Cooperative Systems and Vehicle Safety Communications

The European challenge and the political framework

Juhani Jääskeläinen,
Deputy Head of Unit, ICT for Transport
DG Information Society and Media
European Commission

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Co-operative Systems - the Vision

Co-operative Systems with vehicles communicating with each other and the infrastructure will enhance the support available to drivers and other road users over the stand-alone systems. They will provide for

- Greater transport efficiency
  - Making better use of the capacity of the available infrastructure
  - Allowing new management concepts
- Increased safety
  - Improving the quality and reliability of information used by ADAS systems
  - Allowing the implementation of advanced safety applications
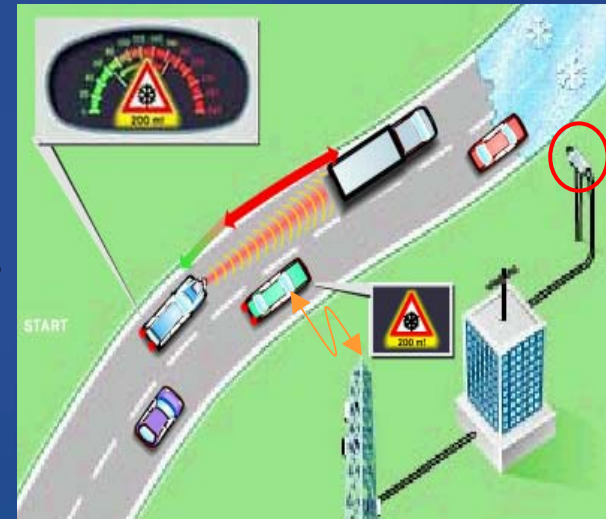
The Political Framework Contributing to growth: i2010

- **i2010 – European Information Society 2010**
    - Part of the renewed Lisbon Strategy
    - Communication Adopted 1 June 2005 !
    - Aims to generate growth and jobs by investing in Knowledge and Innovation
- **Priority Objectives**
    - Seamless access to information and services – European Information Space
    - Innovation and investment in research
    - Inclusion through better public services and quality of life
- **Safe an efficient mobility is a major contributor to i2010 !**

The Political Framework Supporting Innovation: CARS-21

- ## CARS-21 High-Level Group
  - Created in early 2005, Chair Vice-President Verheugen
  - Joins EC, Member States, European Parliament, Automotive Industry, Trade Unions, NGOs, Users
- ## Objectives
  - To make recommendations for policy and regulatory framework for the automotive sector that enhances competitiveness, safety and sustainability
  - To develop by the end of 2005 a Road Map for 10 years
- ## CARS-21 and Innovation
  - Setting up conditions for innovation is a priority goal
  - *Particular attention will be given to eSafety*

The Political Framework Supporting Road Safety

- **Road Safety Action Progamme**
  - Halving the number of fatalities in Europe
  - Mid-Term Review in June 2005: Stock-taking, further measures
- **eSafety**
  - eSafety Communication in 2003
  - The eSafety Forum and its Working Groups
  - 2nd eSafety Communication in 2005
- **Research and Technological Development – IST Programme, FP6**
  - 1st Call – eSafety Systems
  - *4th Call – Co-operative Systems*

The Political Framework
The *e*Safety Forum (1)

- **Forum Objective**: **To promote and support the development, deployment and use of intelligent vehicle safety systems.**

- **Plenary Sessions**: **All stakeholders, chaired by the Commission (currently over 150 members)**

- **High-Level Meetings**

- **Working Groups**: **Specific focus, chaired by industry**

The Political Framework
The *e*Safety Forum (2)

- **Forum Meetings 2003**
  - 22 April (Brussels)
  - 17 November (Madrid)

