
The eCall Project



Why is eCall important?

The situation for drivers are critical:

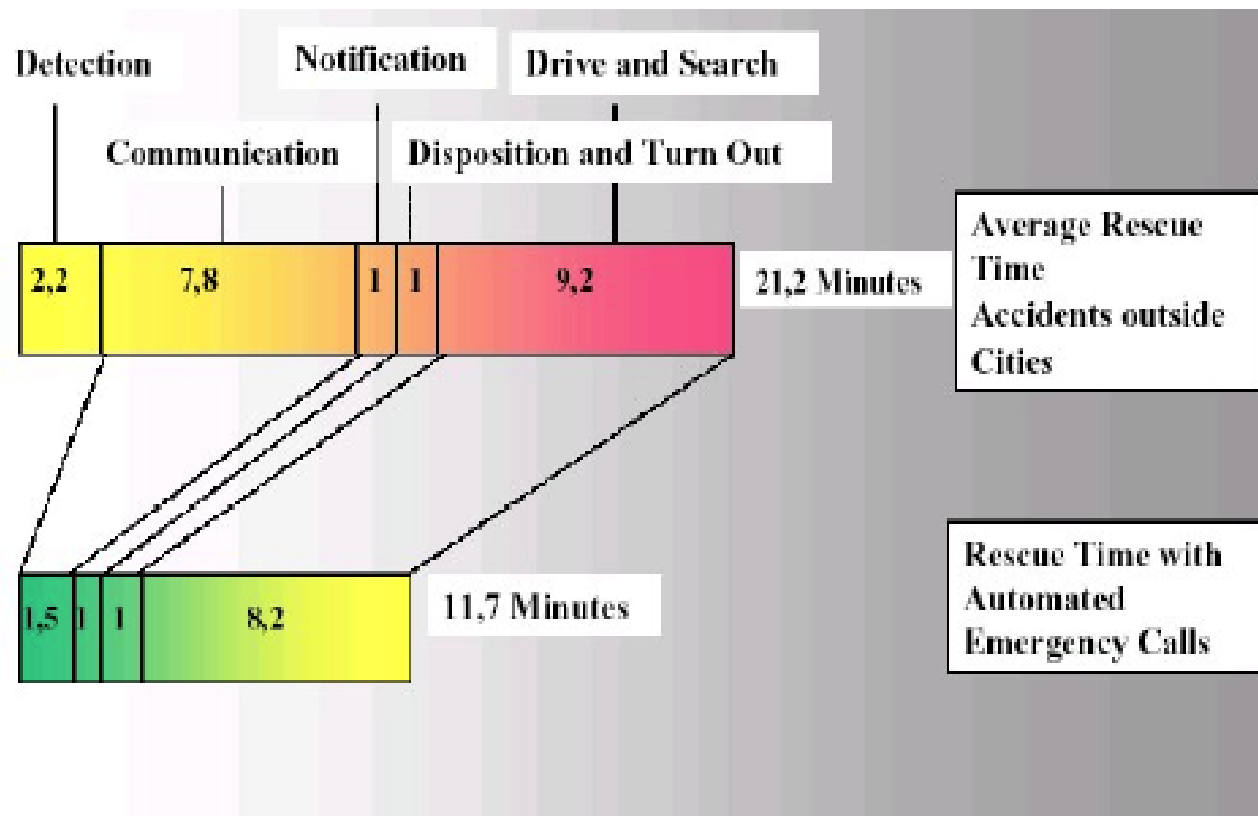
- 1,9 Million injured per year in EU 25, all needing urgent attendance
- The involved are not able to call from their mobile phones
- The involved do not know their position, especially in interurban routes and/or abroad

Why is eCall important ?

The situation is worse for those travelling abroad:

- Over 100 million trips to another EU country per year (EU-15)
- 65 % people feel less protected while abroad
- Most do not know which number to call in an emergency (in some countries over 60%)
- Language problems are pertinent and prohibit proper communication

Reduction in response time



Source: E-merge WP2

eCall – what will change?

- ❑ **Reduction of average response time to the accident:**
 - 50% in Rural Areas
 - 40% in Urban Areas

