

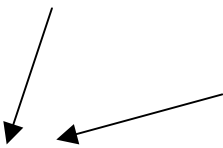
# eCall Working Group “In Vehicle Functionality (ECIV)”

## Goals

### eCall Driving Group (Chair ERTICO/ACEA):

1. WG Benefits (Chair Renault)
2. WG Business Case (Chair ARC)
3. WG Infrastructure (Chair Ertico)
4. **WG In-Vehicle Functionality (Chair ACEA)**

ETSI contribution Transport-Protocol  
deliverable: **eCall vehicle specification**



### Milestones

- Table of contents 09/05 ✓
- internal draft 12/05 (✓ 13.12.05)
- Final draft specification 06/06
- specification 12/06

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## Specification V0.6

2	SYSTEM OVERVIEW
2.1	HIGH LEVEL FUNCTIONAL REQUIREMENTS
2.2	IN-VEHICLE FUNCTIONAL REQUIREMENTS
2.2.1	<b>Phone based Bluetooth solution</b>
2.2.2	Embedded solution
2.3	INTERFACES
3	FUNCTIONAL SPECIFICATION
3.1	USER-INTERFACE ELEMENTS
3.2	ARMING AND DESARMING
3.3	MANUAL ACTIVATION
3.3.1	Human Machine Interface for phone based Bluetooth solution
3.3.2	Statecharts
3.4	AUTOMATIC ACTIVATION
3.4.1	<b>Triggers</b>
3.4.2	HMI
3.4.3	Statecharts
3.5	LOCALIZATION
3.5.1	<b>Location accuracy</b>
3.5.2	Direction of travel
3.6	<b>MSD-FORMAT</b>

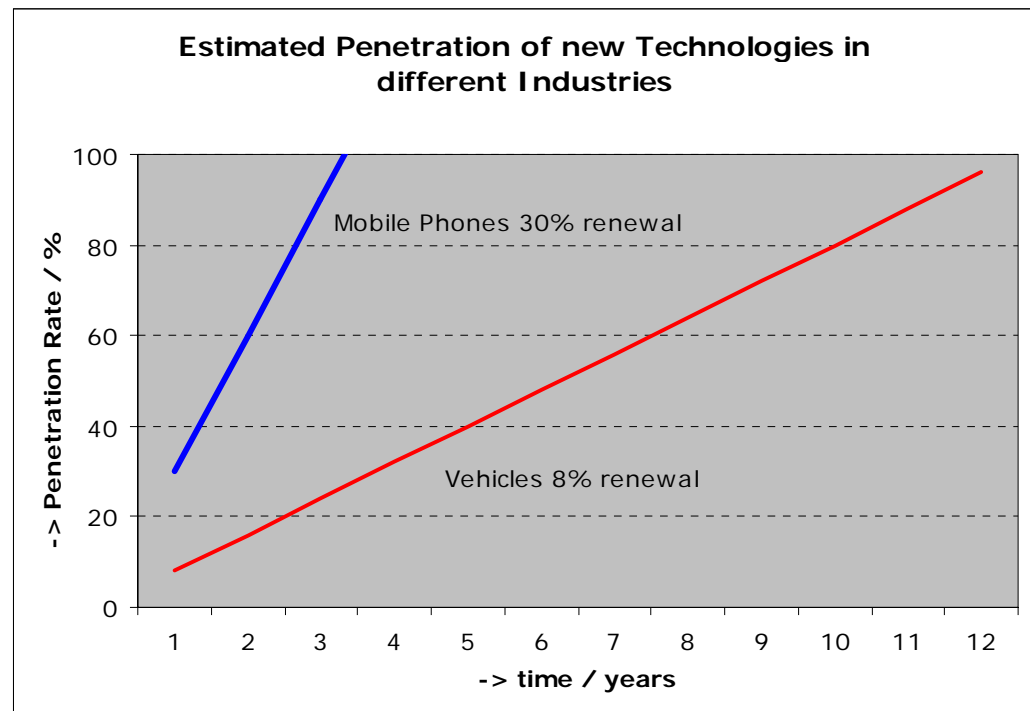
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## Penetration Rate for new Technologies in different Industries

