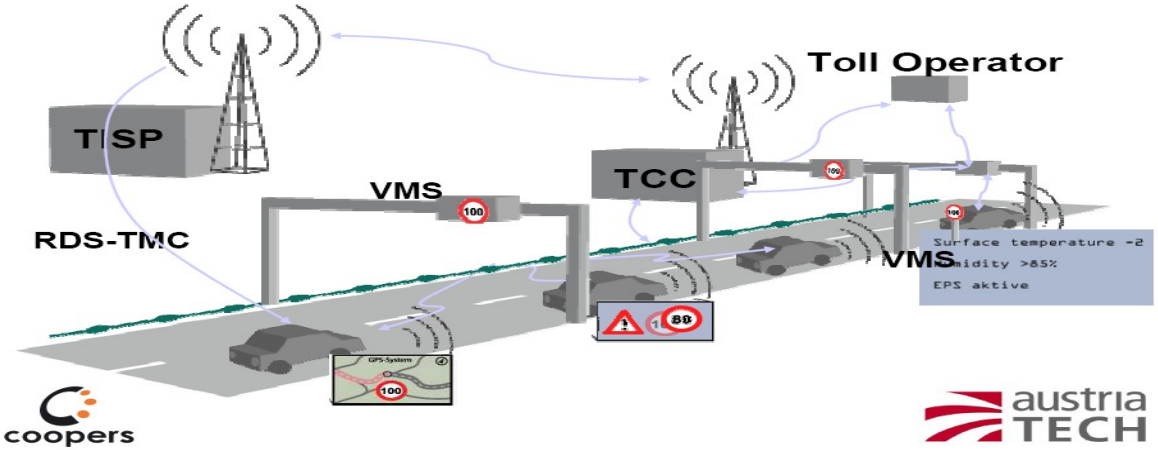
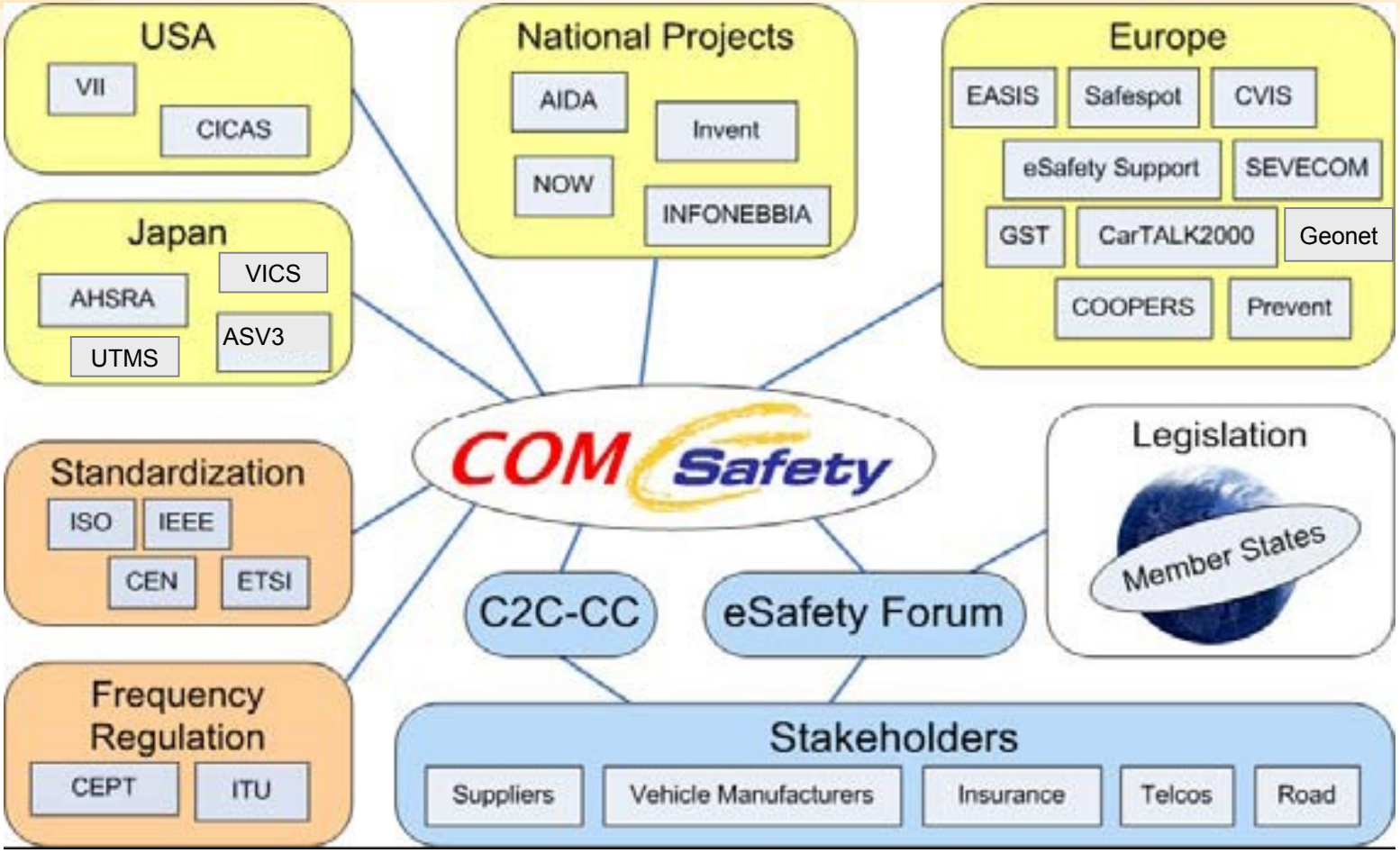
The EU Approach (1)
Main principles

