



eSafety - Deployment in Europe 2007

Findungs of a small study on the current status

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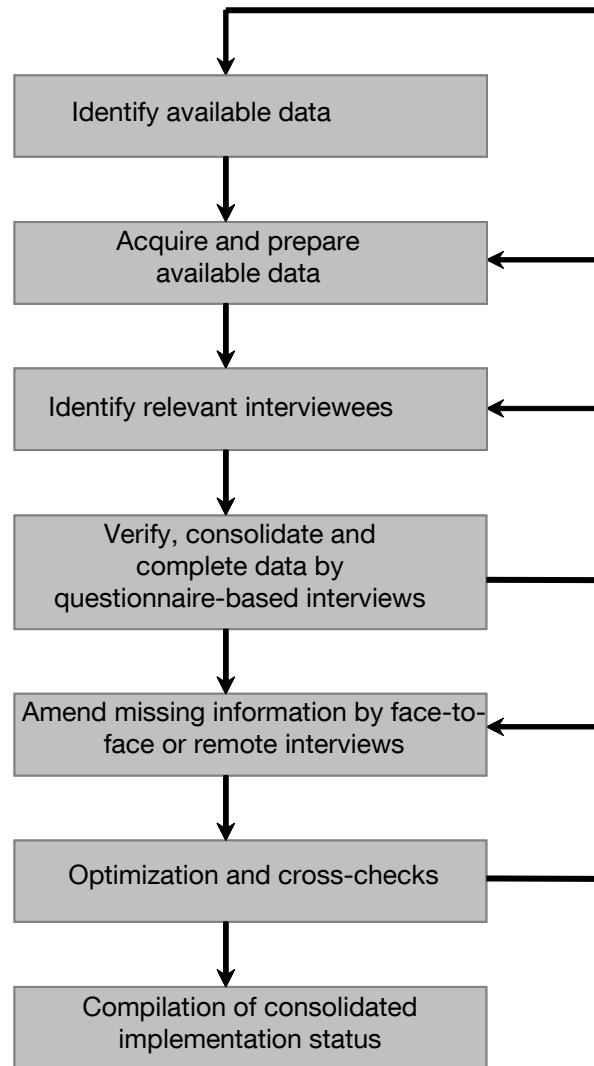
Brussels, 14.11.2007

Objective of the study

The study mainly aimed at identifying

- changes in **market penetration** in the years 2005 to 2007
- coverage of the 11 priority eSafety systems for each **country**
- assessment of the market penetration in the year **2015**
- most successful and promising **strategies** for market penetration

Approach



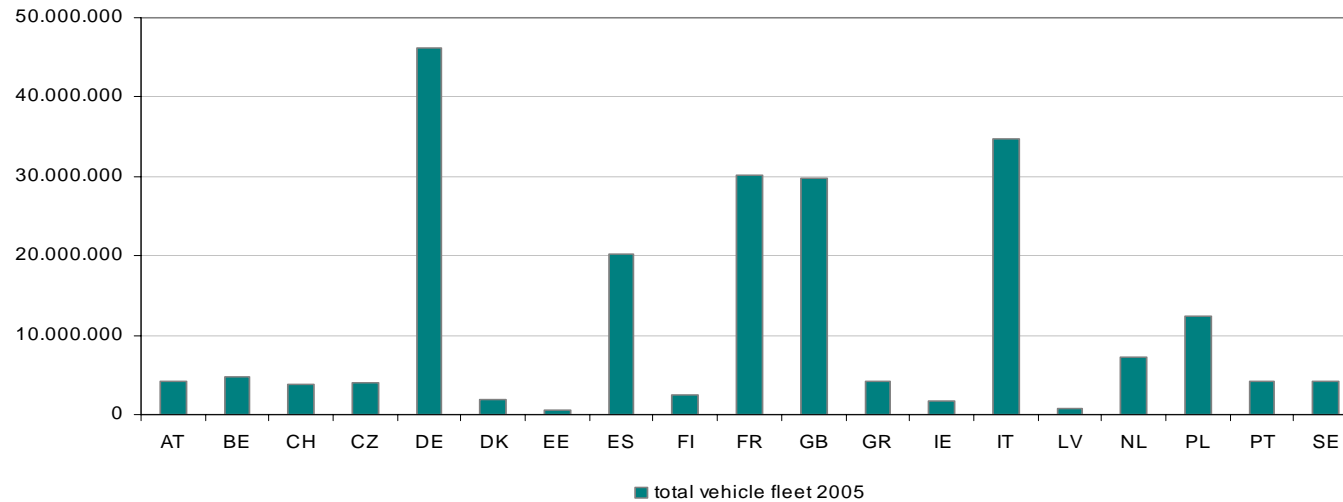
Interview partners from:

- Governmental Departments
- Road Operators
- Statistical Offices
- Research Institutions
- Automobile Industry
- Original Equipment Manufacturer
- ITS industry
- Related research projects
- National eSafety Observers

