

Cooperative Intelligent Transport Systems

...providing for sustainable transport



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Develop and deploy ITS
Cooperative ITS - V2V V2I



700 members from 60 countries driving ICT Standardisation
Member and consensus driven
European Commission acceptance - regulatory role
ETSI TC ITS standardisation activities for ITS

Why cooperative ITS

Transport EU-25, road accidents

41.600 fatalities

1.4 million accidents involving injury

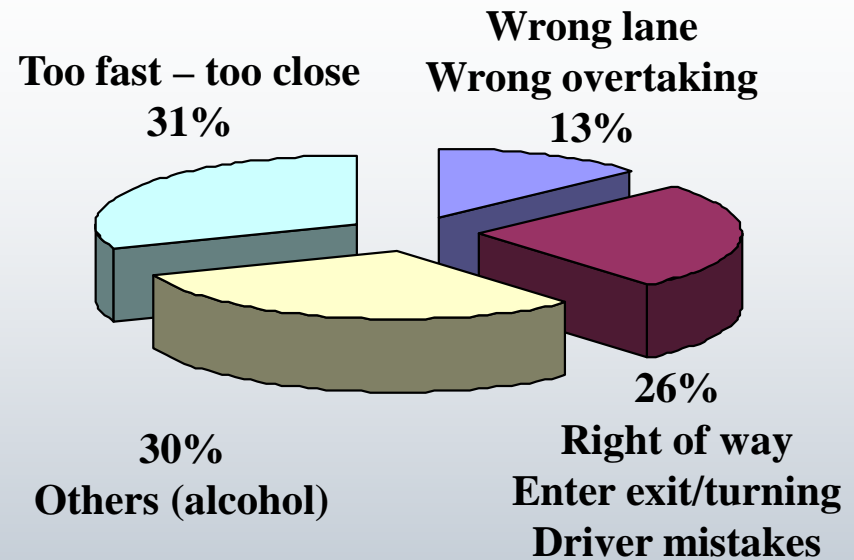
Costs €200 bn/Y or 2% EU GDP

2.0 million injuries

Source: DG TREN-Statistical Pocket Book 2004



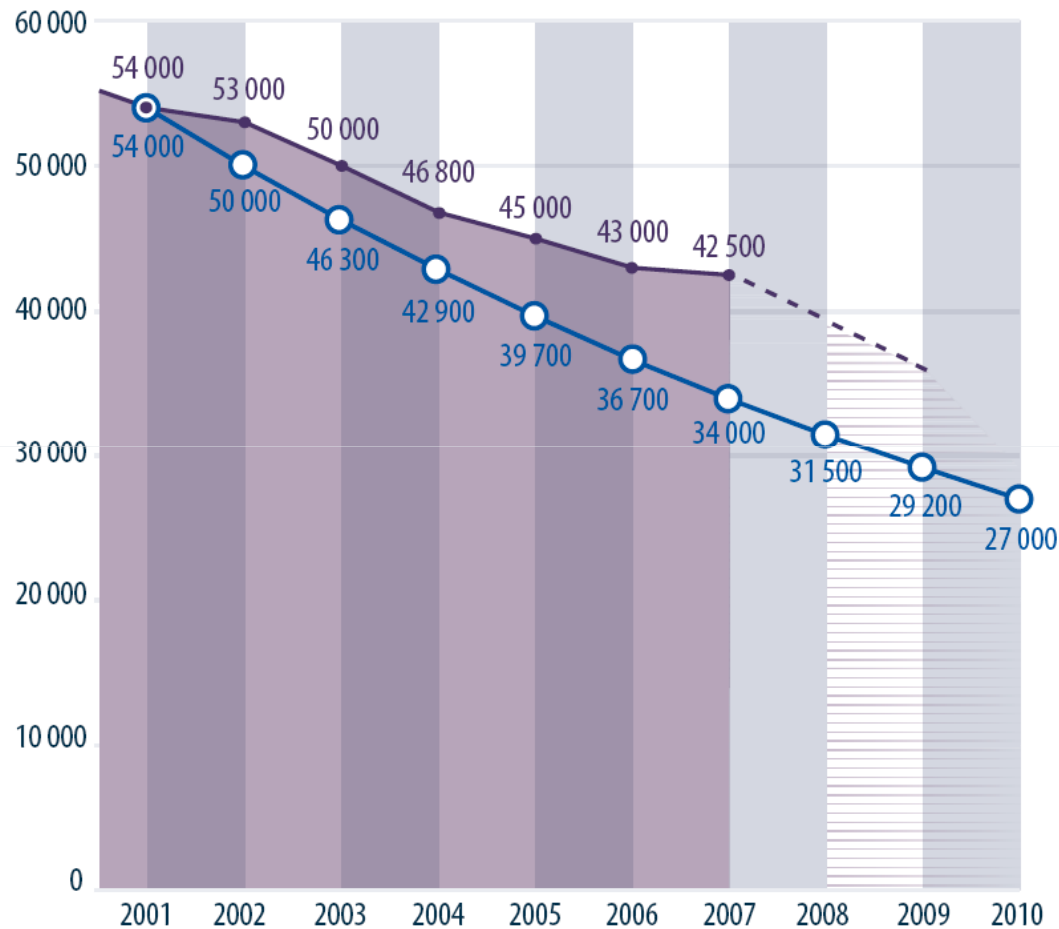
Reasons for accidents 86% involve drivers