The EU Approach

- Combines **RTD**, **Coordination and Support** and **Policy**
- Starts from the applications (**safety and efficiency**)
- Emphasises the need for **a converging single Communications Architecture**
- Promotes **international standards** and harmonisation (ETSI TC ITS, ISO/CALM, IEEE...)
- **International co-operation** important (International WS on Vehicle Communications)
- Building on the **results of earlier work** (GST, PREVENT..)

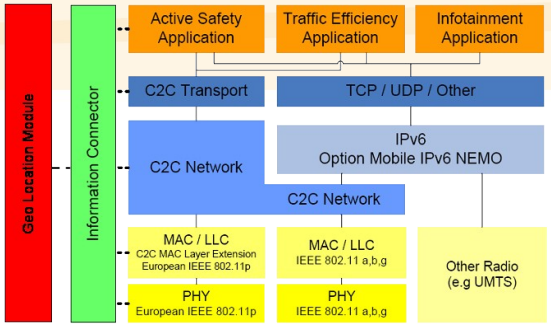


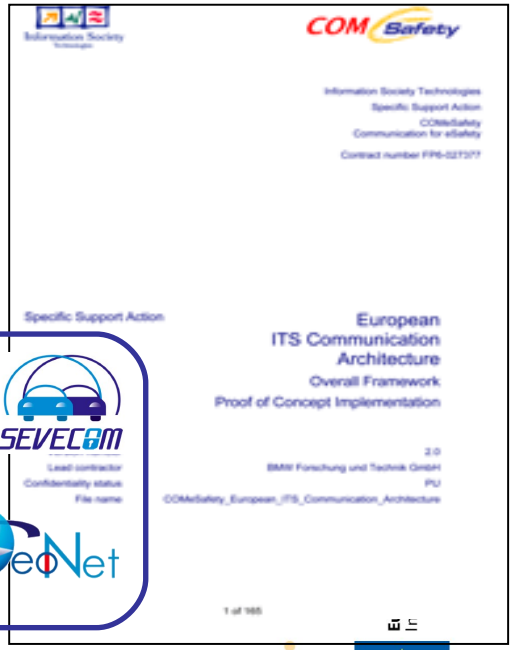
The EU Approach (2)
COMeSafety



The EU Approach (3)
Substantial results already obtained

- Integrated Projects CVIS, SAFESPOT and COOPERS demonstrating a number of interoperable applications both in safety and energy efficiency.
- The European ITS Communication Architecture: a joint effort coordinated by COMeSafety
- The PRE-DRIVE C2X project (started in June 08) will maintain the architecture and develop it further, together with ETSI





