



Radio Spectrum Policy Group, 10th meeting
Berlaymont Building, Room Robert Schuman,
Brussels, 11 May 2006

Spectrum Requirements for Road Safety

European Commission
Directorate General Information Society and Media
ICT for Transport

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Information Society
and Media



Road Fatalities in Europe ...

Main Causes and driving errors:

- ✓ **95%** of all road accidents **involve some human error**
- ✓ In **76%** of the cases the **human is solely to blame**
- ✓ **Misjudging, driving dynamics, weather (50%)**
- ✓ **Distraction (38%)**
- ✓ **39%** of Passengers vehicles and **26%** of trucks do not activate brakes before a collision
- ✓ **Some 40% more do not brake effectively**

Underlying Causes:

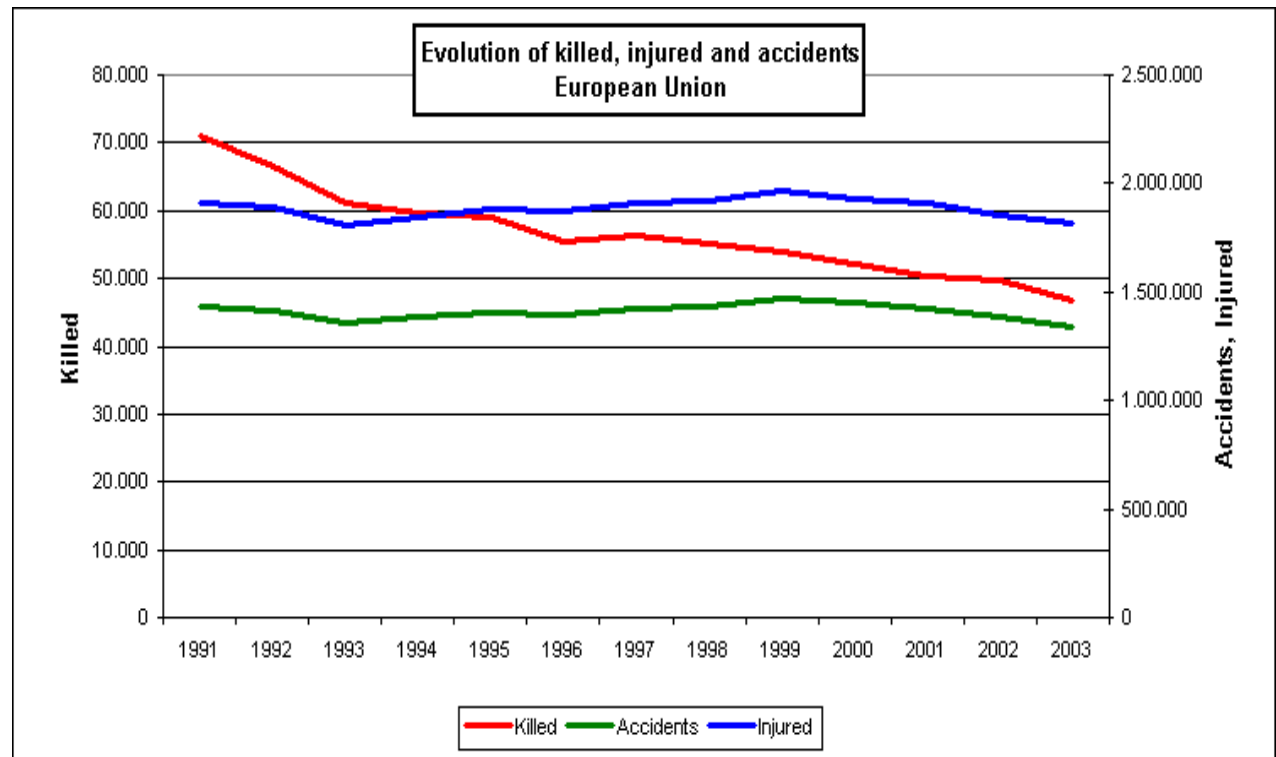
- ✓ **Alcohol**
- ✓ **Inexperience**
- ✓ **Tiredness**

Transport in EU25

Road Accidents (2005 data)

- **41.000 fatalities**
- **1.27 million accidents involving injury**
- **1.71 million injuries**

Source: DG TREN-Statistical estimations



Towards safe roads in Europe

In Sept'01 the Commission adopted a **White Paper on the European Transport Policy** which describes what should be done in the near future in the road sector.



Halving the number of road accident victims in the EU by 2010
A shared responsibility

The Commission **road safety action programme** aims at **reducing the number of fatalities by 50%, by the year 2010**