- **Forum Meetings 2004**
  - 25 March (Brussels)
  - 27 September HL Meeting with the Member States (Brussels)
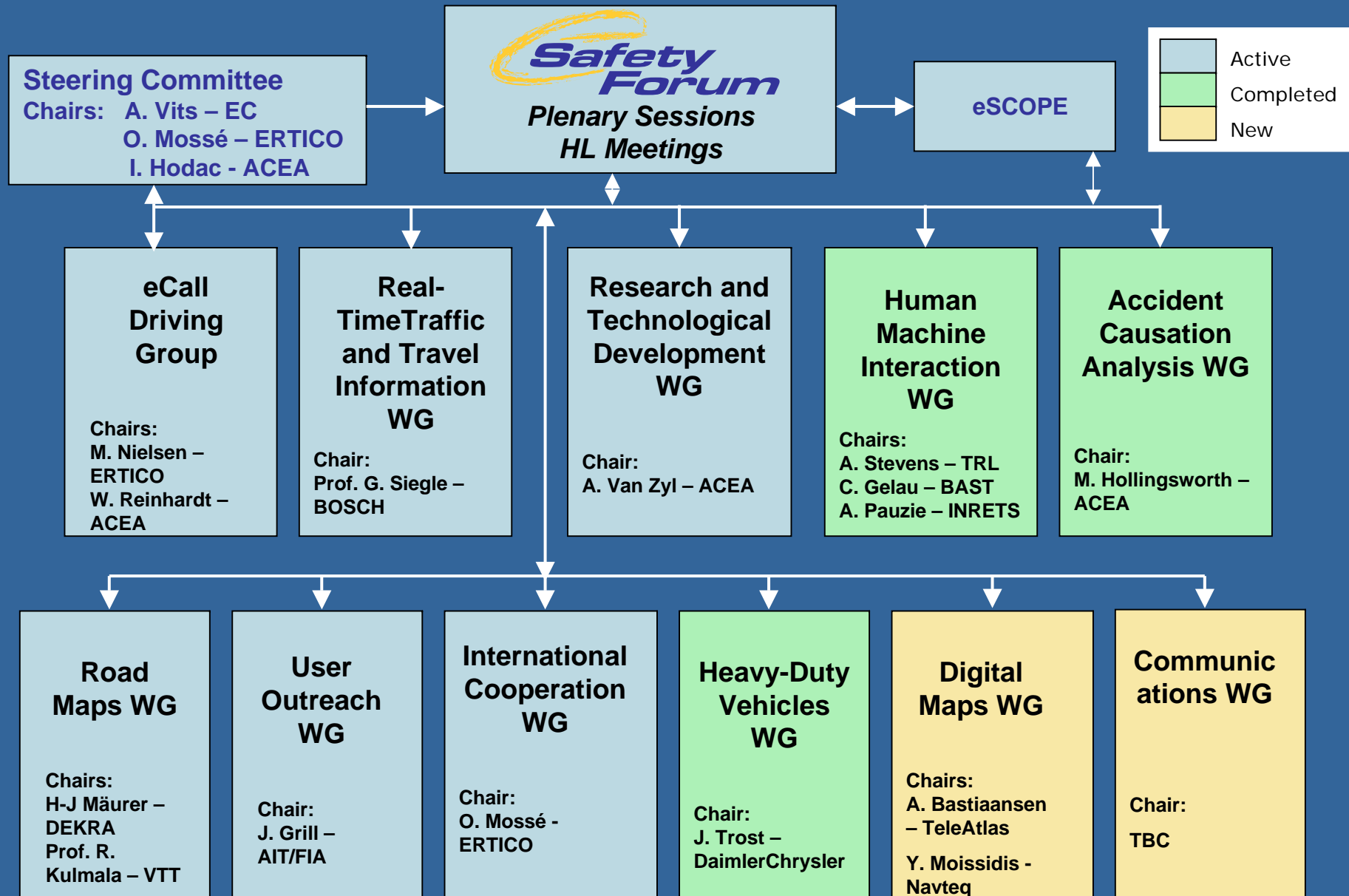
- **Forum Meetings 2005**
  - 3 February HL Meeting with Industry (Brussels)
  - *2 June (Hannover)*
 - *18 October HL Meeting with Member States (Brussels)*

The eSafety Forum (3)

Safety Forum
Plenary Sessions
HL Meetings

eSCOPE

Legend:
- Active
- Completed
- New

Steering Committee
Chairs: A. Vits – EC
            O. Mossé – ERTICO
            I. Hodac - ACEA

eCall Driving Group

Chairs:
M. Nielsen – ERTICO
W. Reinhardt – ACEA

Real-TimeTraffic and Travel Information WG

Chair:
Prof. G. Siegle – BOSCH

Research and Technological Development WG

Chair:
A. Van Zyl – ACEA

Human Machine Interaction WG

Chairs:
A. Stevens – TRL
C. Gelau – BAST
A. Pauzie – INRETS

Accident Causation Analysis WG

Chair:
M. Hollingsworth – ACEA

Road Maps WG

Chairs:
H-J Mäurer – DEKRA
Prof. R. Kulmala – VTT

User Outreach WG

Chair:
J. Grill – AIT/FIA

International Cooperation WG

Chair:
O. Mossé - ERTICO

Heavy-Duty Vehicles WG

Chair:
J. Trost – DaimlerChrysler

Digital Maps WG

Chairs:
A. Bastiaansen – TeleAtlas

Y. Moissidis - Navteq

Communications WG

Chair:
TBC

eSafety Forum organisation 2005

The Political Framework
The *e*Safety Forum (4)