Source: Verkehr in Zahlen 2003, Deutscher Verkehrs-Verlag

50% improvement by co-operative driver assistance

Fatalities on the roads in Europe – EU policy goals



**ITS deployment
is needed now..**



Transport is essential to Europe

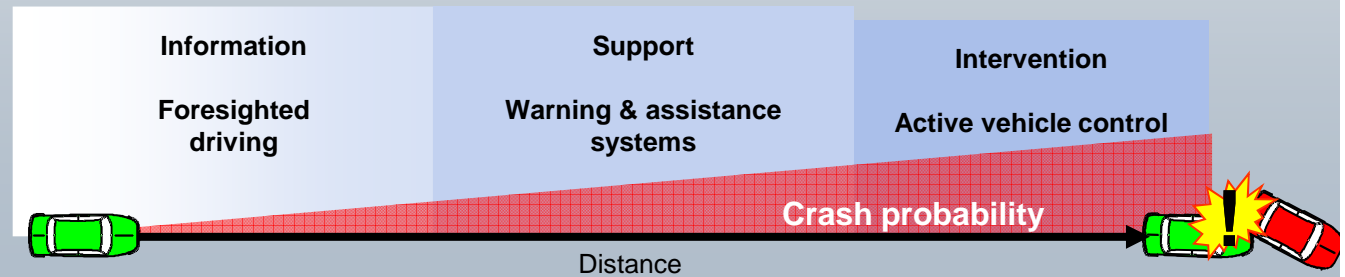
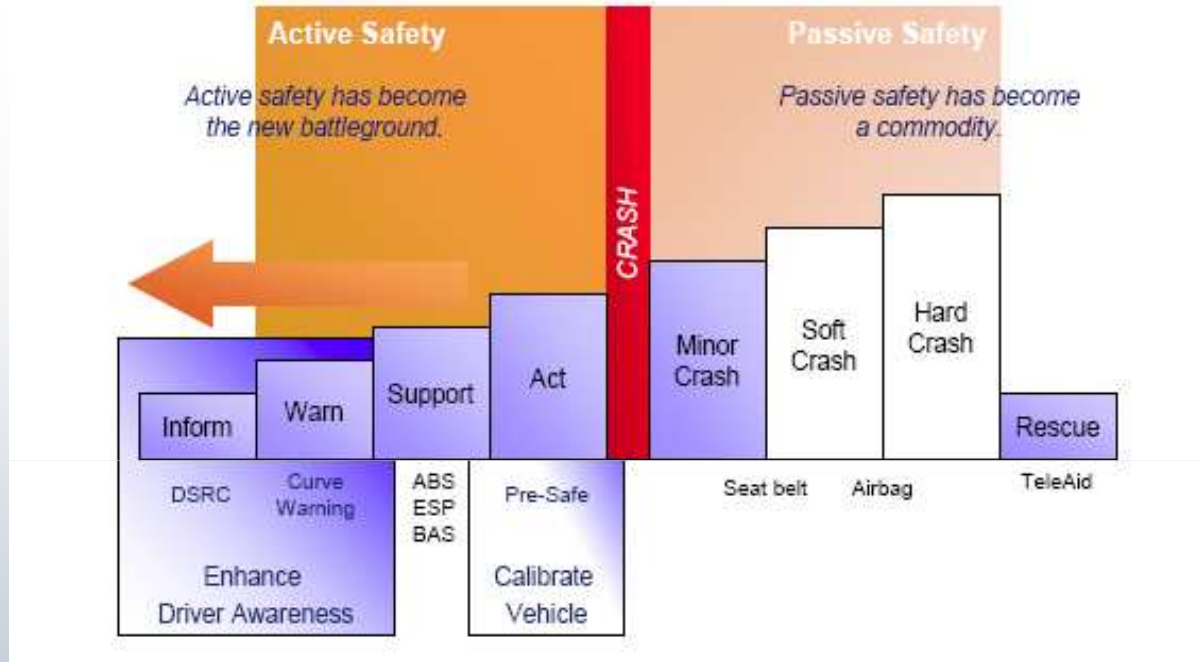
- **EU transport sector: 11% of GDP**
- **15 million jobs**
- **13% of households spending**
- **Important industry that makes a major contribution to the functioning of European economy**
- **Road Transport: 44% of Freight – 2.3% annual growth
85% of passengers – 1.9% annual growth**