by

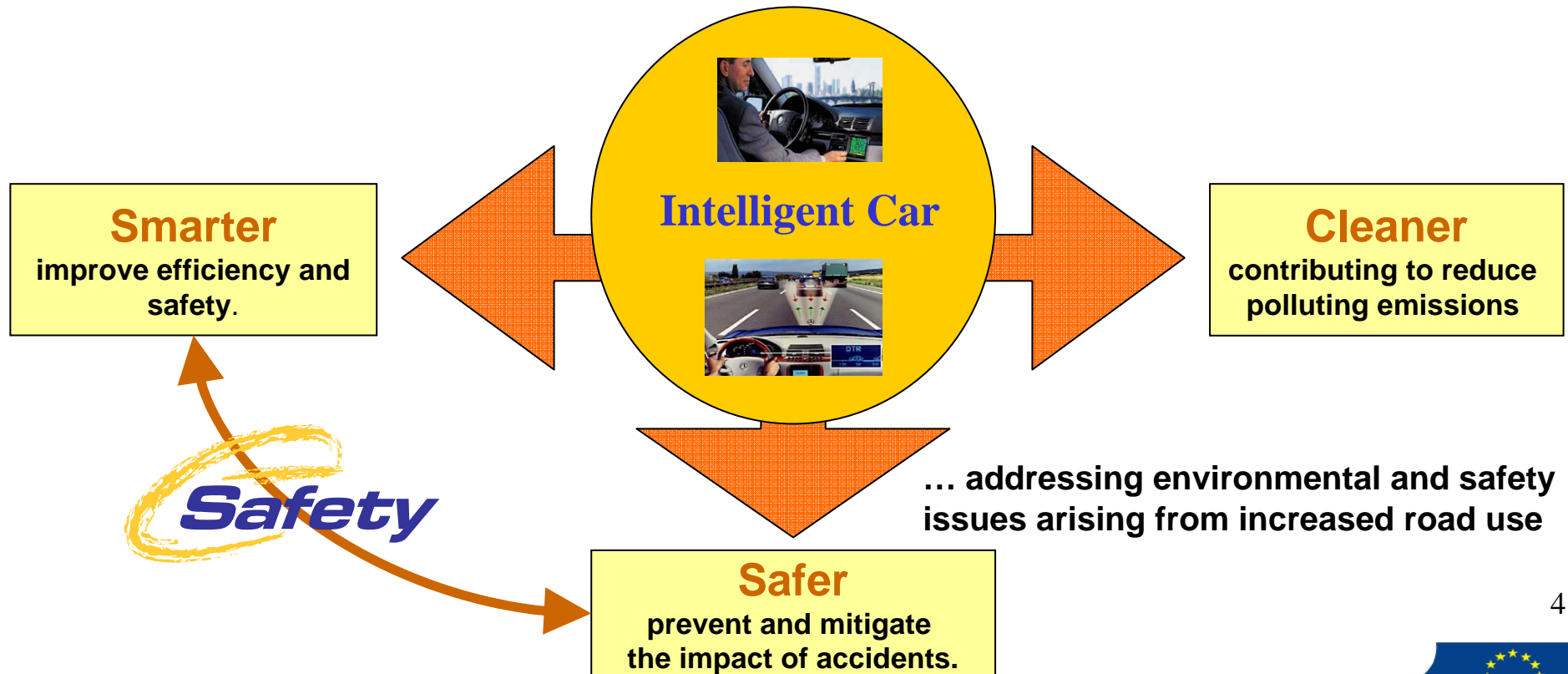
- **sharing of responsibilities** (EU, Member States, regional and local authorities, industry, transport companies and private users)
- encouraging road users to **improve their behaviour**, to **make vehicle safer**, and to **improve road infrastructure**
- launch of the **eSafety Initiative** in 2002 (leader DG INFSO)
- Launch of the **i2010 Intelligent Car Initiative**, 1 June 2005

i2010 and the Intelligent Car Initiative

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

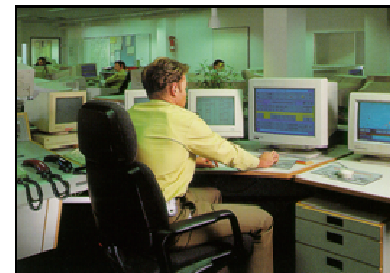
The **Intelligent Car** is one of the i2010 Flagship Initiatives.

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**.



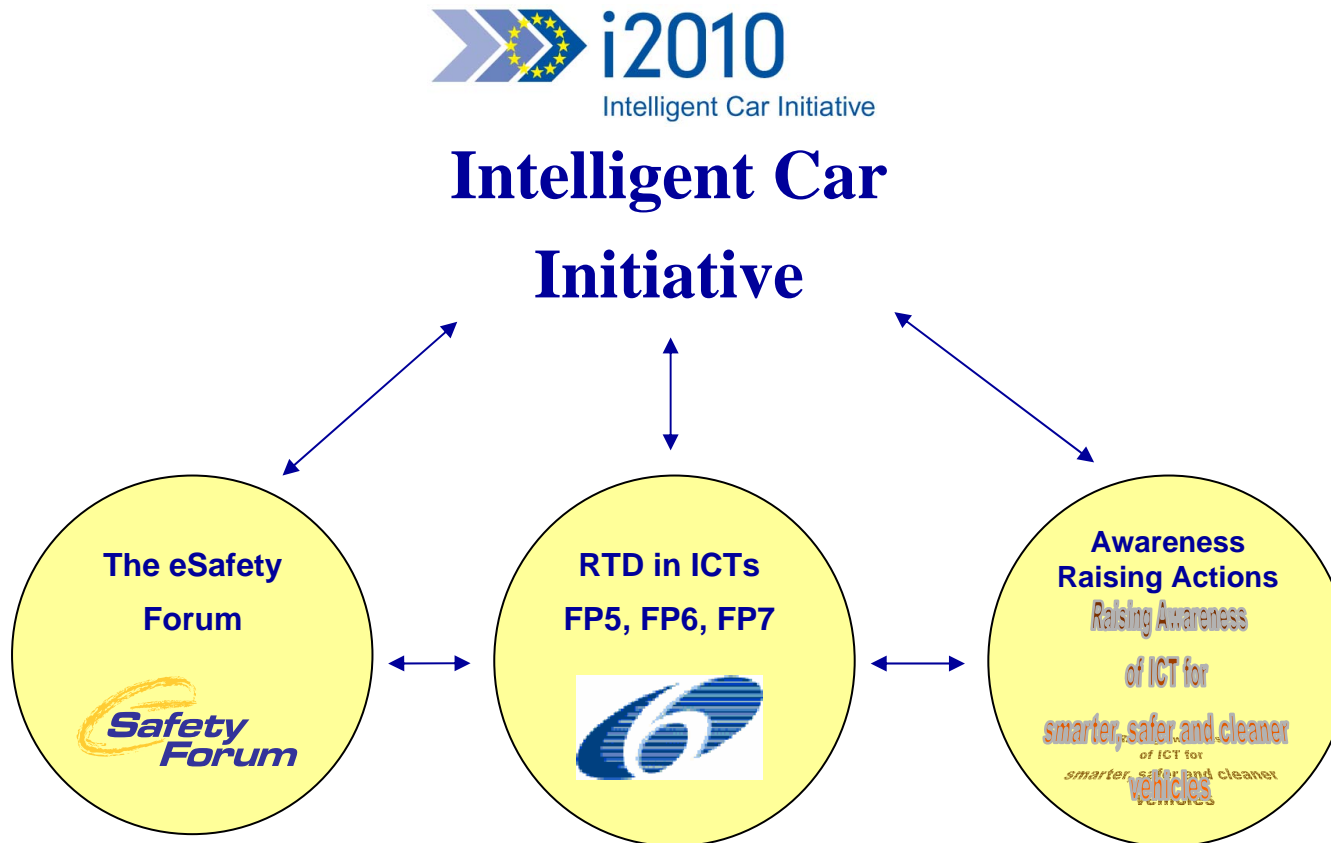
Objectives of the Intelligent Car Initiative