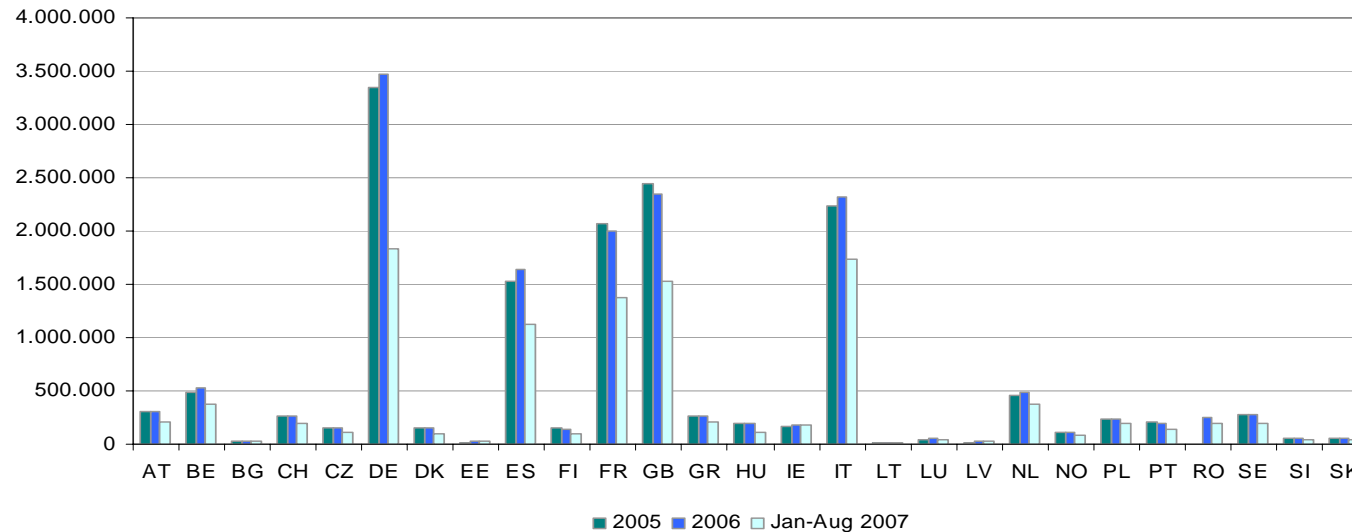
General remarks:

- about 230 personal interviews/questionnaires
- overall a relatively poor return rate (< 30%)
- very weak support from the car industry
- good support from OEM, government, research
- complete return for 8 different countries: AT, BE, CH, DE, EE, GR, HU, IT

Basic information about vehicle fleet in Europe



Total vehicle fleet
2005



Source: ACEA



Market introduction of vehicle-based systems

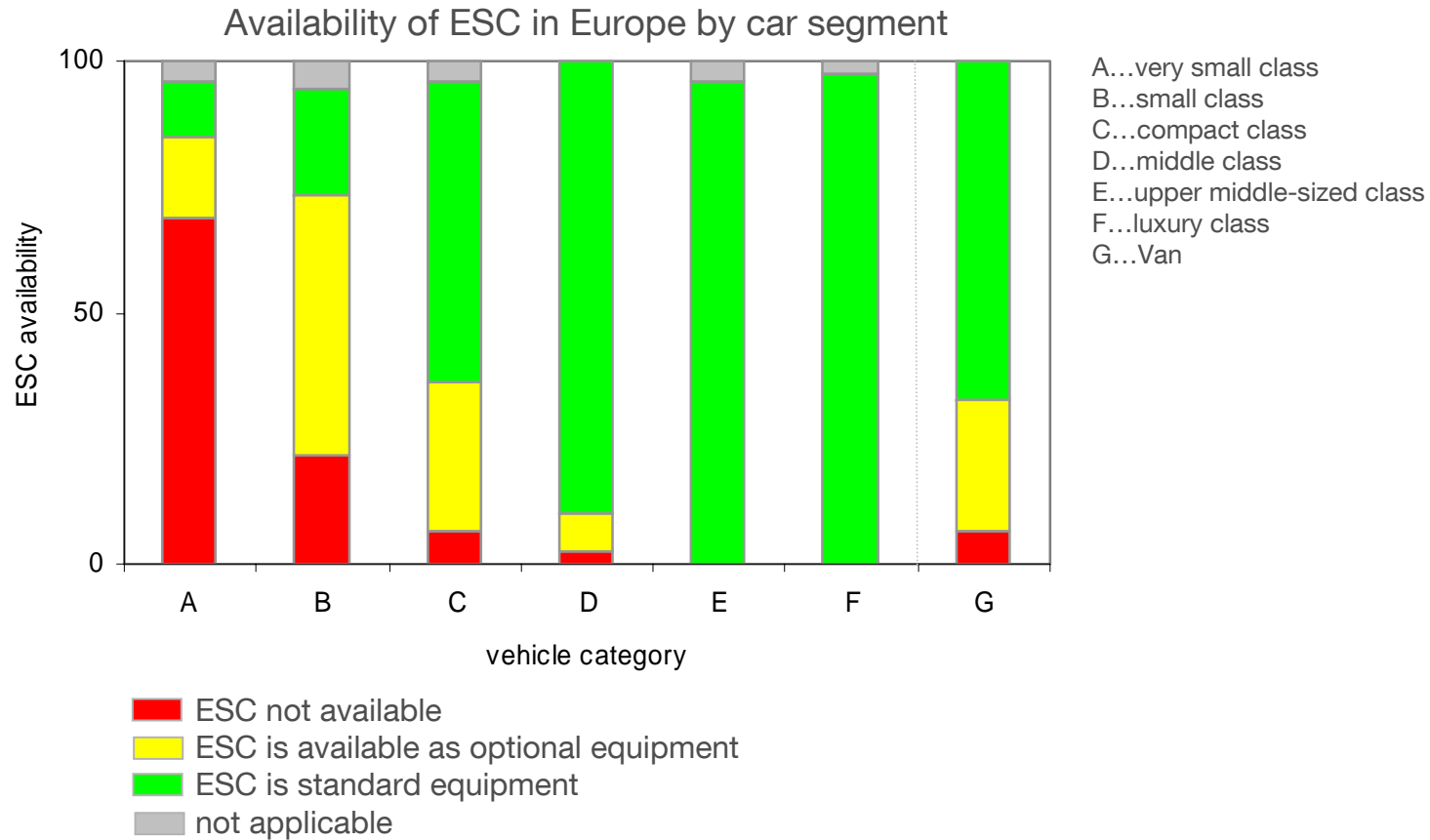
	ESC	Adaptive head light	Blind spot monitoring	Obstacle & collision warning	Lane departure warning
Market introduction	1995	2003	2005	1999 / 2007	2005
Audi	Green	Yellow	Yellow	Yellow	Yellow
BMW	Green	Yellow	Yellow	Yellow	Yellow
Citroen	Yellow	Green	Red	Red	Yellow
Mercedes	Green	Yellow	Yellow	Yellow	Red
Fiat	Red	Yellow	Green	Yellow	Red
Ford	Red	Yellow	Green	Yellow	Red
Opel	Red	Yellow	Green	Yellow	Red
Peugeot	Red	Yellow	Green	Yellow	Red
Renault	Red	Yellow	Green	Yellow	Red
Saab	Green	Yellow	Yellow	Yellow	Red
Seat	Red	Yellow	Green	Yellow	Red
Skoda	Red	Yellow	Green	Yellow	Red
Volvo	Green	Yellow	Yellow	Yellow	Red
VW	Yellow	Green	Yellow	Yellow	Red