**European Transport Policy
aims to provide safe and
efficient mobility while
respecting the environment**



Driver assistance to avoid crash

Focus in safety shifts towards accident avoidance and collision mitigation.



Driver assistance by ITS

Traffic safety life-saving

Traffic efficiency
Congestion control

Value added services
Location based services



Simple sensors:
Worse than the driver

Communication:
Better than the driver

Complex sensors:
As good as the driver

Decarbonisation of EU transport – The big picture

- GHG emissions from transport +32% during 1990-2005
- Transport largely dependent on oil
- Strong need for increased mobility
 - Prediction for 2000-2020: freight transport +50 %, passenger transport +35 %
- EU targets by 2020
 - 20 % reduction of GHG gases (/30%)
 - 20 % increase in energy efficiency
 - 10 % renewable transport fuels
- ICT plays an important role!



Action Plan for the Deployment of ITS

- Part of Greening Transport Initiatives

- Action and measures
- Transport efficiency
 - Logistics chains management
 - RTTI services
 - Cooperative systems (V2V, V2I, I2I)
- Greening of Transport
 - Electronic Toll Collection
 - Navigation and eco-driving
 - Green transport corridors



The European Green Cars Initiatives

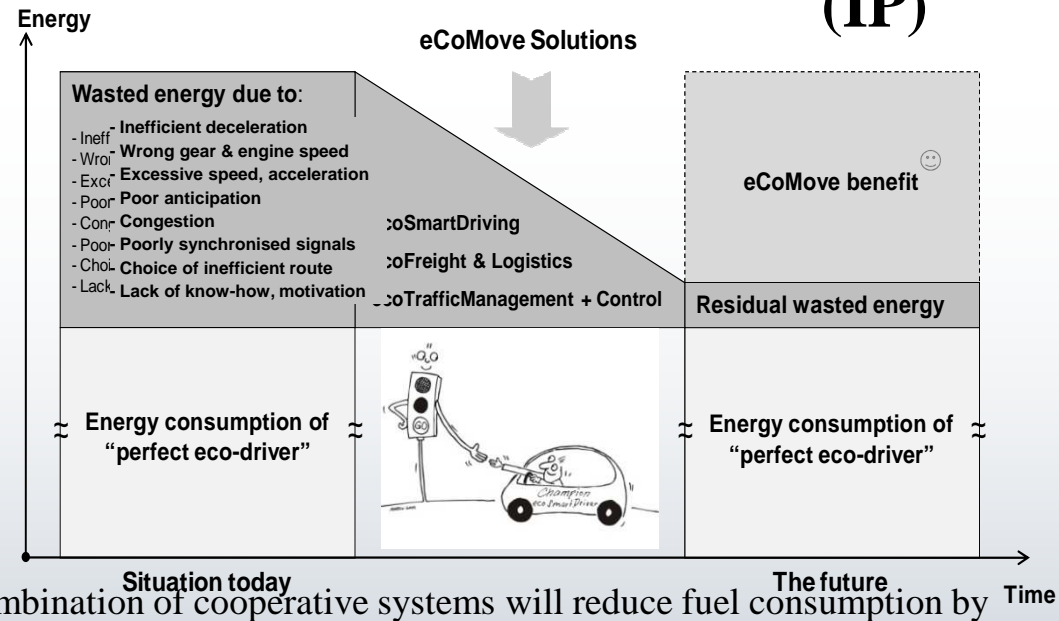
- Part of the European Economic Recovery Plan 2008
- Public-Private Partnership
- Loans by the European Investment Bank (4 B€), research component 1 B€ (DGs RTD, INFISO, TREN)
- Research topics:
 - Transport electrification, lower emission trucks, greener internal combustion engines, logistics and transport system optimization, biofuels and hydrogen fuel cells
- DG INFISO contribution 110 M€, ICT for Fully Electric Vehicles (FP7 Calls 4,5,6)

European Large Scale Action - ELSA

- The EC is considering to support a set of focused projects of significant scale and duration that cut across the innovation cycle to develop modern pan-European service infrastructures
- Mobilization of resources:
 - grants for R&D, pre-commercial procurement and support for innovation and
- Deployment, using a variety of instruments
- ELSA in Transport focuses on energy efficiency and safety
- FP8 Timeframe, 2014 onwards (ramp-up actions under FP7?)

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 project results
- 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