1. Coordinate and support the work of relevant stakeholders, citizens, Member States and the Industry
2. Support research and development in the area of smarter, cleaner and safer vehicles and facilitate the take-up and use of research results
3. Create awareness of ICT based solutions to stimulate user's demand for these systems and create socio-economic acceptance



Intelligent Car: Structure

The i2010 Intelligent Car Initiative will build on the work of the eSafety initiative and follow a three – pillar approach:



(1) The eSafety Initiative and the



(2) RTD in Information and Communications Technologies

(3) Awareness raising Actions

The **eSafety Initiative** was launched in 2002 as a **joint initiative** of the European Commission, industry and other stakeholders.

It aims at accelerating the development, deployment and use of Intelligent Integrated Safety Systems that use Information and Communication Technologies (ITC) in intelligent solutions, in order to **increase road safety and reduce the number of accidents on Europe's roads.**

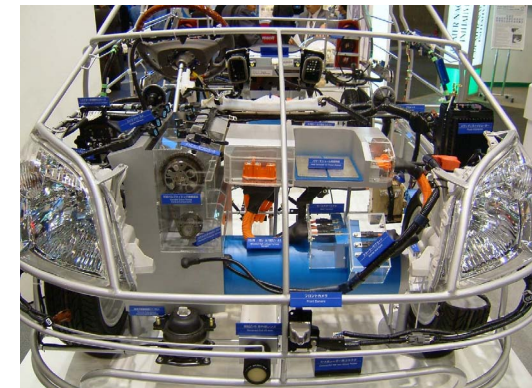
- **Forum Plenary:** Platform for consensus among stakeholders (currently over 150 members)
- **High-Level Meetings** with Industry and Member States defining strategy
- **Working Groups:** Solution-oriented, reporting to the Forum