The Communications Working Group

- A new WG of the eSafety Forum, being established in 2005

- Goal: To promote standardisation and availability of spectrum for V2V and V2I communications for co-operative systems in Europe

- Open to participation of all stakeholders

- Support of Car2Car consortia expected

- *Chair: To be confirmed*
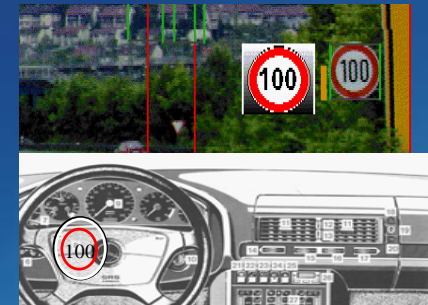
About the Spectrum Managenent in Europe (1)

- **The Radio Spectrum Decision 676/2002/EC**
  - Aim is to strengthen the creation of an internal market for equipment and services in the EU
  - Transposed to the national legislation in 2003
  - Includes measures for the Commission to co-ordinate radio spectrum for the needs of the Community policies
- **The Radio Spectrum Committee (RSC)**
  - Established by the above-mentioned decision
  - Gives assistance to the Commission in technical implementation measures
  - The Commission (chair), the MS NRAs, observers
- **Strategic High-Level bodies**
  - European Regulators Group (ERG)
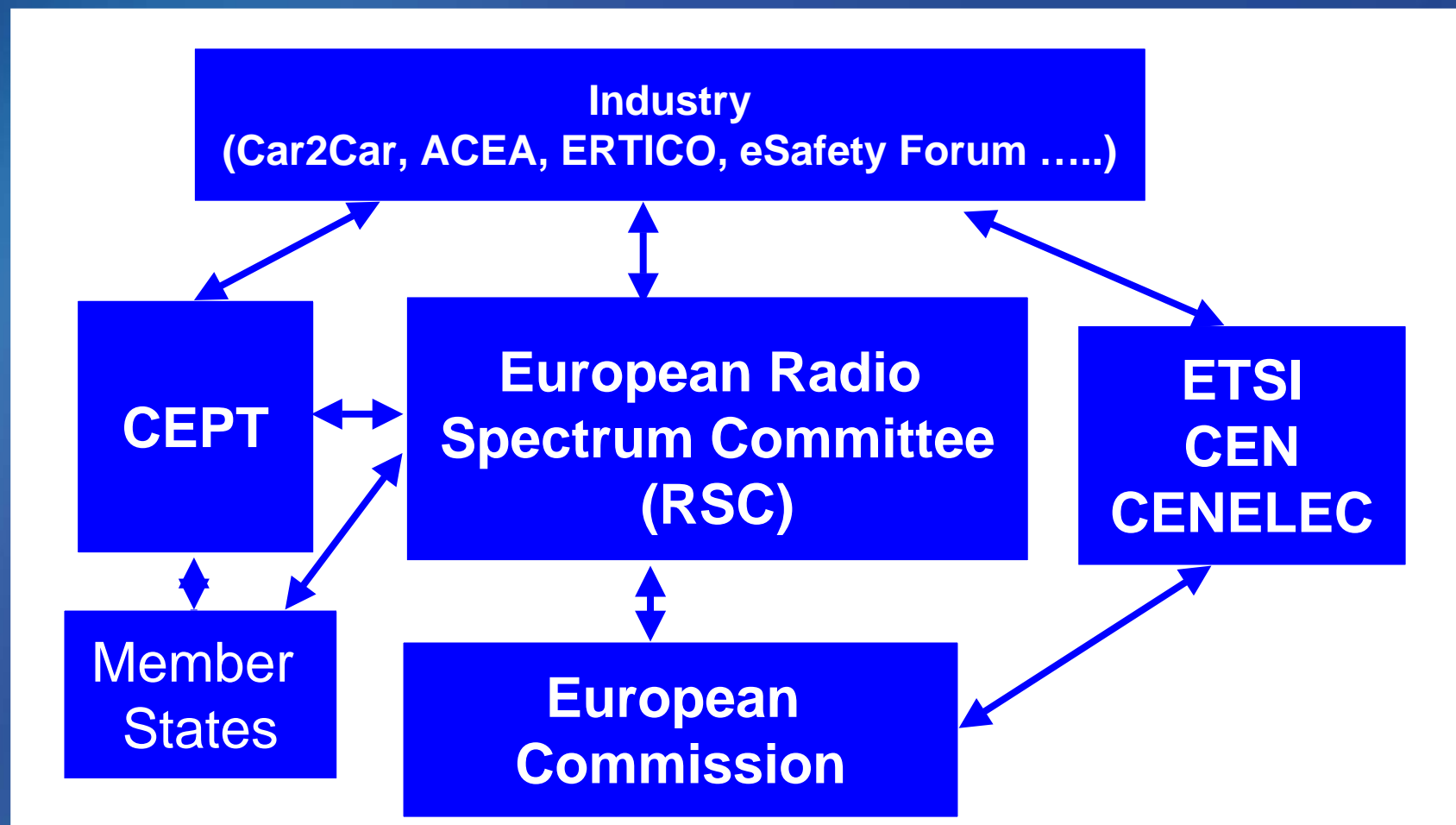 - Radio Spectrum Policy Group (RSPG)