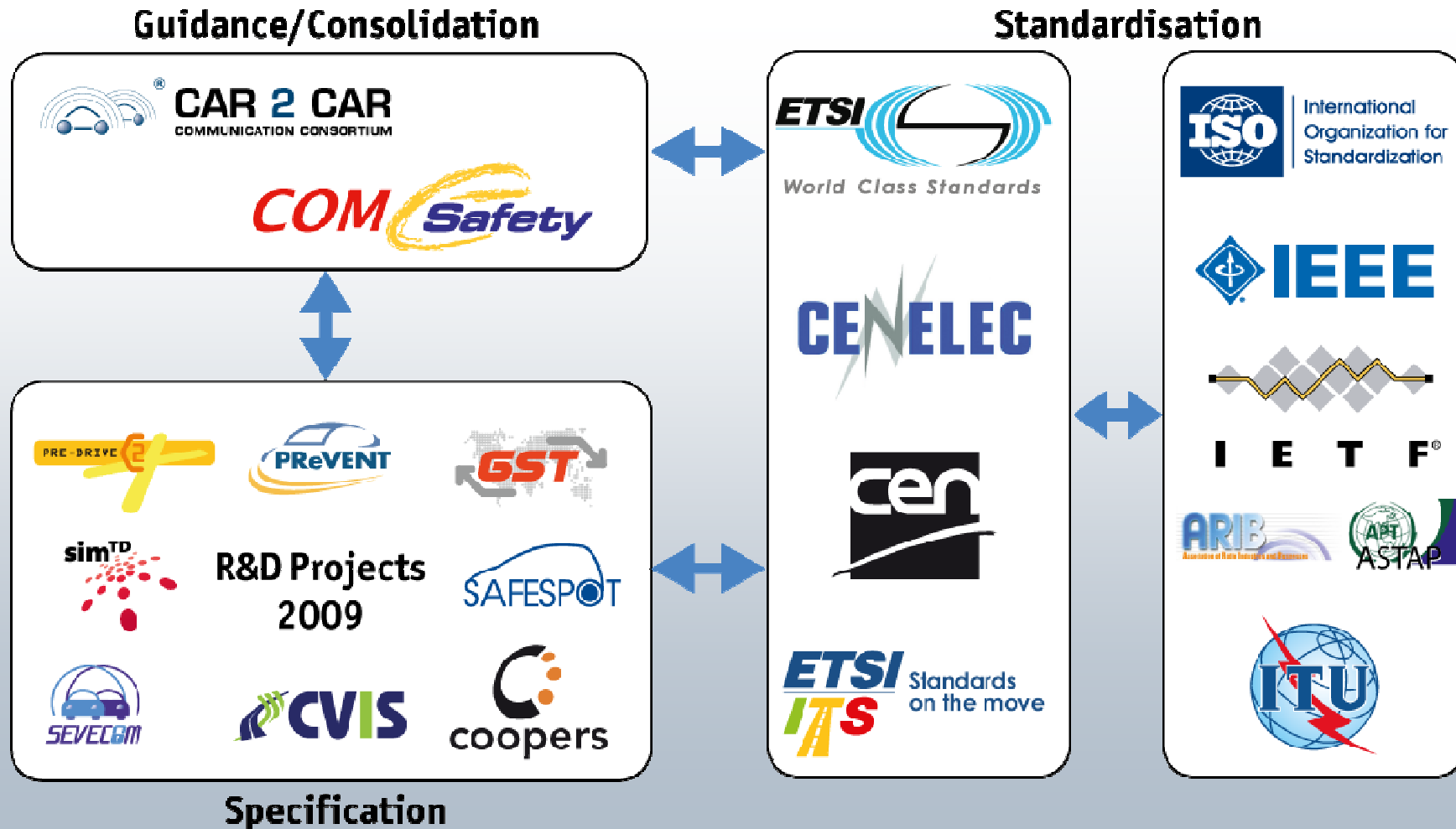
Total costs: ±22.5 M€

EC contribution: ±13.7 M€

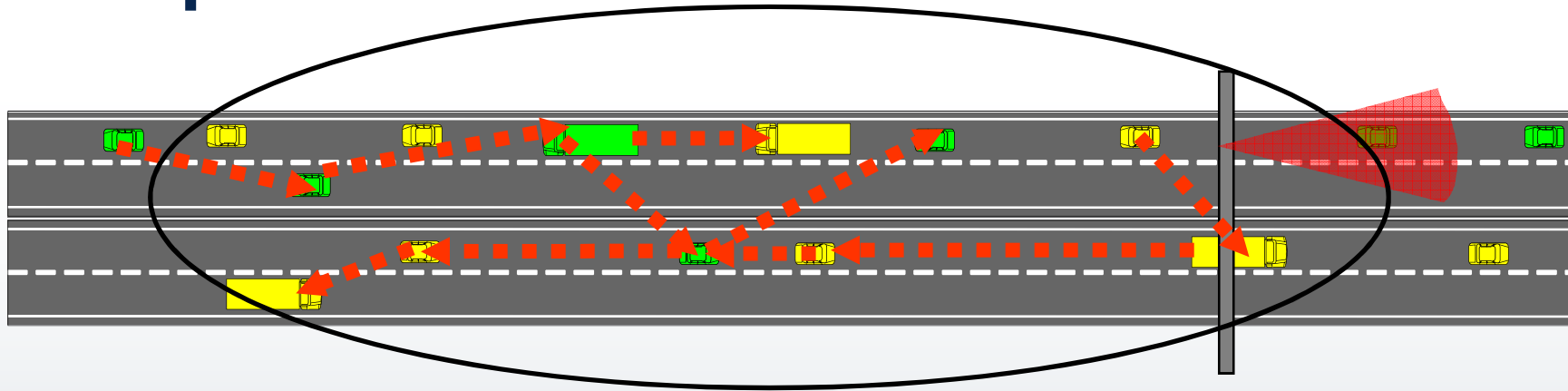
Start date: Q1/2010