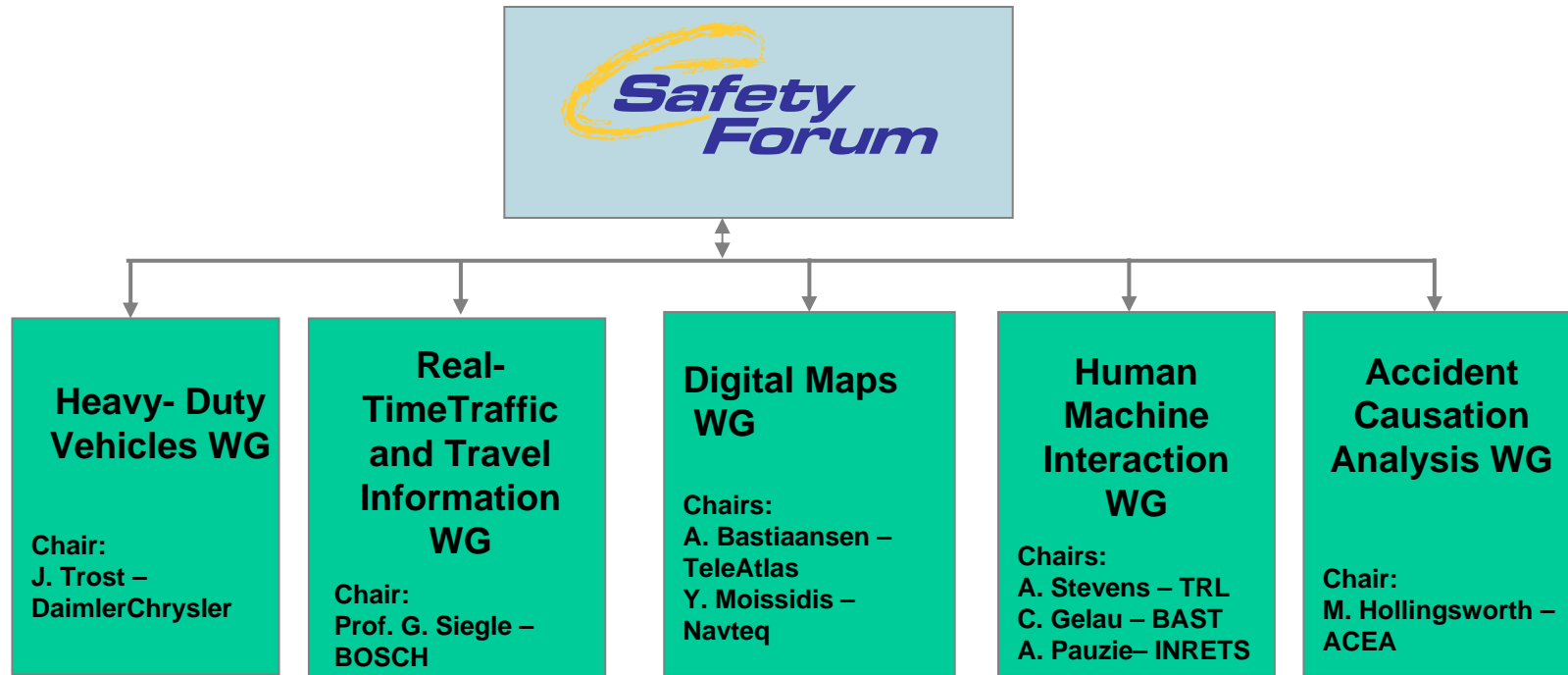
Mailbox info: INFSO-eSafety@cec.eu.int



The Focus in the eSafety Initiative will remain in Deployment:

- Pan-European Deployment of *eCall* by 2009
- Updated European Statement of Principles ESoP (HMI) – Commission adoption, May'06
- Launch of the *eSafety* Communications Platform, September'06
- Adoption of the EP Report on *eCall*, April 2006
- i2010 High Level Conference-Helsinki, September'06

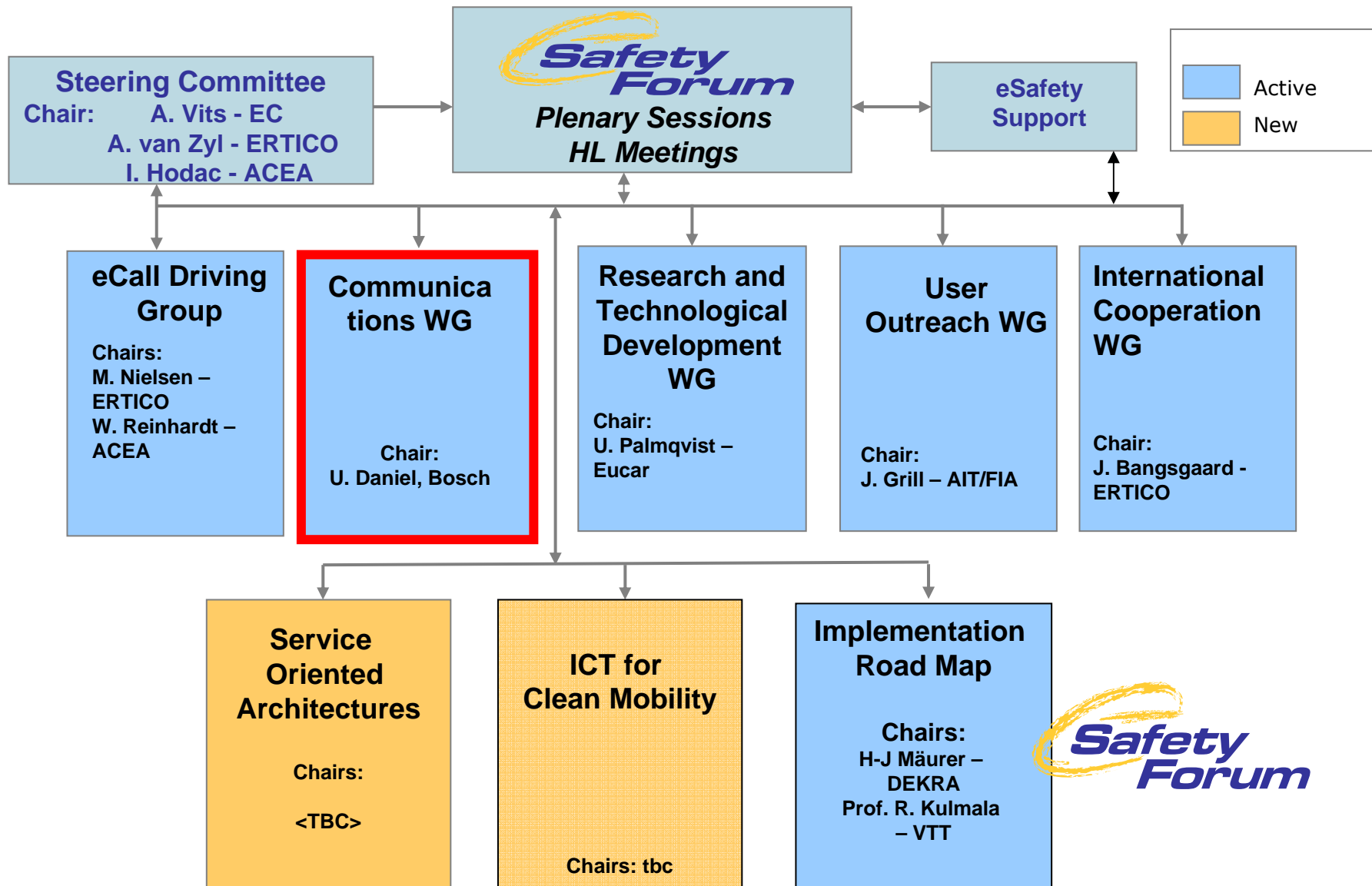




Final Reports are available at the websites



eSafety Forum: The Active WGs 2006



Communications WG (1)

- **Chair: Uwe Daniel, Bosch**
- **WG-C was established in fall 2005**
- **Terms of Reference confirmed by the eSafety Forum Steering Group on 20-Sep-05**
- **Focus on:**
 - **standardisation**
 - **spectrum requirements**
 - **international cooperation**
- **members from industry, public sector, road and infrastructure operators**



Communications WG (2)