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EU Approach (4): International Cooperation
Taking a global approach

5th International Workshop on Vehicle Communications

Europe supports a global approach to Cooperative Systems which aims at a common communications architecture, interoperability and global, open standards.

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EC Support to Co-operative Systems
The role of the European Commission

- Supporting Co-operative Systems due to their socio-economic benefits via the **Intelligent Car Initiative**
- eSafety Forum Working Groups on
  - eRTD
  - Communications WG
  - Service-Oriented Architecture WG
  - Security WG
- Standardisation
  - EC Mandate on ITS standardisation
  - ICT standardisation Workprogramme
- Radio Spectrum Policy
  - Radio Spectrum Decision 676/2002/EC

CEPT ECC Electronic Communications Committee

COMMISSION DECISION 2008/671/EC on the harmonised use of radio spectrum in the 5875-5905 MHz frequency band for safety-related applications of Intelligent Transport Systems (ITS)

- Adopted on 5 August 2008
- The purpose is to harmonise the conditions for the availability and efficient use of the frequency band 5 875-5 905 MHz for safety related applications of Intelligent Transport Systems (ITS) in the Community.
- Member States shall, not later than six months after entry into force of this Decision, designate the frequency band 5 875-5 905 MHz for Intelligent Transport Systems

EC Support to Co-operative Systems (3)

RTD in the 6th and the 7th FP

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2002
2003
2004
2005
2006
2007
200

6th FP

- Call 1 — Intelligent Vehicles & Mobility Services — 14 projects, 80 M€ grant
- Call 4 — Moving to Cooperative Systems — 22 projects, 92 M€ grant

7th FP

- Call 1 — Intelligent Vehicles & Mobility Services — 14 projects, 57 M€ grant
- Call 2 — Cooperative Systems — 12 projects, 48 M€ grant
- Call 4 — Safety & Energy Efficiency in Mobility — 14 Project: 53M€
- Call 6 — FOT Cooperative systems — Indicative grant: 37M€
- Workprogramme to be prepared — Mobility of the Future

Workprogramme 2009-2010
Call 6 - Topics proposed

Call 6 - Objective 6.2:
ICT for Mobility of the Future

- Field Operational Tests for Integrated Safety Systems and Co-operative Systems ⇨ IP, STREP, CSA
  - assess improvements in efficiency, safety and comfort
  - analysis of user acceptance, performance and benefits
- ICT-based Systems & Services for Smart Urban Mobility & New Mobility Concepts ⇨ STREP
  - address the environmental footprint and safety of mobility, while fostering economic growth
- Coordination and Support Actions ⇨ CSA
  - Including International Cooperation