only in luxury car segment!

Status: 2007

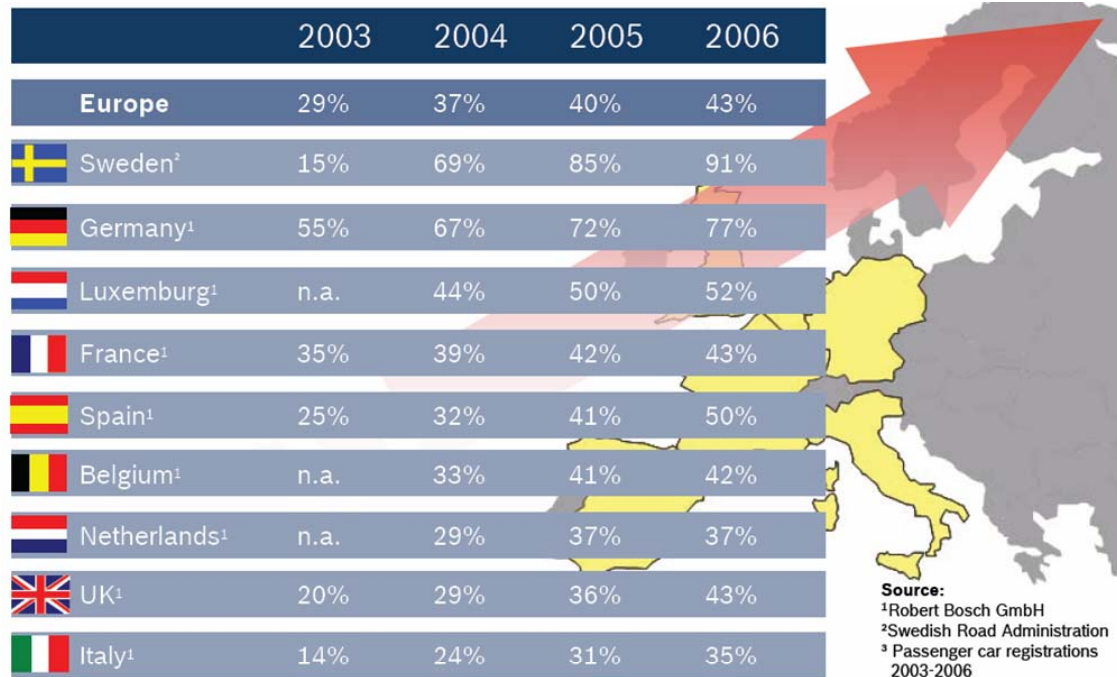
- available as standard equipment
- available as optional equipment
- not available