About the Spectrum Managenent in Europe (2)

- **The European Conference of Postal and Telecommunications Administrations (CEPT)**
  - Currently 46 members, including EU-25
  - ECC – European Communications Committee
  - Commission gives mandates to CEPT
- **World Radiocommunications Conference WRC-07**
  - Every three years, updates ITU Radio Regulations
  - Commission tries to strengthen the cohesion of EU Member States positions (ECP) and acts in support of Community policies
  - RSPG is developing an opinion on WRC-07 priorities
- **Standardisation**
  - Commission supports the ESOs (ETSI, CEN, CENELEC)
  - One mechanism: Mandates

About the Spectrum Management in Europe (3)

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Industry
(Car2Car, ACEA, ERTICO, eSafety Forum …..)

CEPT

European Radio Spectrum Committee (RSC)

ETSI CEN CENELEC

Member States

European Commission

About the Spectrum Managenent in Europe (4)
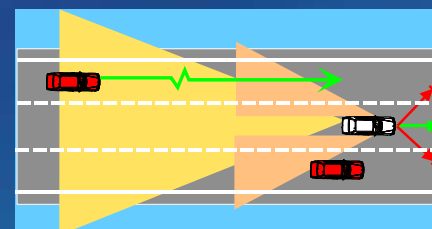
Spectrum allocation in Europe

1. **Identification of Interest for Community Policies**

2. **Commission proposal on radio spectrum allocation**

3. **MS discussion: Radio Spectrum Committee (RSC)**

4. **Commission Mandate to CEPT: Technical issues**

5. **RSC decision based on the CEPT report**

6. **Commission decision on spectrum harmonisation in EU**
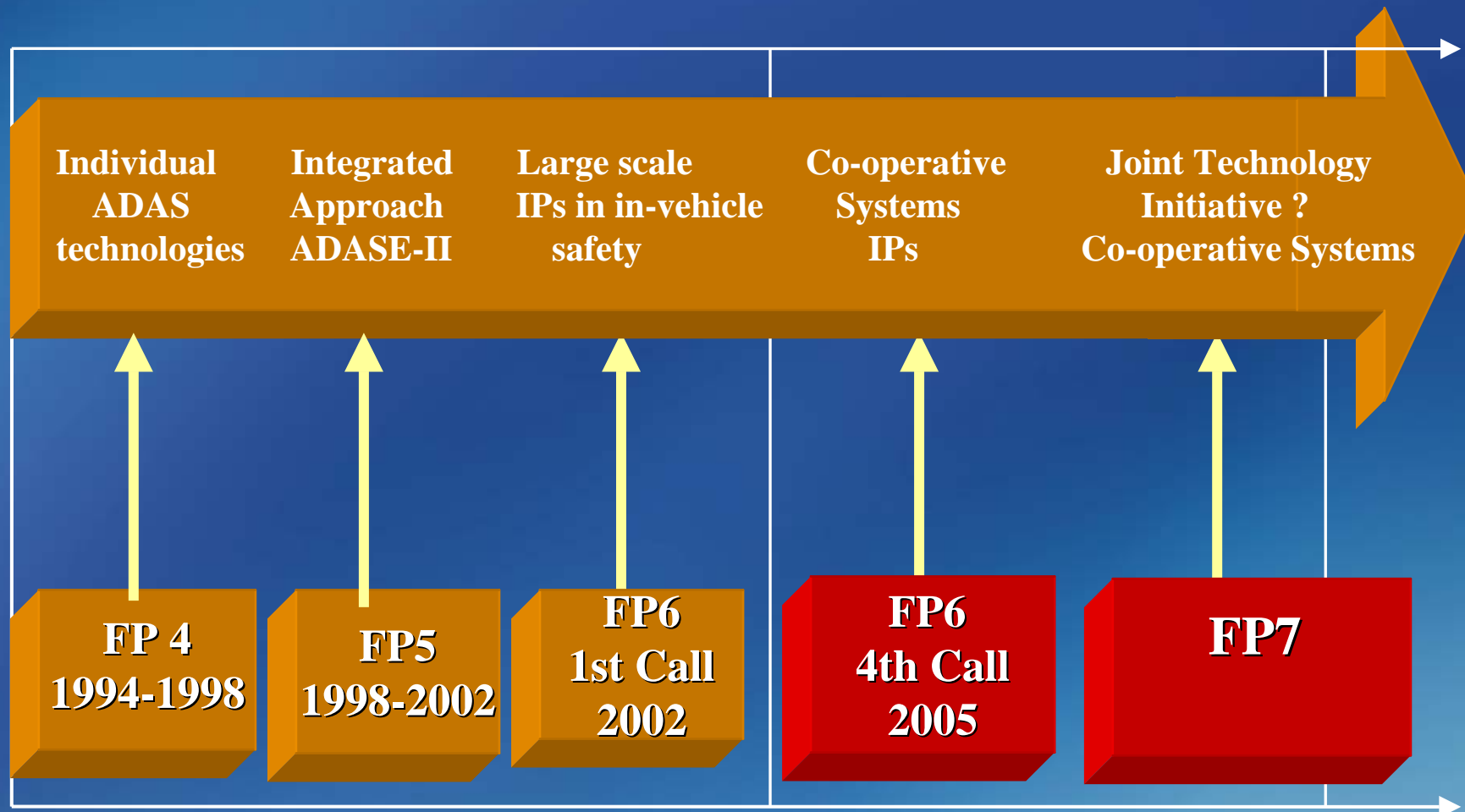
About the Spectrum Managenent in Europe (5)