- **WG-C works in close co-operation with COMeSafety and other EU projects (CVIS, COOPERS, GST, Safespot)**
- **two task forces address spectrum issues and standardisation**
- **international aspects will be covered by active participation in the International Workshop on Communication (following the ITS World Congress, London) and contacts to VII, ASV**

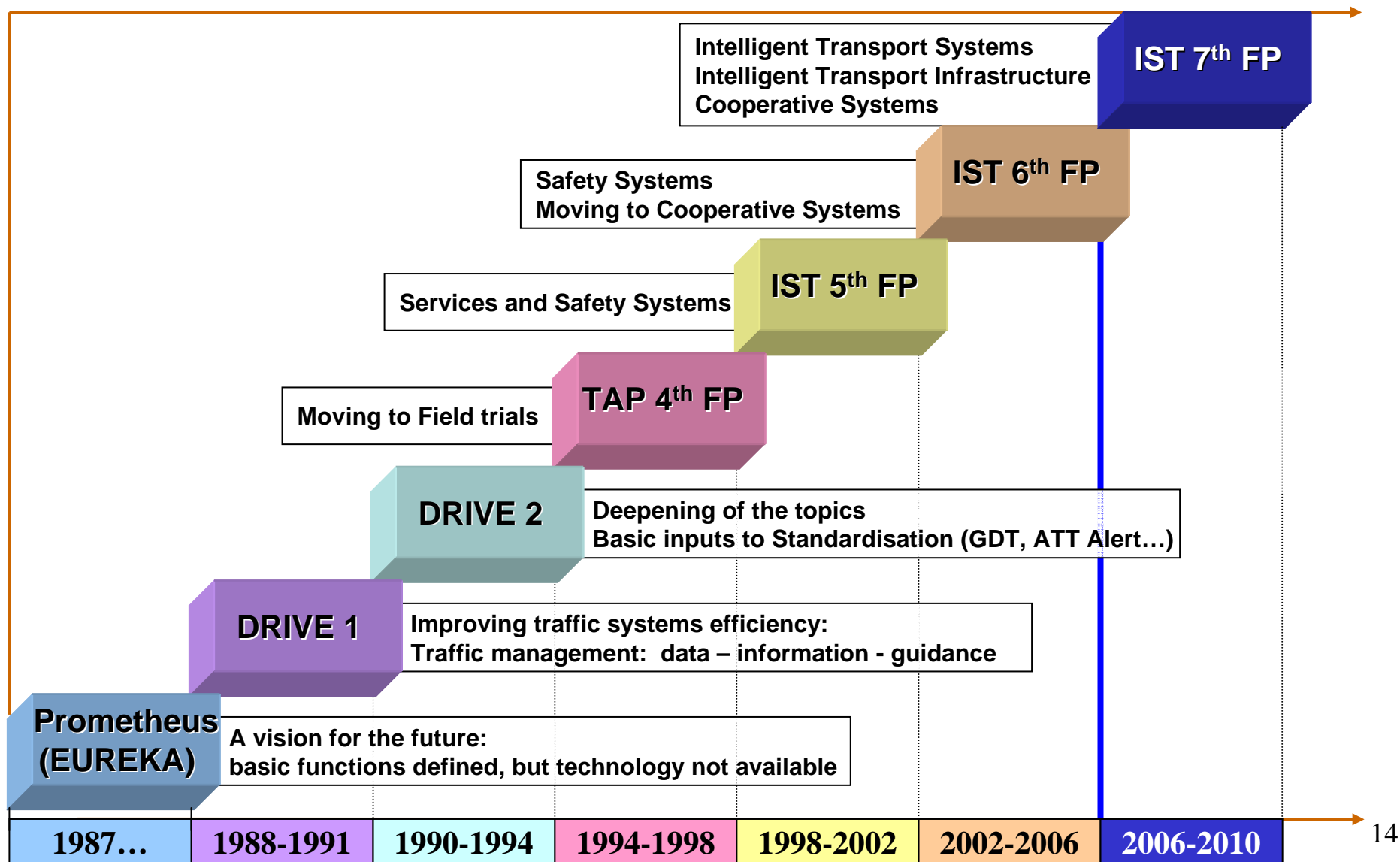


Second Pillar: The Research Programme

- The Intelligent Car Initiative activities **build upon the achievements and results of EU Framework Programmes** on research and technological development.
- The long-term objectives of the Intelligent Car Initiative will be **part of the ICT priority in FP7**
- The research priorities of the Intelligent Car fully support the **ERTRAC strategic research agenda**