ESC - Availability by car segment



Based on EuroNCAP, status: 2007

ESC - Installation rate by new car registration



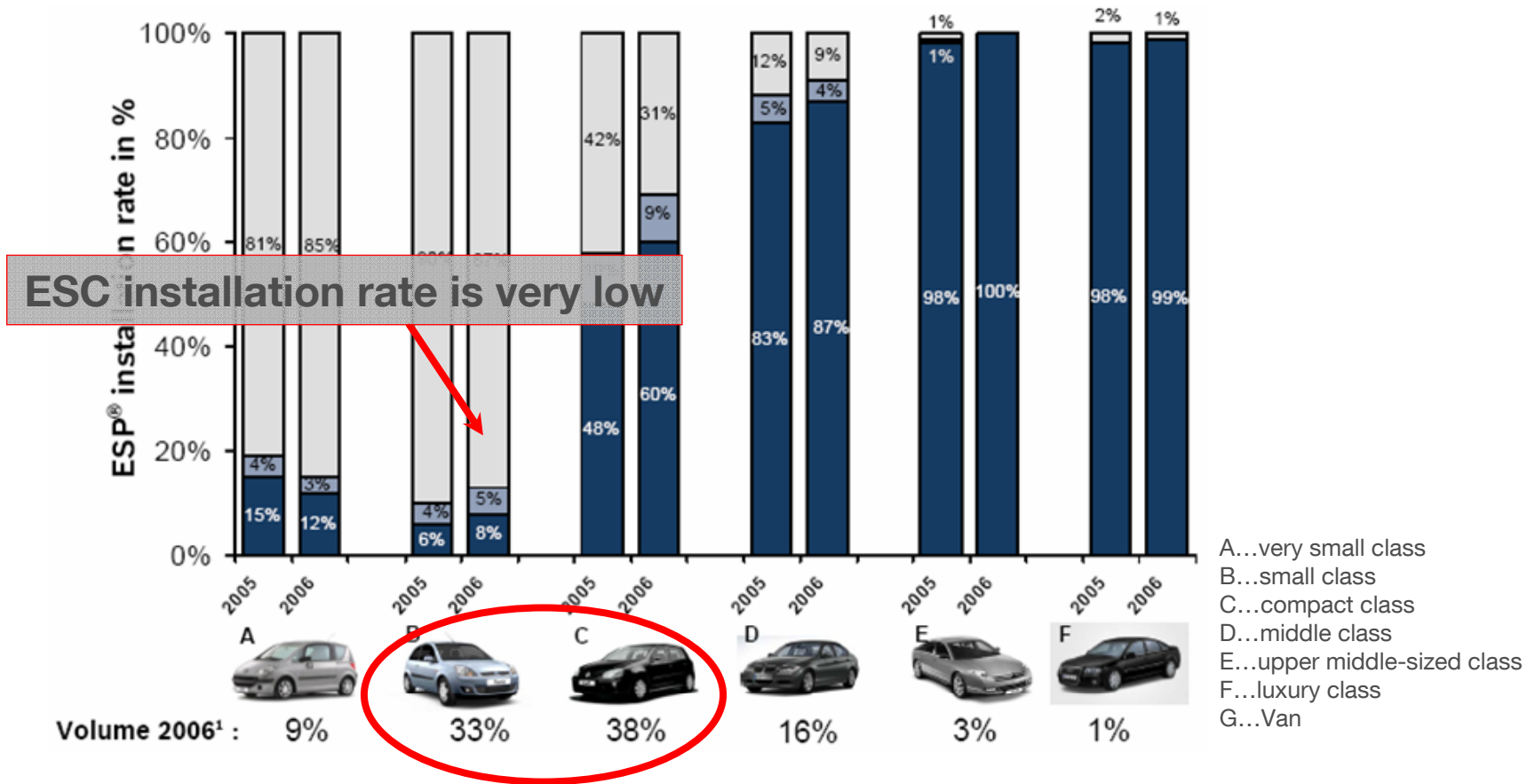
Source: Bosch

ESC	2005	2006	Jan-Aug. 2007
Austria**	min. 37%	min. 35%	min. 34%
Switzerland*	min. 22%	min. 61%	min. 54%
Greece*	min. 45%	min. 43%	min. 39%

* All vehicles with ESC as standard equipment were include. Vehicles without ESC as standard equipment not included in the shares.

** Only vehicles of labels with completely equipped fleets were Included.

ESC - Installation rate by car segment



Source: Bosch



ESC - Conclusion

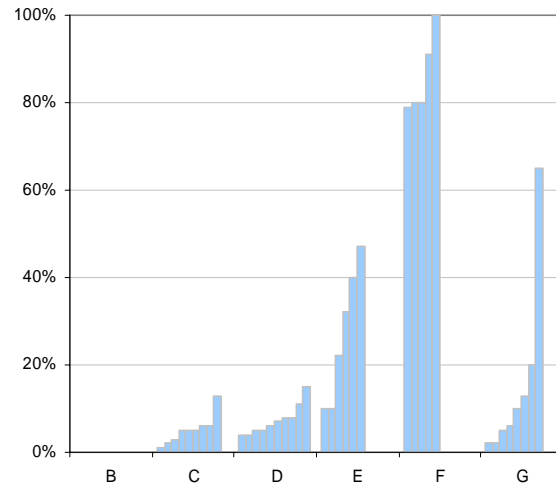
- ESC is faster establishing than ABS did
- Population is more interested in *eSafety systems* than in the past
- New technologies become standard equipment faster than before
- Existence of basic technology and necessary sensor

potential to further increase the ESC-penetration:

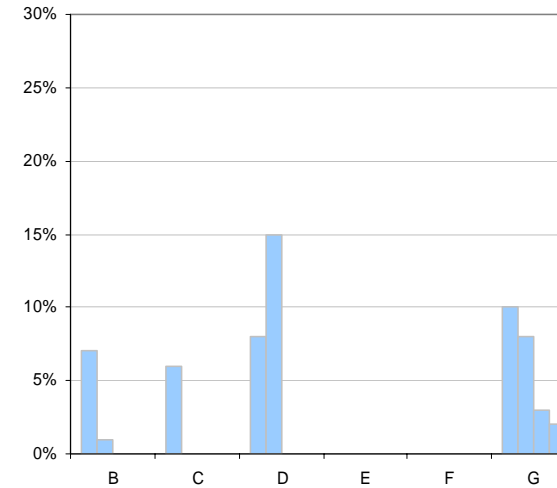
vehicle manufacturers promote ESC as standard equipment in car segment B (small car) and C (compact car)