The case of SRR

- **Ultra-wide band automotive radar (SRR) is considered to be a key technology for eSafety**

- **24 GHz band required before moving to the 79 GHz range**

- **79 GHz band already allocated for automotive use**

- **Commission Decision of 17 January 2005 allows the time-limited use of the 24 GHz for SRR**

Towards the Co-operative Systems - RTD (1)

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| Individual ADAS technologies | Integrated Approach ADASE-II | Large scale IPs in in-vehicle safety | Co-operative Systems IPs | Joint Technology Initiative ? Co-operative Systems |

| FP 4 1994-1998 | FP5 1998-2002 | FP6 1st Call 2002 | FP6 4th Call 2005 | FP7 |

Towards the Co-operative Systems - RTD (2)

IST Programme Call 4 – eSafety Co-operative Systems

- Builds on the ongoing Call 1 projects (PREVENT, GST, AIDE, HUMANIST..)
- **Co-operative Systems for safety and efficiency – all stakeholders**
- RTD Focus in
  - **Advanced communication concepts**
  - **Open interoperable and scalable systems architectures**
  - **Advanced sensor infrastructure**
  - **Dependable software**
  - **Robust positioning technologies**
- **Budget 82 M€, currently under evaluation !**
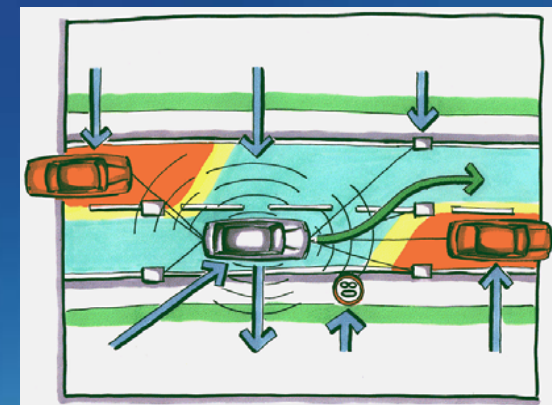
Vehicle Communications in Europe

- ## The Approach
  - Technology-neutral view: Many Communications technologies available, constant evolution
  - Define first the needs based on applications, and the system architecture (IST Call 4)

- ## Community Actions support Co-operative Systems and vehicle communications
  - i2010, CARS-21, eSafety
  - Research and Technological Development (FP6, FP7)
  - Radio Spectrum allocation

- ## Support to the industry
  - Support of standardisation by ESOs
  - Support of Car2Car 5.9 GHZ proposal, but co-existence issues have to be solved

- ## International co-operation important

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