Moving Towards Co-operative Systems



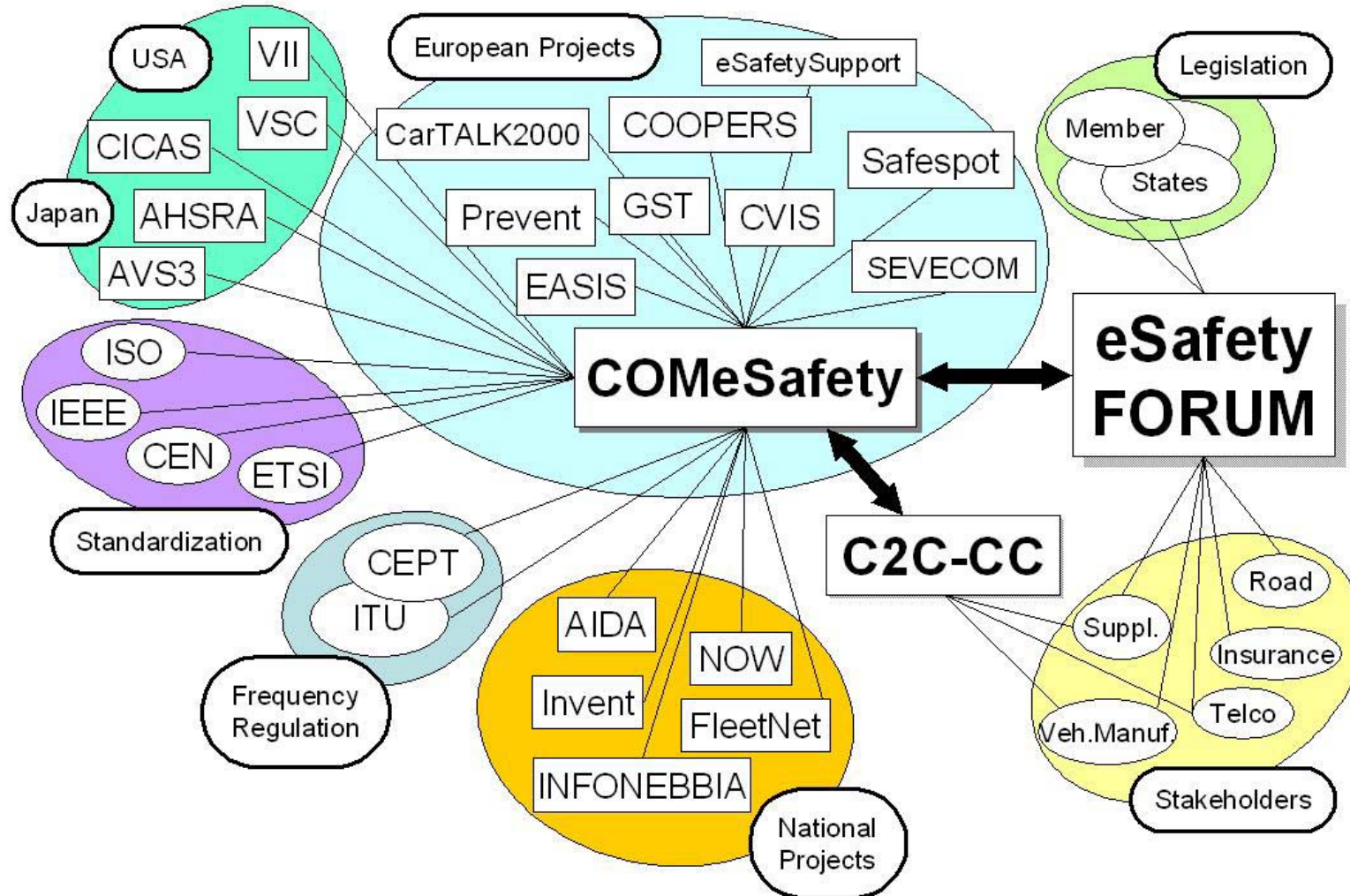


RTD Call on Cooperative Systems

		CVIS	Safespot	Coopers	ATESST	COM2REACT	Cover	Cybercars-2	eIMPACT	FedMAP	FRICITION	GoodRoute	HIGHWAY	MORRYNE	REPOSIT	SEVECOM	TRACCS	TRACKS	WATCCH-OVER	COMESafety	eSafety Support	EU-INDIA	Safety-Tec
Cooperative Systems	→ Advanced communication concepts	X	X	X		X	X	X				X	X	X	X	X				X			
	→ Open interoperable and scalable systems architectures	X	X	X	X		X					X		X									
	→ Advanced sensor infrastructure	X	X	X		X	X						X	X									
	→ Dependable software	X	X		X	X	X																
	→ Robust positioning technologies	X	X	X			X			X						X							
Integrated Safety Systems	→ Actives safety systems						X			X					X				X				
In support of the eSafety Initiative	→ Accident causation data analysis																X						
	→ Socio-economic analysis								X														
	→ Sustaining the work of the eSafety Forum																			X	X		
Other Support Actions	→ International Cooperation																			X		X	
	→ Training of professionals & users																						X
	→ Dissemination																				X		
	→ Improved participation of SMEs																						



COMeSafety



Third Pillar: Awareness Actions

The awareness pillar of the Intelligent Car Initiative will promote, active information dissemination to a wide audience:

- To raise drivers and policy maker's **knowledge about the potential of intelligent vehicle systems**
- To stimulate **user's demand** and create socio-economic acceptance
- To **facilitate the deployment** of mature technologies and systems in the initial phase of market penetration
- To encourage stakeholders initiatives supporting i2010



The SFO Workshop - Introduction

The International Workshop on Vehicle Communications

Vehicle-to-Vehicle and Vehicle-to-Infrastructure
Communications
for Safety and Efficiency

Room 120, Moscone Center, San
Francisco, Friday, 11 November 2005

Supported by

The U.S. Department of Transportation
EC DG for Information Society and Media
Japanese Ministry of Land, Infrastructure and
Transport

Organized by ITS America

Automotive, Telecommunications, and Consumer
Electronics Forum



The Format

- Panels of international experts, with all attendees being able to join the debates
- Each panel with a moderator and one participant from each region
 - **Panel 1: Communications- Enabled Applications for Safety and Efficiency: Status of Ongoing Initiatives**
 - **Panel 2: Communications Technologies and Strategies**
 - **Panel 3: Deployment, Business Case and Cost - Benefit analysis**
 - **Panel 4: Privacy and Standardisation**



Brussels,
28 Feb. 2006

Workshop on Spectrum Requirements

- ❑ 90 participants from CEPT/ETSI, RSC (regulators) and industry
- ❑ requested by RSC on 5 October 2005 meeting
- ❑ Objectives:
 - discuss **spectrum requirements** in the context of **ITS and Cooperative Systems** (especially Safety Critical Applications)
 - look at **harmonisation** and **standardisation**
- ❑ Timing, International aspects, RSC activities



WS on Spectrum Requirements - Invitees

- Radio Spectrum Committee delegations
- CEPT and ETSI experts, IST-SG Chair
- eSafety Communications Working Group
- eSafety Forum Steering Group and WG Chairs
- eSafety Forum (those who have shown interest)
- Car-to-Car Communications Consortium, SARA Group
- ACEA, ERTICO, CLEPA, ASECAP, ERF
- Representatives of R&D projects funded by the EU FP6 (CVIS, SAFESPOT, COOPERS, COMeSafety, etc...).
- EC services (DGs INFSO, ENTR, TREN, RTD)



Main Conclusions:

- **Specify in more detail how much spectrum is needed (in the 5.9 GHz band)**
- **Safety critical applications**
- **Technical work by CEPT pursuant to an EC Mandate**
- **Timing for availability**
- **International aspects**



Why Cooperative Systems?