Adaptive head lights - Availability

Adaptive head lights with Xenon-lights



Adaptive head lights with Halogen-lights



2.640.000 of vehicles produced in 2007
by European manufacturers
are equipped with adaptive head lights

B...small class
C...compact class
D...middle class
E...upper middle-sized class
F...luxury class
G...Van

Source: Hella, Status: 2007

Adaptive head lights – Conclusion

- not offered in all vehicle segments
- not offered as standard equipment
- Forecast: equipment rate increases
 - more car models offer Adaptive Head Lights

potential to increase the Adaptive Head Lights penetration:

vehicle manufacturers promote Adaptive Head Lights as optional or standard equipment in more car segments

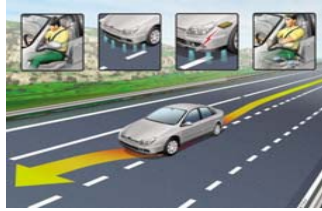
Radar and sensor based systems

Blind spot monitoring



Picture: Volvo

Lane departure warning



Picture: Citroen

Obstacle and collision warning



Picture: Mercedes

< 1% of all new vehicle registrations
in 2007 are equipped

Reasons:

- market introduction since 2005 or 2007
- Availability: only in some luxury class vehicles

Source: different OEM, Status: 2007

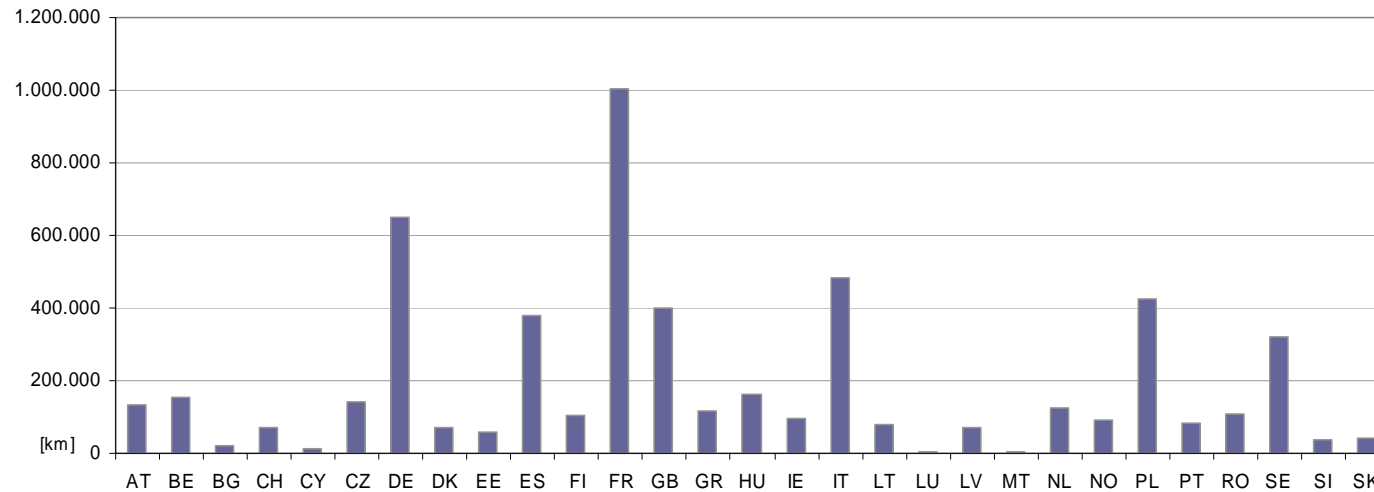
Radar and sensor based systems - Conclusion

- temporary comfort equipment → change to safety equipment
- positive approach towards safety systems by citizens
- Forecast: price for radar and lidar systems will decrease
→ more new cars will be equipped

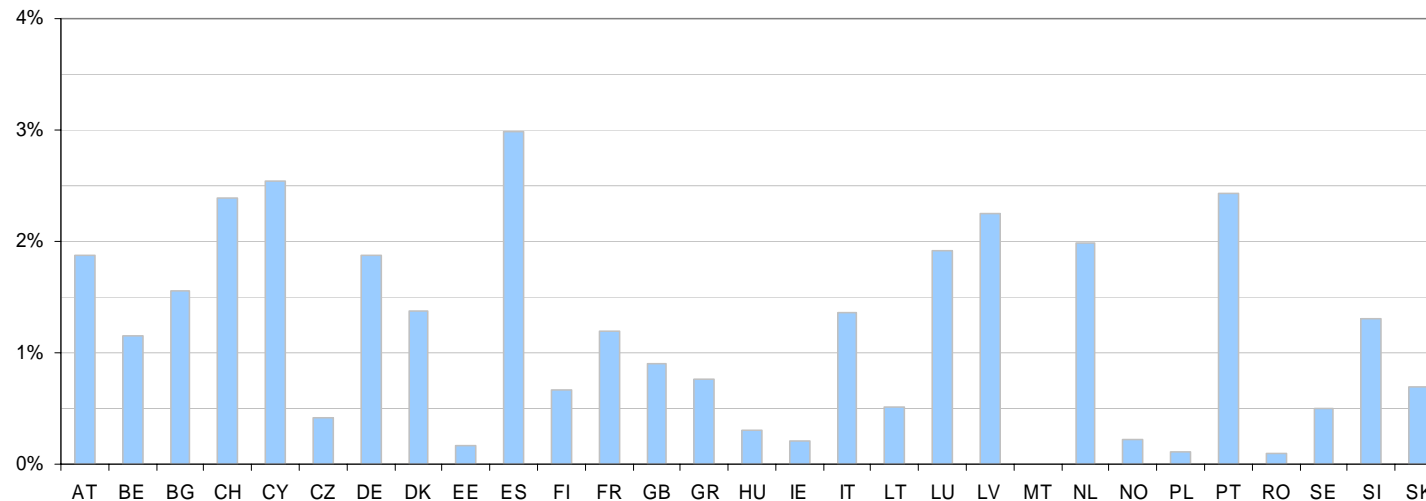
potential to increase the market penetration:

More cars from different segments get equipped

Basic information about road network in Europe



Total road network 2004 [km]



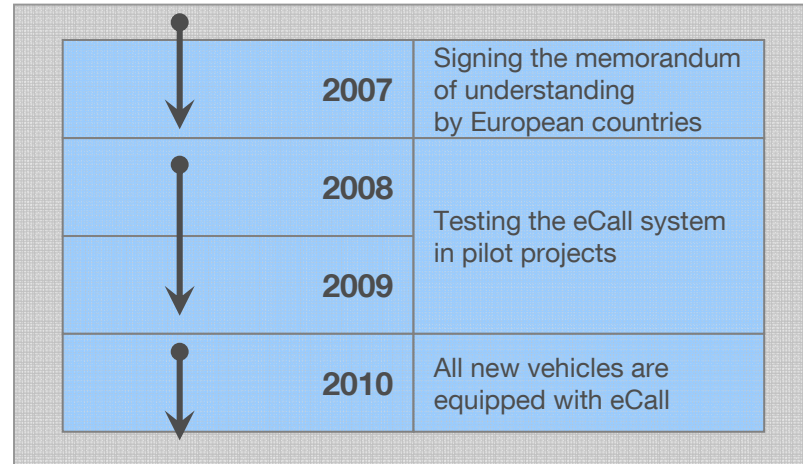
Percentage of motorway 2004

Source: erf

percentage of motorway

Emergency Call (eCall)

The following countries signed the Memorandum of Understanding:



Assumptions for eCall:

- *infrastructure*: uniform emergency number 112
- *vehicle*: standard equipment with sensor

Currently a similar system is already offered by some vehicle manufacturers:

e.g. Audi, BMW, Fiat, Mercedes-Benz, PSA Peugeot Citroen, Renault, Volvo.

eCall – Status of signatures of MoU

e Call Memorandum of Understanding Status of signatures

	EU Member State	Address	Name	Position/Title	Date of signature
1	Ministry of Interior - General Directorate of Fire Rescue Service	Kloknerova 26, pošt. příhr. 69, post code CZ - 148 01 Praha 414	Maj-Gen Miroslav ŠTĚPÁN	Director General	18/09/2007
2	Federal Ministry of Transport, Building and Urban Affairs, Germany	Invalidenstrasse 44, DE-10115 Berlin	Mr Wolfgang TIEFENSEE	Federal Minister	5/06/2007
3	Gobierno de España – Ministerio del Interior – Dirección General de Protección Civil y Emergencias	Calle Quintiliano nº 21, ES – 28002 Madrid	Mr Francisco Javier VELÁZQUEZ LÓPEZ	Director General	18/09/2007
4	Ministry of Transport and Communications Greece	2, Anastaseos Street GR-10191 Cholargos, Attiki	Mr Anastasios NERANTZIS	Deputy Minister	18/10/2005
5	Ministry of Innovation and Technologies, Italy	Via Isonzo, 21b, IT - 00198 Roma	Mr Settimio VINTI	Director	18/10/2005
6	Ministry of Communications and Works, Cyprus	28 Achaeon Street, CY-1424 Nicosia	Mr Harris THRASSOU	Minister	8/12/2005
7	Ministry of Interior - Lithuanian Emergency Response Centre	Svitrigailos str. 18, LT-03223 Vilnius	Mr Arturas KEDAVICIUS	Director	18/10/2005
8	Ministry of Interior & Kingdom Relations	Postbus 20011, NL-2500 EA Den Haag	Mrs Guusje TER HORST	Minister	8/11/2007
9	Federal Ministry of Transport, Innovation and Technology, Austria	Radetzkystrasse 2, AT-1030 Vienna	Mr Peter FRANZMAYR	Director	5/06/2007
10	Ministry for Public Works, Transport and Communications	Palácio Penafiel, Rua de S. Mamede ao Caldas, 21, PT - 1100-533 Lisboa	Mr Mário Lino SOARES CORREIA	Minister	18/09/2007
11	Ministry of Economy and Transport, Slovenia	Kotnikova 5, SI-1000 Ljubljana	Mr Matjaž JANŠA	Director General	18/10/2005
12	Ministry of Transport and Communications Finland	PO Box 31, FIN-00023 Government Finland	Mr Harri KAVÉN	Director-General	22/09/2004
13	Swedish Road Administration	SE-78187 Bortänge	Mr Ingemar SKOGÓ	Director General	20/06/2005
	Non-EU States	Address	Name	Position/Title	Date of signature
13	Swiss Federal Roads Authority	Worbentalstrasse 68, Ittigen, CH-3003 Bern	Mr Rudolf DIETERLE	Director	22/11/2004
14	Royal Norwegian Ministry of Transport and Communications	P.O. Box 8010 Dep., NO-0032 Oslo	Mr Steinulf TUNGESVIK	State Secretary	8/06/2006
15	Ministry of Transport, Tourism and Telecommunications	Hafnarhusið við Tryggvagötu, IS-150 Reykjavík	Mr Sturla Böðvarsson	Minister	11/12/2006