Duration: 36 months

The road towards standardisation

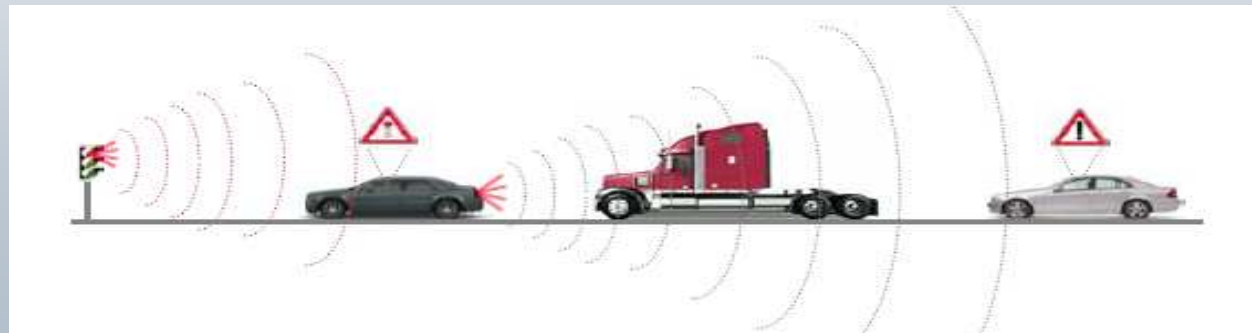
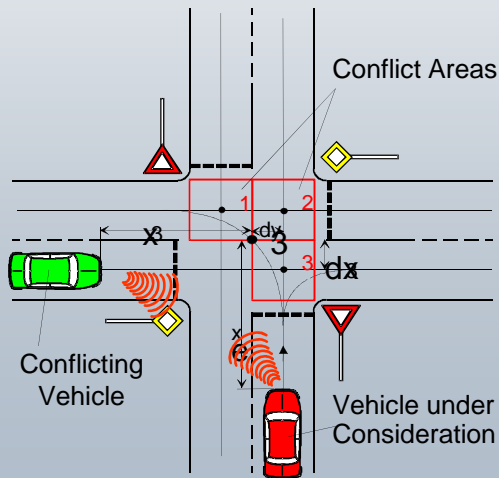