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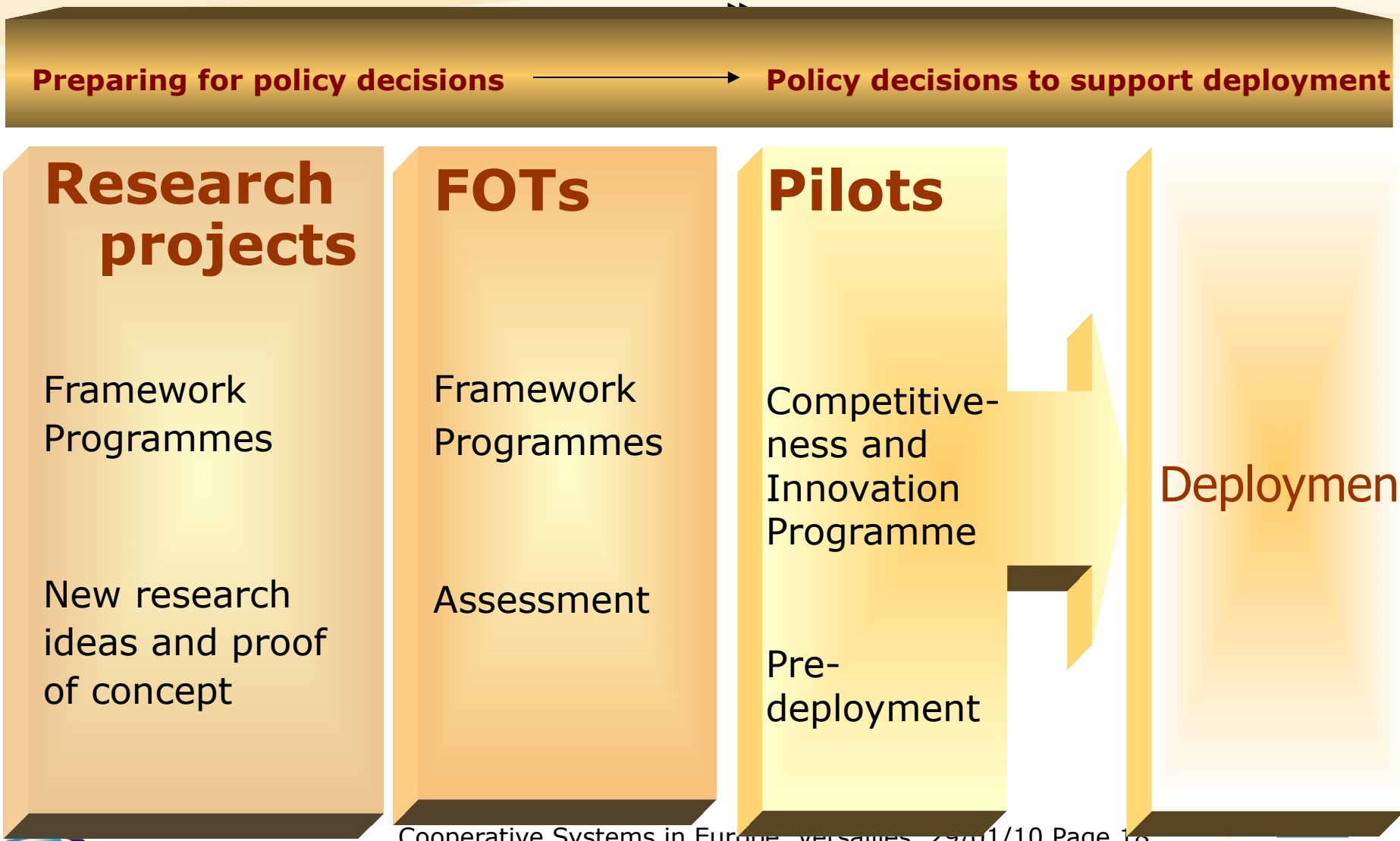
FOTs and Pilots
Between research and deployment



Deploying Co-operative Systems
Field Operational Tests (FOT)

2008	2009	2010	.....

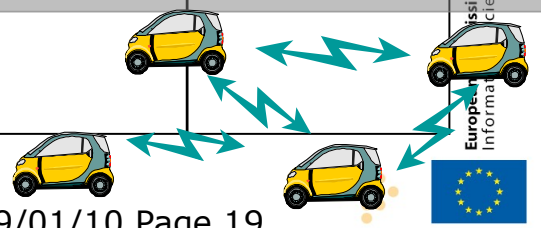
Phase 1
Preparation.
Develop
- Structure
- Framework
- Methods
- …

for conducting FOTs

FESTA.

Phase 2: Field Operational Test on Autonomous Vehicle ICT Systems

Phase 3: Field Operational Test on Cooperative ICT Systems



Deploying Cooperative Systems: Standardisation. Why?