Extended Floating Car Data (xFCD)



Currently no area-wide collection of xFCD
Only single projects in different countries

Experts opinion:

“A penetration rate of 2% - 10% would be sufficient for most warning messages”

xFCD - Conclusion

- xFCD will become more relevant in combination with future c2x-applications
- market penetration automatically increases with arrival of other safety systems
- concern is sometimes raised with respect to privacy issues
 - possible influence on market introduction strategies

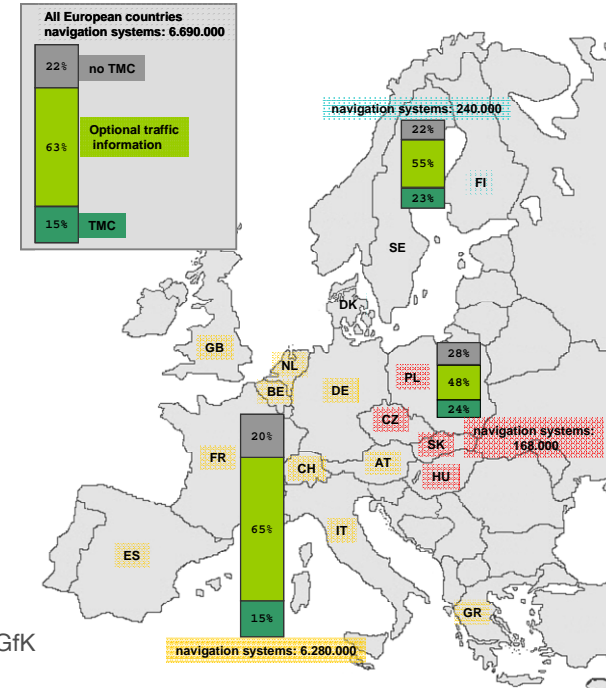
Real-time travel and traffic information (RTTI)

Infrastructure situation:



Source: TMCforum

In-vehicle situation:



Source: GfK

- RDS/TMC service is free of charge;
- commercial system: only FI and UK;
- Other countries offer both systems a public free and a commercial one

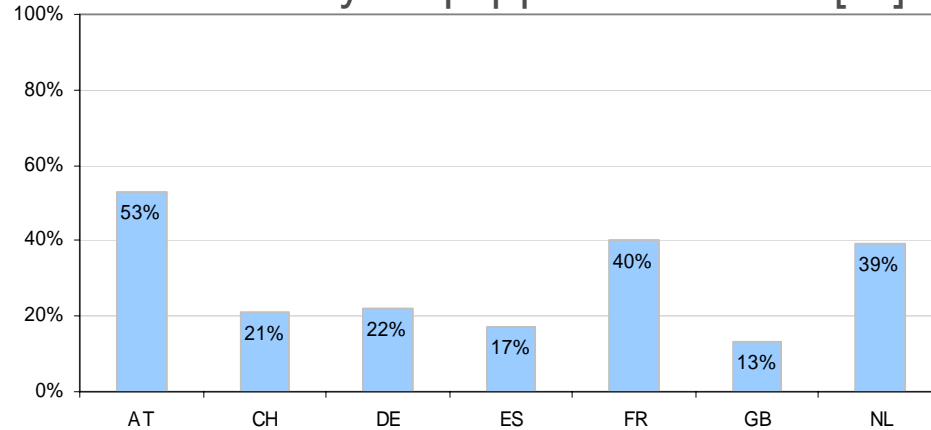
- Sold mobile navigation systems, 2007: ~73% receive traffic information
- On-board navigation systems, 2006: ~15% of new vehicle registrations

RTTI - Conclusion

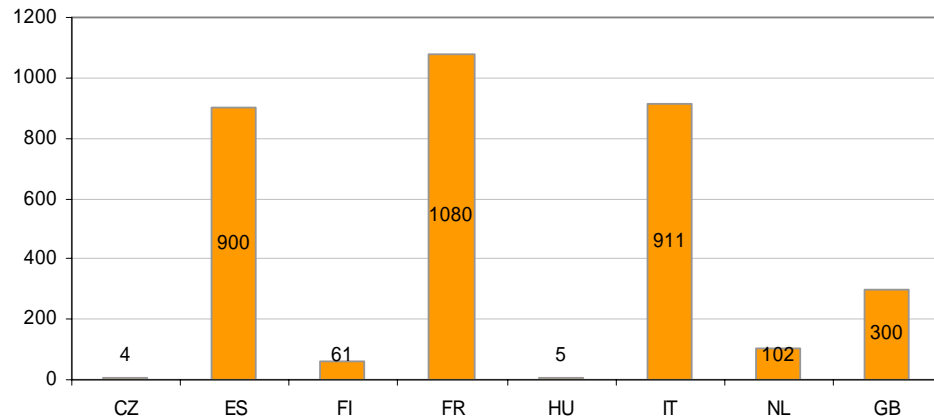
- RTTI is widely available
- an important user of RTTI is mobile navigation
 - market penetration increases rapidly
 - a strong market driver are nomadic devices
- Options for further enhancement of RTTI:
 - advanced message protocol (TPEG)
 - improved traffic contents (national databases)