Cooperative ITS



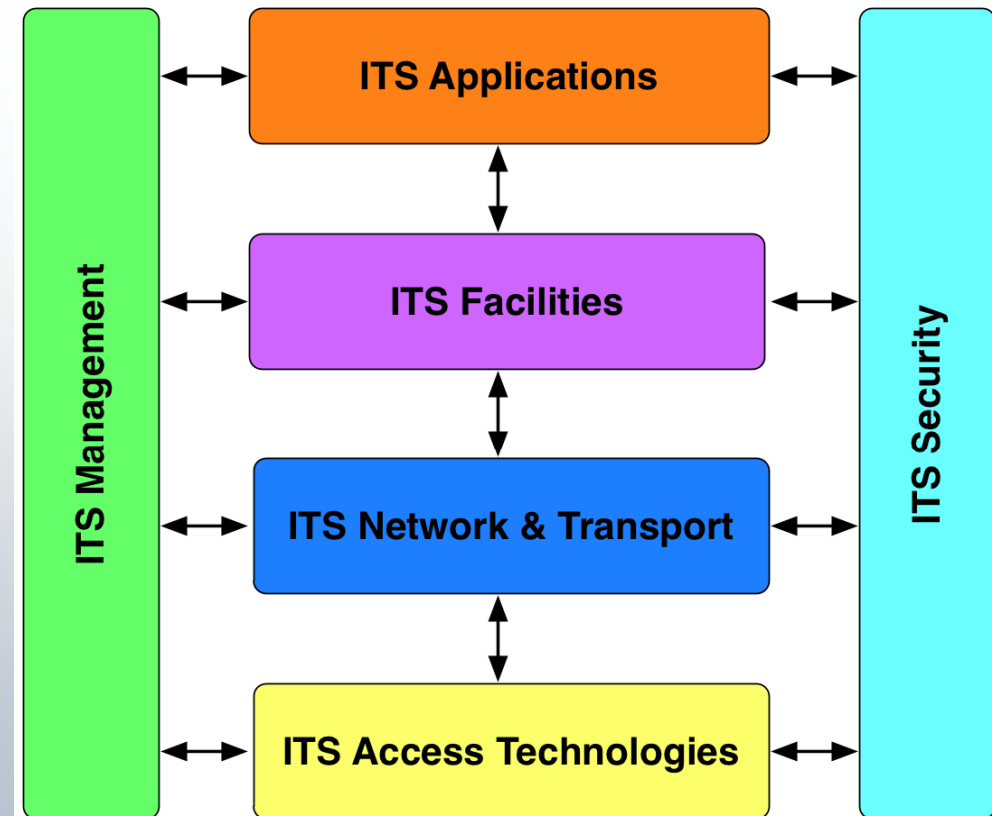
Ad hoc networks by Cooperative awareness messages

V2V – V2I – I2I



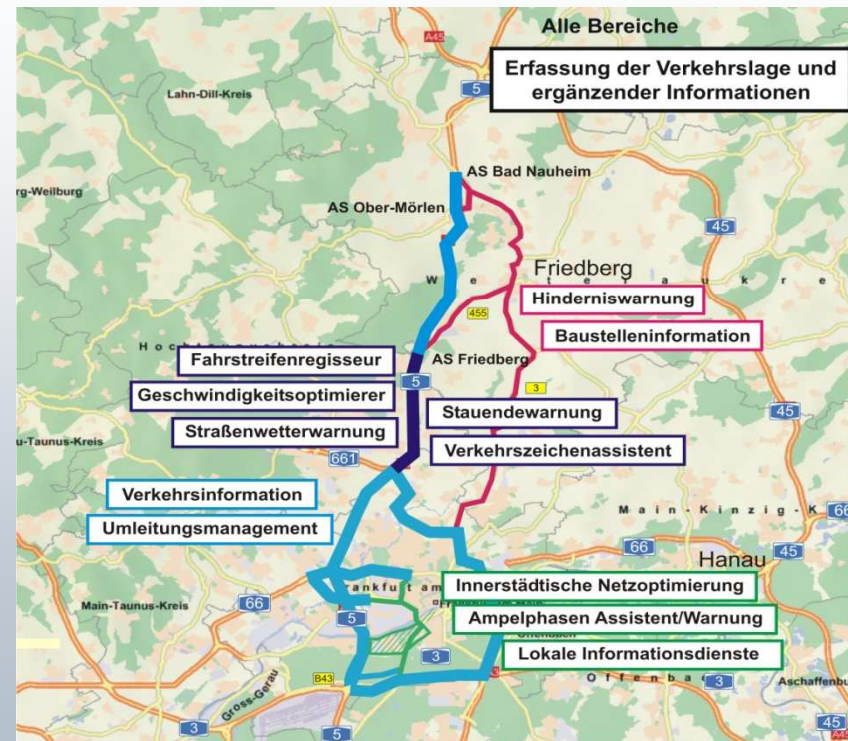
Communication architecture

- Developed within R&D in pre standardisation
- Basic set of applications
- Cooperative Awareness message
- Facilities - Local Dynamic Maps
- GeoNetworking
- Media 5.9 GHz - other systems
- Security - privacy
- Standardisation in ETSI TC ITS
- First set of standards ready 2009
- International cooperation
- EC Standardisation Mandate