ITS deployment is slow in Europe...

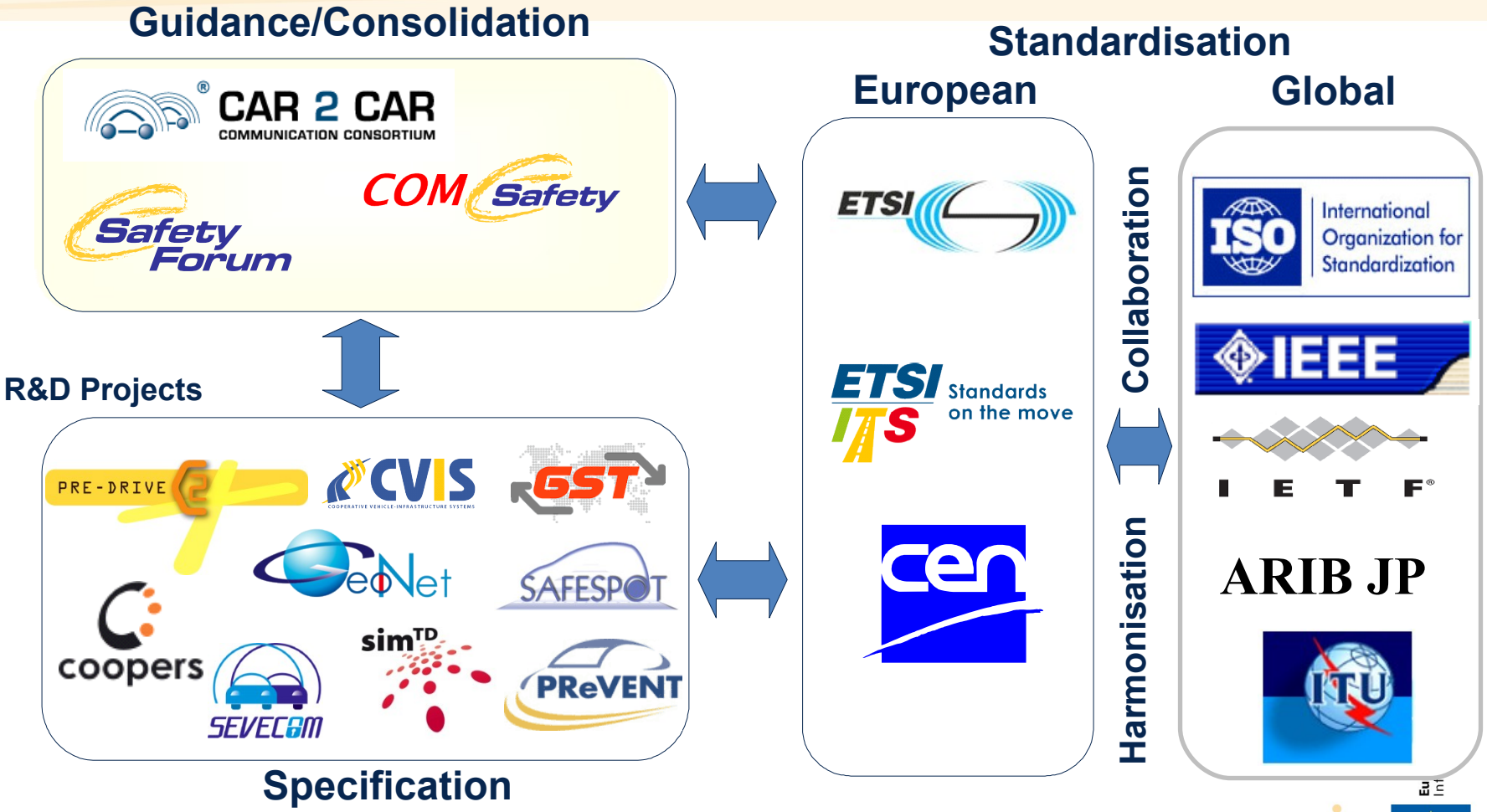
- fast technical development => high number of mature applications, but **not big enough market** to support commercial deployment (with a few exceptions)
- benefits and return on investments highly depending on the **scale of deployment**
- **Organisational issues**: EU level, national level, regional level, local level actors; responsibilities not clearly defined
- **Many actors** have **different interests** and objectives (policy, commercial)
- To function ITS services and systems need to be **interoperable,** which would need co-operation between the stakeholders which is not always there
- Co-existence of commercial and public services not solved (e.g. Real-Time Traffic Information)
- patchwork of national, regional and local solutions