- Considering a 400 mio subscriber volume for mobile phones for western Europe, the renewal rate is approx. **30%**

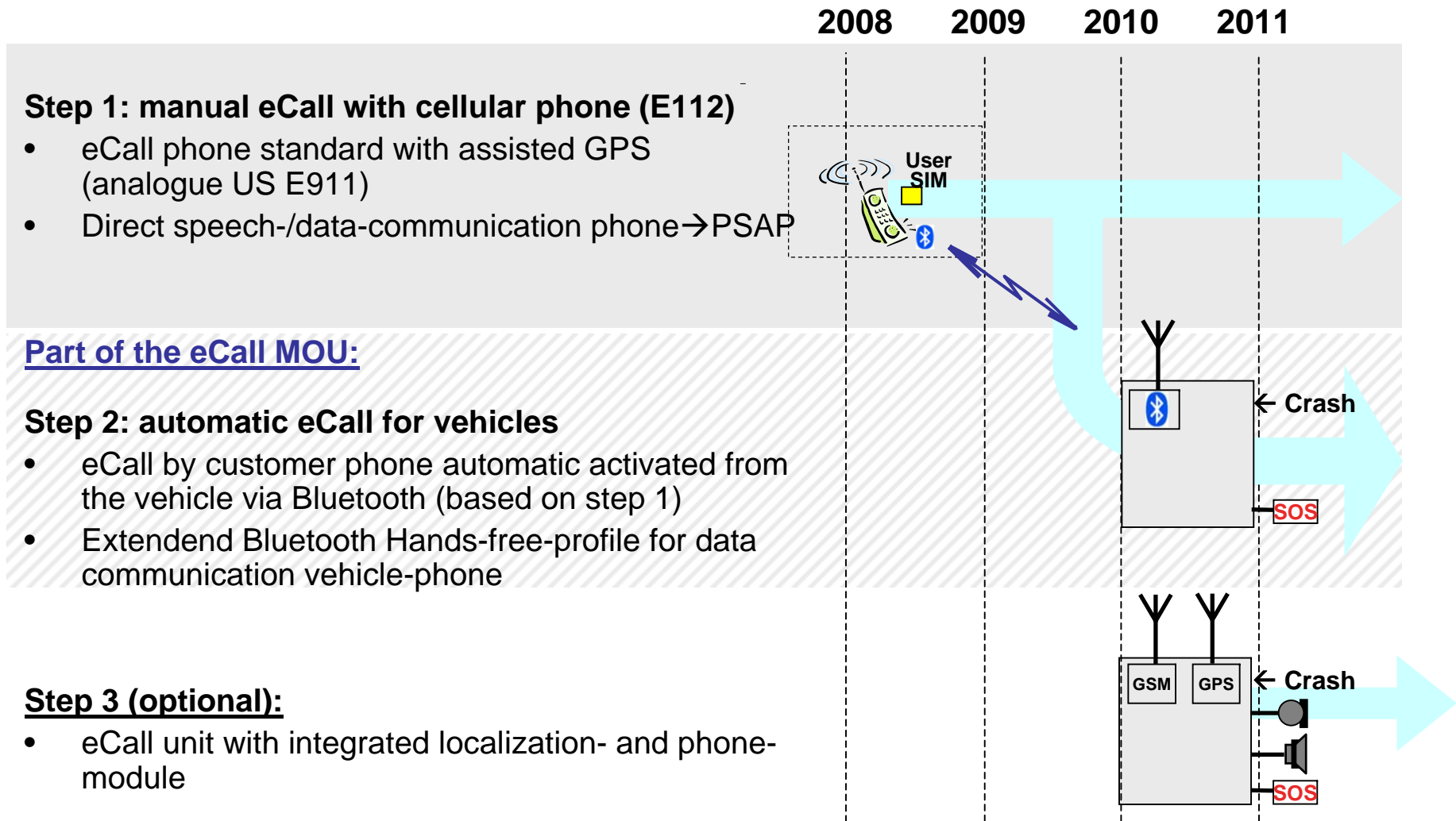
- 2 Years after a possible introduction of a mobile eCall (mobile phones), a penetration of 57% could be achieved. (90% penetration after 4 y.)