- **most severe accidents occur because**
 - **drivers misjudge the speed of oncoming traffic leading to left turn accidents (UK: right turn)**
 - **drivers misjudge situations at intersections or don't yield right of way, leading to side crashes**
 - **crossing traffic can only be noticed late due to buildings/obstacles**
- **and could be avoided by vehicle to vehicle communication or infrastructure based systems**



Why Cooperative Systems? (2)

Cooperative Systems using V2X communications

- **Improve road safety**
 - improve traffic safety for all road users (pedestrian protection, safe intersections,...)
 - better and more efficient response to hazards, incidents and accidents
- **increase road capacity and reduces congestion**
 - save fuel
 - save time
 - reduce emissions
 - increase revenue of road operators
 - reduce maintenance costs of road infrastructure



Why Cooperative Systems in the EU?

- **US and Japan are already more advanced with standards and have protected spectrum allocated**
- **European Industry will have severe disadvantages if no home market exists**

Therefore:

- **European based electronics and car industries, telco and service companies should be able to compete in a new worldwide market**



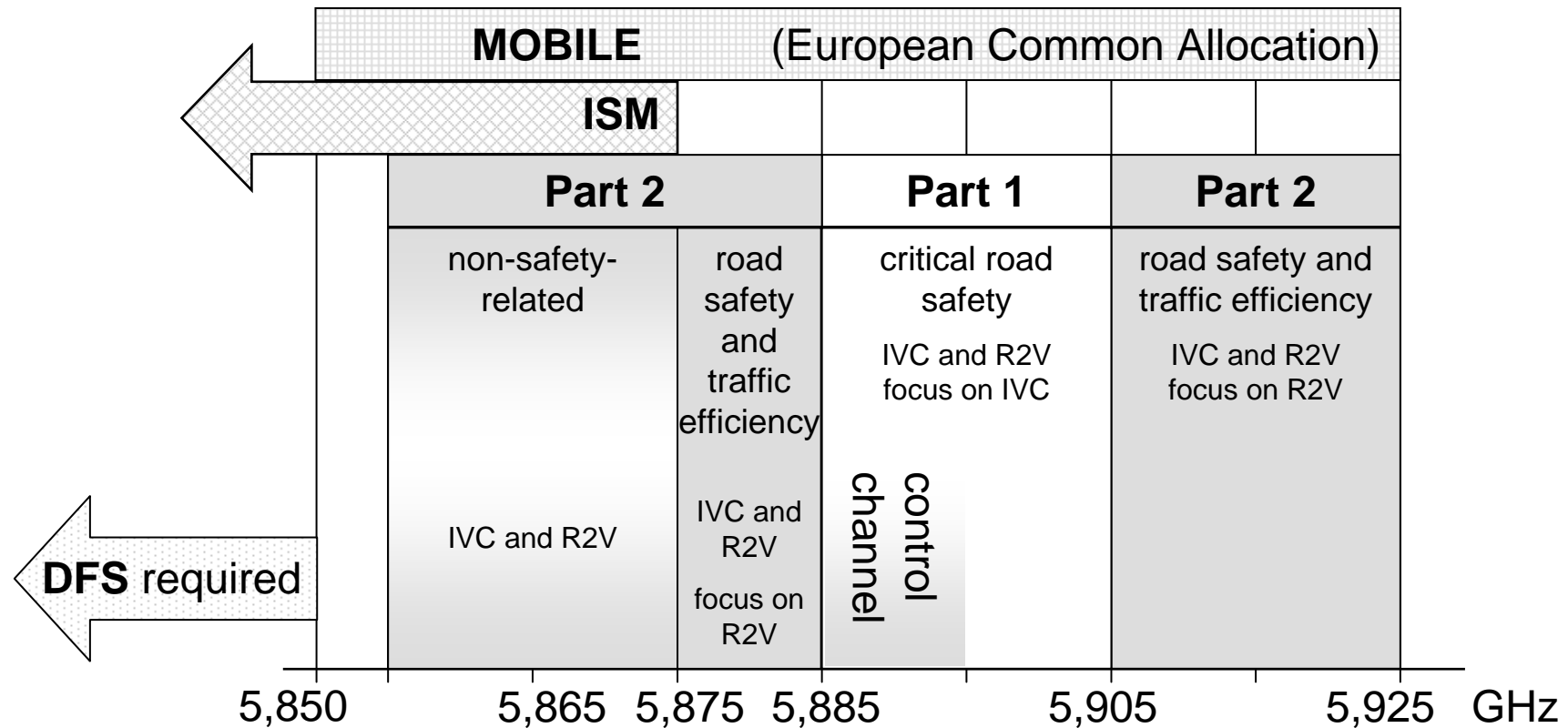
Conditions to be met

- **Standardisation**
 - all components must have an exactly defined behavior to guarantee safety functions
- **Spectrum Requirements**
 - maximum delay times, QoS needed, free of charge
- **Business Case**
 - Threshold problem, dissemination
- **International Harmonisation**
 - economies of scale, international trade