Lack of architecture and standards

Deploying Cooperative Systems: Support to Standardisation

- Setting of the priorities
  - Regular discussions at the eSafety Forum and its Working Groups
  - ITS Standardisation Steering Group (ITS-SG)
- EC Mandate to ESOs for ITS Cooperative Systems standardisation
- Possible Funding of standardisation activities:
  - ICT Standardisation Work Programme
  - ICT Calls under FP7
  - Mandate 453

Deploying Cooperative Systems: Standardisation - A Cooperative Effort



Deploying Cooperative Systems

ITS Standardisation in Europe
TC ITS Workshop 4-6 February 2009

- 125 participants
- ETSI members – European projects – European Commission
- TC 204 – Japan – Korea – USA – ITU-T – ITU-R

R&D Projects
European Commission
ITS in place
Activity discussions from WGs
Road operators / Infrastructure
Test Interoperability and FOT
International cooperation

Increased standardisation activity in 2009 – 2010
Political pressure on depolyment
Commission Directive/Mandate
Global standardization aspects
ETSI ready to lead

Next workshop – 10-12 February 2010

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Next Steps (1)

The Common pan-European Communications Architecture and the allocation of 30 MHZ for ITS in the 5.9 GHz band form the basis for future development of Co-operative Systems in Europe

- Moving ahead with standards (ETSI, IEEE, ISO..)
- FP7 ICT for Mobility Calls
  - Call 6 launch 24 November 2009, close 13 April 2010
- Proof of concept and demonstrations
  - Dedicated European Showcase (2010)
  - TRA 2010 (June 2010)
  - Launch of Field Operational Tests (2011)
- The International WS on Vehicle Communications

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Next Steps (2)
ITS Action Plan

COM(2008) 886: 24 Actions in 6 Priority Areas

- Optimal Use of Road, Traffic and Travel Data
- Continuity of Traffic and Freight Management
- Road Safety and Security
- Integration of Vehicle and Transport Infrastructure
- Data Protection and Liability
- European ITS Coordination

+ Proposal for a Directive on Deployment of Intelligent Transport Systems (ITS)

Next Steps (3)
ITS Action Plan – Area 4

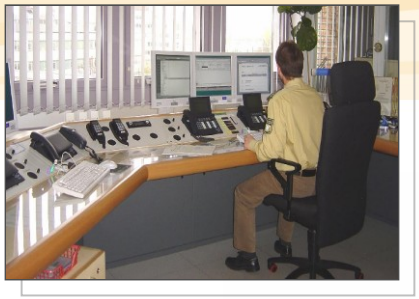
1. Open in-vehicle platform architecture
2. Development and evaluation of cooperative systems
3. Specifications for communication:
   - infrastructure-to-infrastructure
   - vehicle-to-infrastructure
   - vehicle-to-vehicle
4. Mandate for European standardisation