Dynamic traffic management (DTM)

Motorways equipped with DTM [%]



Number of variable message signs (VMS)



Types of variable message signs:

regulation



danger warning



information



Source: Zackor et al: Stand der Verkehrstelematik in Deutschland im Europäischen Vergleich, 2003
 ASFINAG: Verkehrstelematik in Österreich, 2006

DTM - Conclusion

- Network coverage (“market penetration”) is no suitable means to compare dynamic traffic management! This is because
 - no information about quality or actuality of messages is considered
 - no relation to local and/or regional context is used (e.g. volumes, weather, VMS-spacing,...)
- In general: big differences exist between the European countries, with regard to
 - network coverage
 - type and number of VMS used
 - type of dynamic management in operation

Speed Alert



Picture: Vägverket, ISA

Basic infrastructure related information in digital maps is completely only available in:

Norway, Finland, Sweden

Some other countries have partial coverage, e.g. Spain

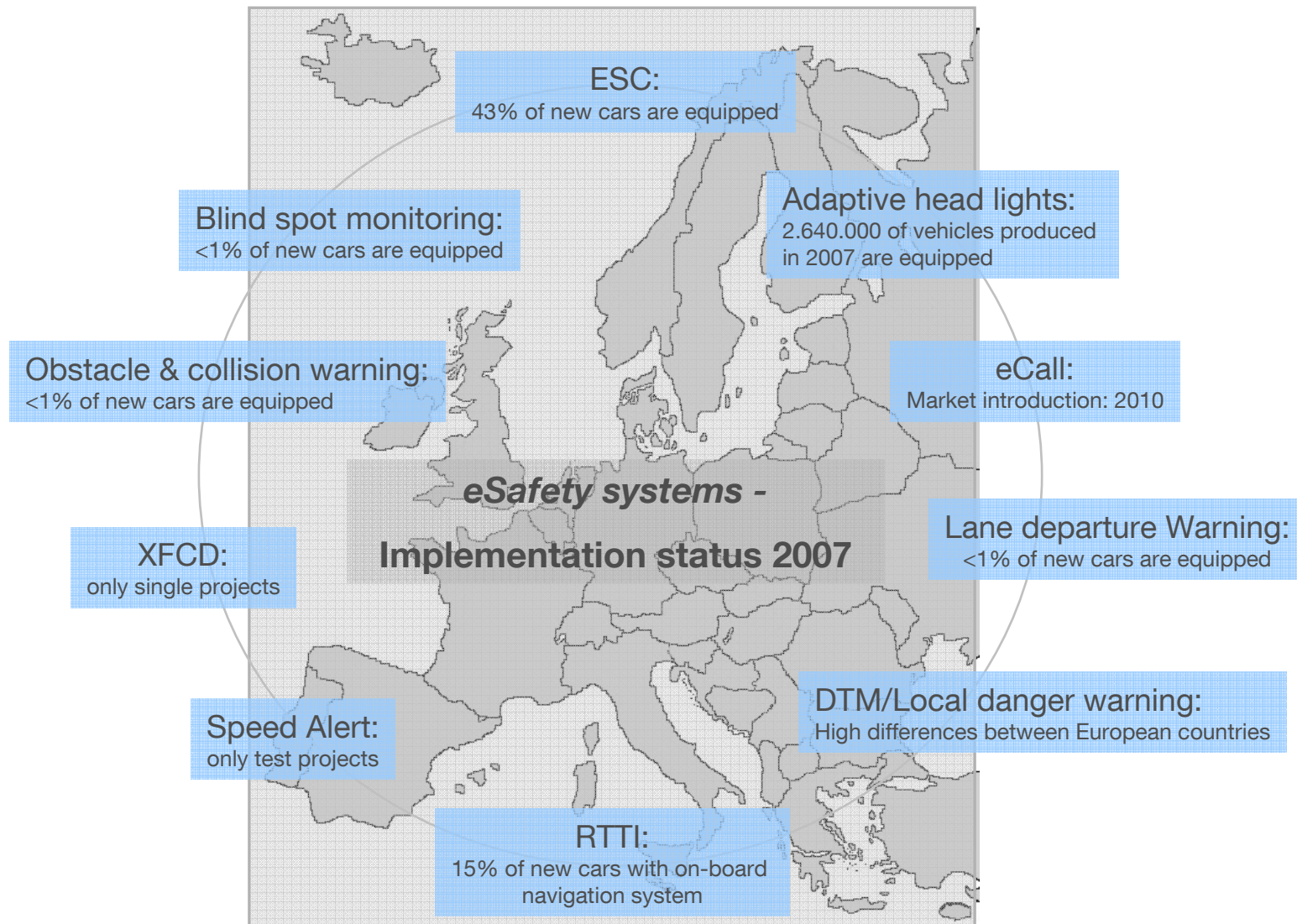
Different systems are tested in Europe:

- France: LAVIA
- The Netherlands: ISA (intelligent speed adaptation)
- Sweden: ISA (intelligent speed adaptation)
- United Kingdom

Promoting Speed Alert:

e.g.: Swedish road administration
EuroNCAP

Resume



Thank you!