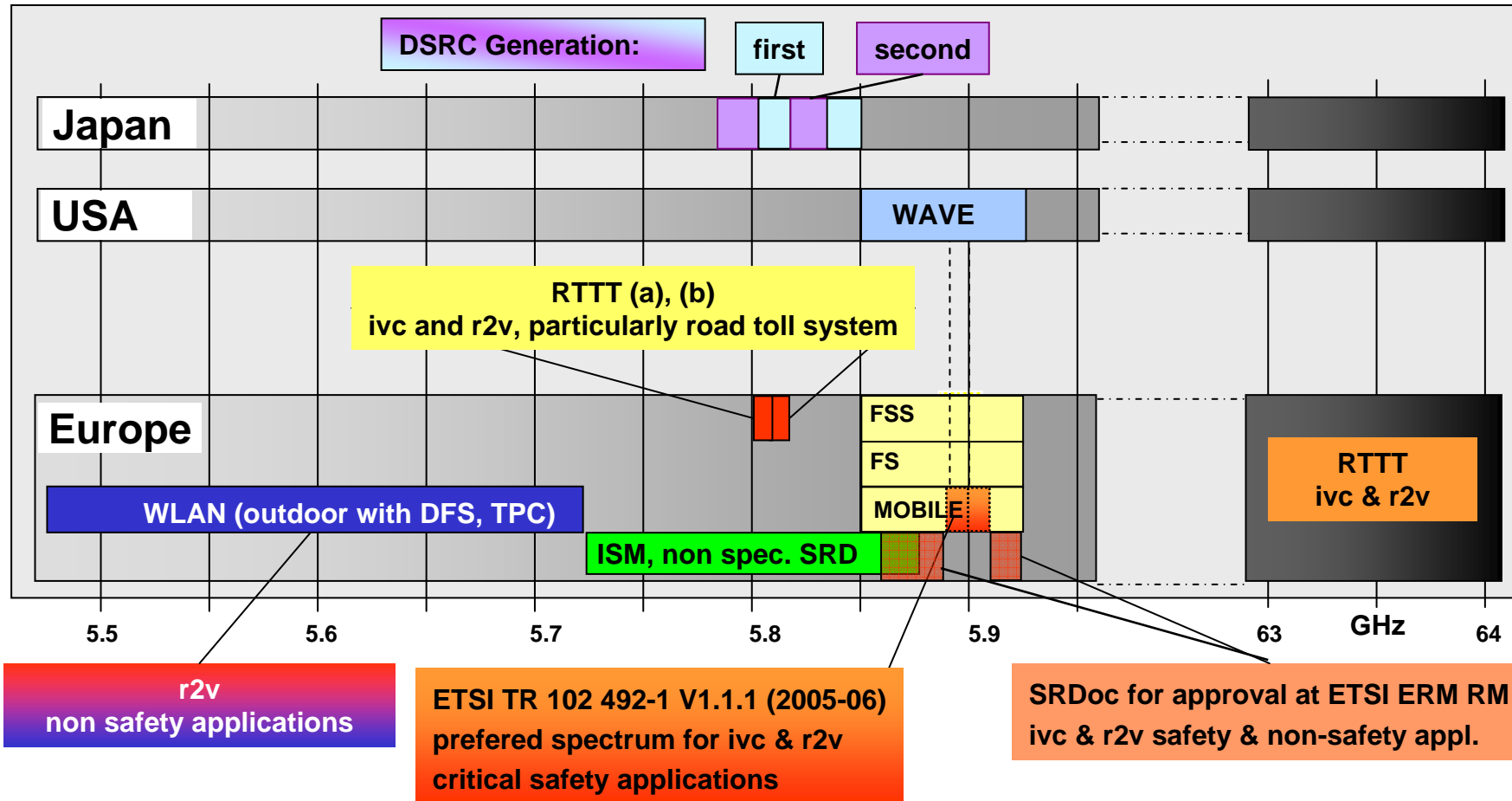


SRDoc Part 1 & 2

Preferred Spectrum



ITS Spectrum



Cooperative Systems - Conclusions

To strengthen the European position in a worldwide competitive market we need:

- a common set of **standards**
- **“protected” spectrum** (ideally with a worldwide, exclusive slot for safety critical applications with low bandwidth)
- a common European market with one **deployment strategy** to overcome the threshold problem





The eSafety Initiative in 2006

	Event	Date	Where	Remarks
1	i2010 Intelligent Car Initiative launch event	23 February 2006	Brussels	With the presence of Commissioner, with demonstrations - i2010 Event
2	Workshop on spectrum issues	28 February 2006	Brussels	Workshop with Radio Spectrum Committee, CEPT, ETSI
3	eSafety Forum Plenary Meeting	2-3 May 2006	Brussels	Stocktaking, Focus on User Outreach and the Communications Platform, with the support of the Austrian Presidency, 1 and ½ days
4	Transport Research Arena 2006	12-15 June, 2006	Gothenburg	Organized by DG RTD and ERTRAC, DG INFSO Sessions and Exhibition
5	ITS World Congress and Communications WS	8-12 October 2006 13 October 2006	London	Congress, Exhibition, Showcase, Workshop, presence of the Commissioner
6	FISITA 2006	22-27 October 2006	Yokohama	Sessions on eSafety
7	i2010 High-Level Workshop	27-28 September 2006	Helsinki	High-Level i2010 event, with Commissioner and ministers – Session on Intelligent Car
8	eSafety Forum Plenary Meeting	8 November 2006	Brussels	Focus on Incentives, Cost-benefit and Communications, Spectrum





***Thank you
for your attention***