– ⇒ **almost every car owner owns a mobile phone**



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## Strategy for fast Implementation





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## **Position Accuracy**

- Current navigation technologies do not ensure a position accuracy below 25m without additional information (ABS sensor, digital map etc.).
- Future satellite positioning technologies might be able to provide more accuracy, but how much needs to be investigated especially in areas without unlimited view to the horizon (e.g. urban canyon).
- For vehicles (passenger and commercial) with typ. length between 4 to 18m a required position accuracy below 25m gives a PSAP no additional information

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## Proposal for Minimum Set of Data (MSD)

Name	Bit		Description
Vehicle identification	119 Bit	17 char a 7 Bit	VIN number is expected as the best unique identifier through the vehicle industry
Time stamp	16 Bit		N x 1,3 Seconds per day
Trigger Type	1 Bit		as a minimum a indication stating if the eCall has been manually or automatically initiated
Location	20 Bit 20 Bit 8 Bit		GSP Position Latitude (10m) GSP Position Longitude (10m) Direction of Travel (calculated form the last 3 positions)
Service Provider	32 Bit	4 x 8 Bit	Opt. Service Provider IP Address in IP V4 Format,
Full Set of Data attached	1 Bit		if not equal 0 additional information can be transmitted by XML-Format in the Full Set of Data (FSD)
Sum:	217 Bit		

**NOTE:**

Formatting, and presentation protocols are effected as defined in the standards referenced in the UUS datagram supports 32 bytes of data (but 7-bit characters = 224 Bit). At the PSAP-site it is decoded in the same way in order to extract the real information. The data limitation of 28 bytes is a restriction of ISDN technology used by PSAP's, not a limitation of cellular technology.

**Backup**

Vehicle Identification Number Passenger car  
 (according to ISO 3779 and SAE J272)

W	1. – 3.	WMI – World Manufacturer Identifier
D	digit	of the manufacturer DaimlerChrysler AG,
D		Stuttgart
-----		
A	4. digit	Line: siehe Blatt 3 / see sheet 3
-----		
J	5. digit	the 4. character of type designation encoded: see sheet 3
-----		
7	6. – 7.	(e.g. 199.378)
8	digit	The last two characters of Mercedes-Benz type designation
-----		
X	8. digit	
		3)
		Restraint system code (see sheet 3)
-----		
2	9. digit	check digit
-----		
3	10. digit	model year code
		see sheet 4)
-----		
M	11. digit	production plant (siehe Seite 5 / see sheet 5)
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1	12.-17.	Fortlaufende, aufsteigende 6-stellige Zählnummer (identisch mit
2	digit	der
3		12. – 17. Stelle der "EG-Fahrgestellnummer)
4		sequential number, rising from 000001 to 999999

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## GST Rescue Proposal für Minimum Set of Data (MSD) – Part 1

Name	Bit	Char	Description
eCall Source	2 Bit		11 automatic e-call with MSD 00 manual e-call with MSD 01 good samaritan call with MSD 10 "other" call with MSD
Certification		1 Char	car(0), public vehicle truck(1), truck publicTransport(2), Public transport ev(3), emergency vehicle psap1(4), Public safety answering point ea(5), Emergency service pS(6), Private Service car_test(7), simulated crash ea_test(8), simulated Emergency service ..., extensible
SIM ID		16 Char	Caller Identification
Time Stamp	32 Bit		Time (UTC)
Precise Location	32 Bit 32 Bit 8 Bit		Latitude (0,03m) Longitude (0,03m) Heading

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## GST Rescue Proposal für Minimum Set of Data (MSD) – Part 2

Name	Bit	Char	Description
Vehicle ID	160 Bit 96 Bit 96 Bit 96 Bit		VIN Make Modell Colour
<i>Service Provider (optional)</i>	<i>128 Bit 96 Bit 16 Bit</i>		<i>Tool free No IP Adress Country Code</i>
eCall Qualifyer	8 Bit 144 Bit		No. of triggers activated Which sensors have reached treshhold value and activated its trigger: Front crash sensor 1, Front crash sensor 2, Rear crash sensor, Side crash sensor, Airbag sensor, Kinetic energy absorbed by the impacted vehicle, Rollover sensor, -- extensible
Sum	1065 Bit		