Field Operational Tests

- **SIM-TD** (Safe and Intelligent Mobility – Test field Deutschland)
German vehicle manufacturers – suppliers-
Deutsche Telekom
State of Hessen
Technical universities.
- Sept 2008 – September 2012
- Safety – traffic efficiency and Value-added services
- Roll out scenarios
- Test and validation
- Verification of functions and requirements
- Similar FOT
 - France – Sweden and Italy



Roadmap towards deployment

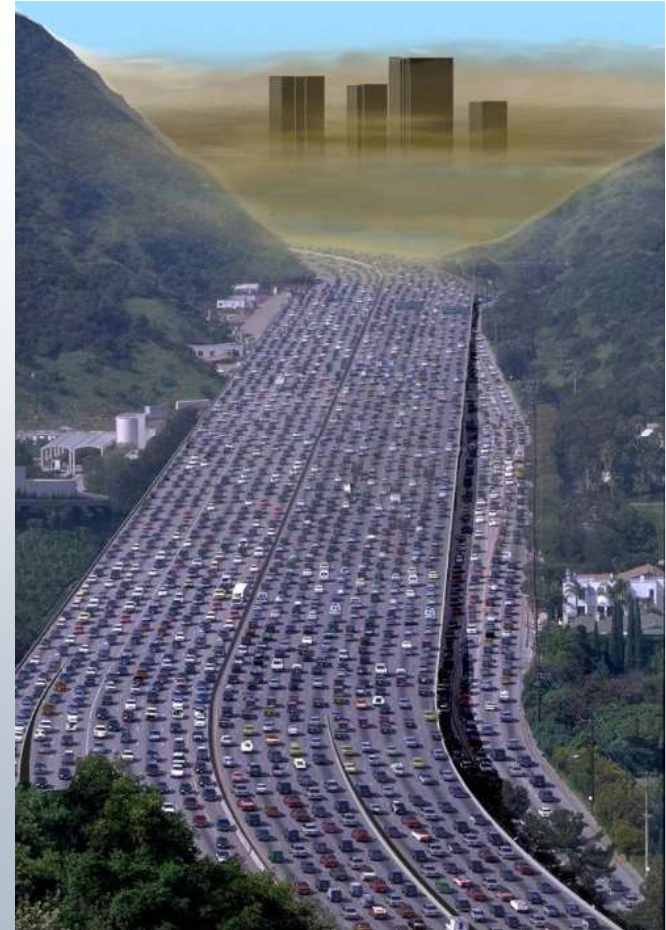
- Standardisation \implies 2013
 - Field Operational Tests
 - Infrastructure facilities
 - Achieving 10%+ penetration
-
- International coordination
 - Traffic efficiency and non safety support functions
 - Safety applications to meet policy objectives.....



Guess for implementation

Business projection – Impact Assessment

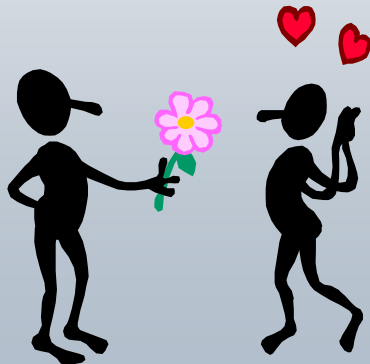
- Safety related applications
 - reduction of fatalities
 - avoid accidents
 - reduction of consequences
- Traffic efficiency
 - Traffic jam in Germany €17 billion every year – EU €50 bn+
 - Reduction of fuel consumption supporting the Green Agenda
 - Public private partnership
- Value added services
 - Real time driver/passenger support
 - Local based services





Thank you for your attention

- Good luck for the COP15 in Copenhagen



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