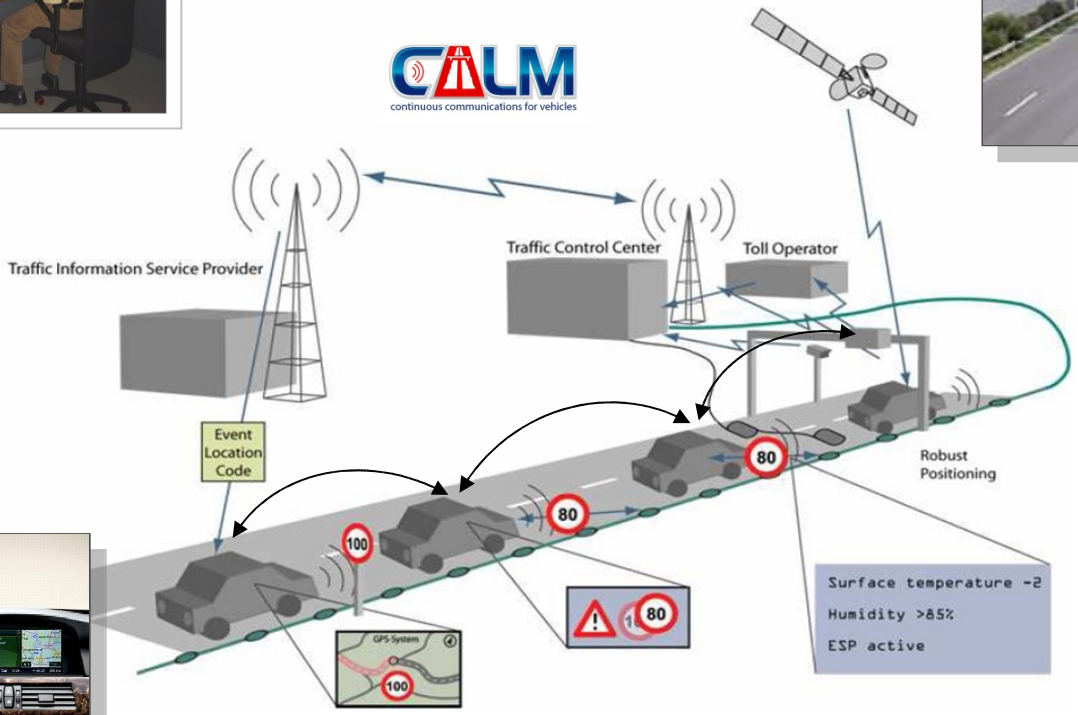
Next Steps (4)
The project Easyway

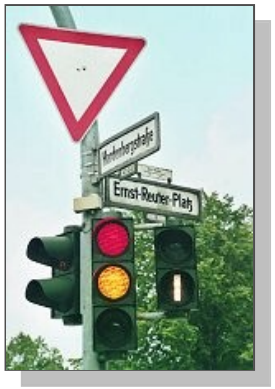
- Financially supported by the EC under the Multi Annual TEN-T Programme (2007-2013) : €300 Millions in three cycles on a total budget of €1.5 Billion
- EasyWay project focuses on a Europe-wide harmonized deployment of "Core ITS services" on the tarns-European road network
- This deployment is in 3 thematic ITS domains, in addition to the ICT infrastructure:
  - Traffic management
  - Travel & traffic information services
  - Freight & logistics services
- Importance of involvement of new MS: today 21 Member States (with 2 observers) are participating in EasyWay. (Countries currently not participating in EasyWay are: : Estonia, Latvia, Malta, Luxembourg, Poland, Bulgaria.)
- This is an opportunity to be involved in ITS deployment at European level.

Conclusion

ITS is getting increasingly complex…







Source: COMeSafety and COOPERS projects

Conclusion
What do we need?

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

- Use of the Common pan-European Architecture and Deployment Model (Architecture Task Force)
- Joint work on standards between ETSI, ISO, IEEE, CEN, IETF and Projects
- Policy support through ITS Action Plan, the Intelligent Car and the eSafety Forum and its Working Groups (with Socio-economic Impact studies)
- International Cooperation and harmonisation (including national activities)
- Field Operational Tests (FP7 Call6)

More information

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eSafety Web-site:
http://europa.eu.int/information_society/programmes/esafety/index_en.htm

*e*Safety on CORDIS website:
www.cordis.lu/ist/so/esafety/home.html

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

eSafetySupport website
www.eSafetySupport.org

Thank you for your attention!