- ❑ **Reduction of accidents severity**
 - ~15% to less severe medical category

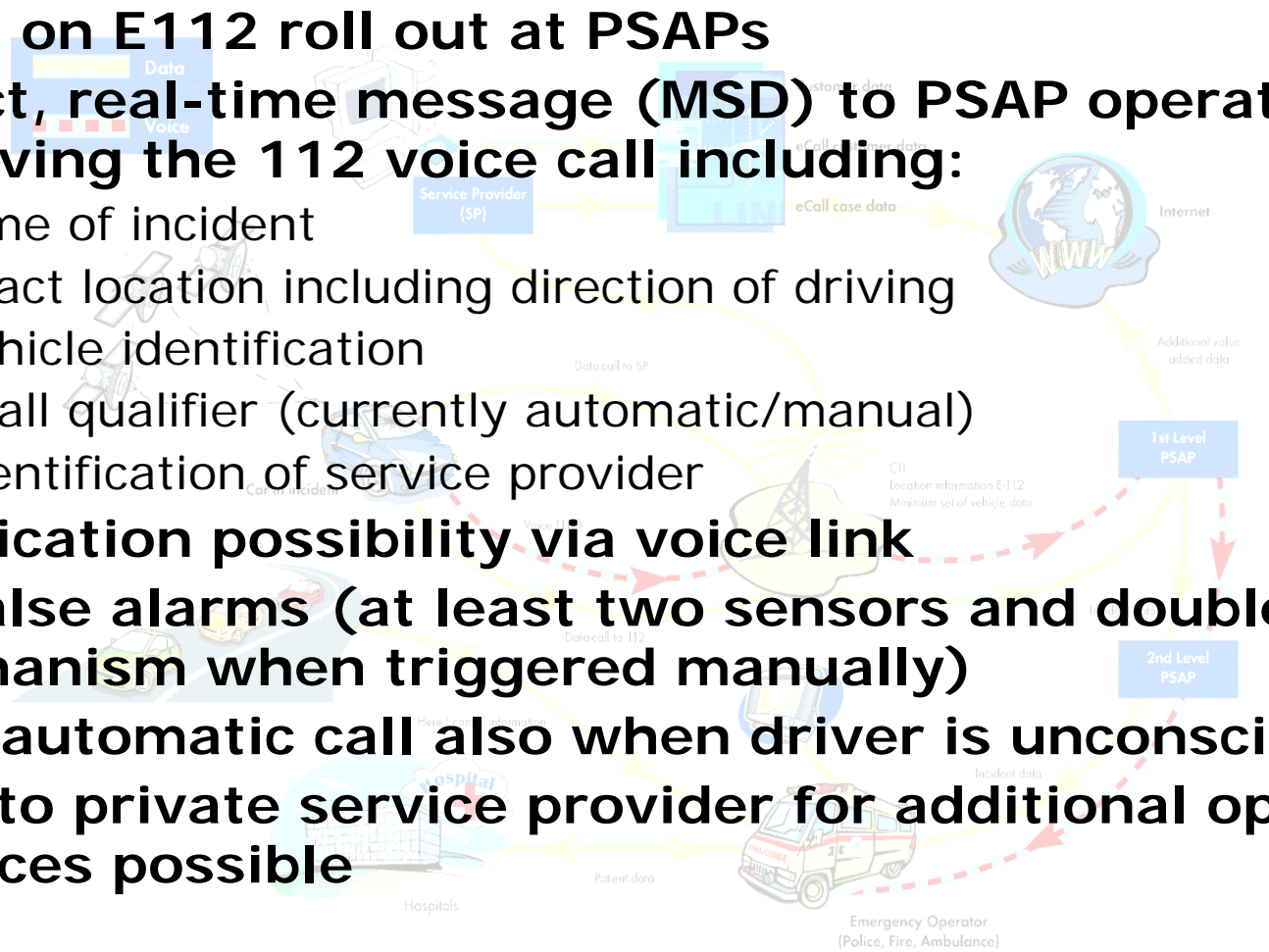
- ❑ **Annual lives saving**
 - Estimated to be over 2.000

- ❑ **Costs savings (exceed many times needed investments)**



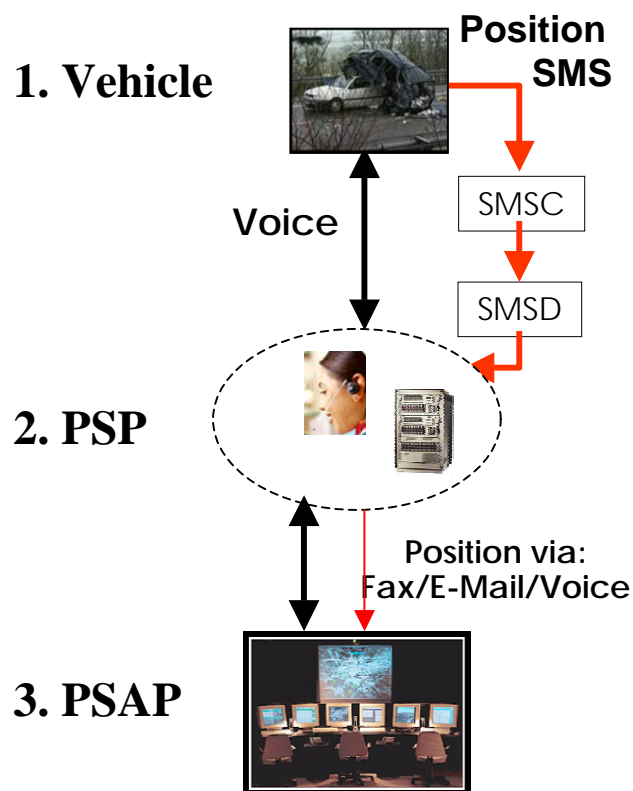
eCall – How does it work?

- ❑ Build on E112 roll out at PSAPs
- ❑ Direct, real-time message (MSD) to PSAP operator receiving the 112 voice call including:
 - Time of incident
 - Exact location including direction of driving
 - Vehicle identification
 - eCall qualifier (currently automatic/manual)
 - Identification of service provider
- ❑ Verification possibility via voice link
- ❑ No false alarms (at least two sensors and double check mechanism when triggered manually)
- ❑ Safe automatic call also when driver is unconscious
- ❑ Link to private service provider for additional optional services possible

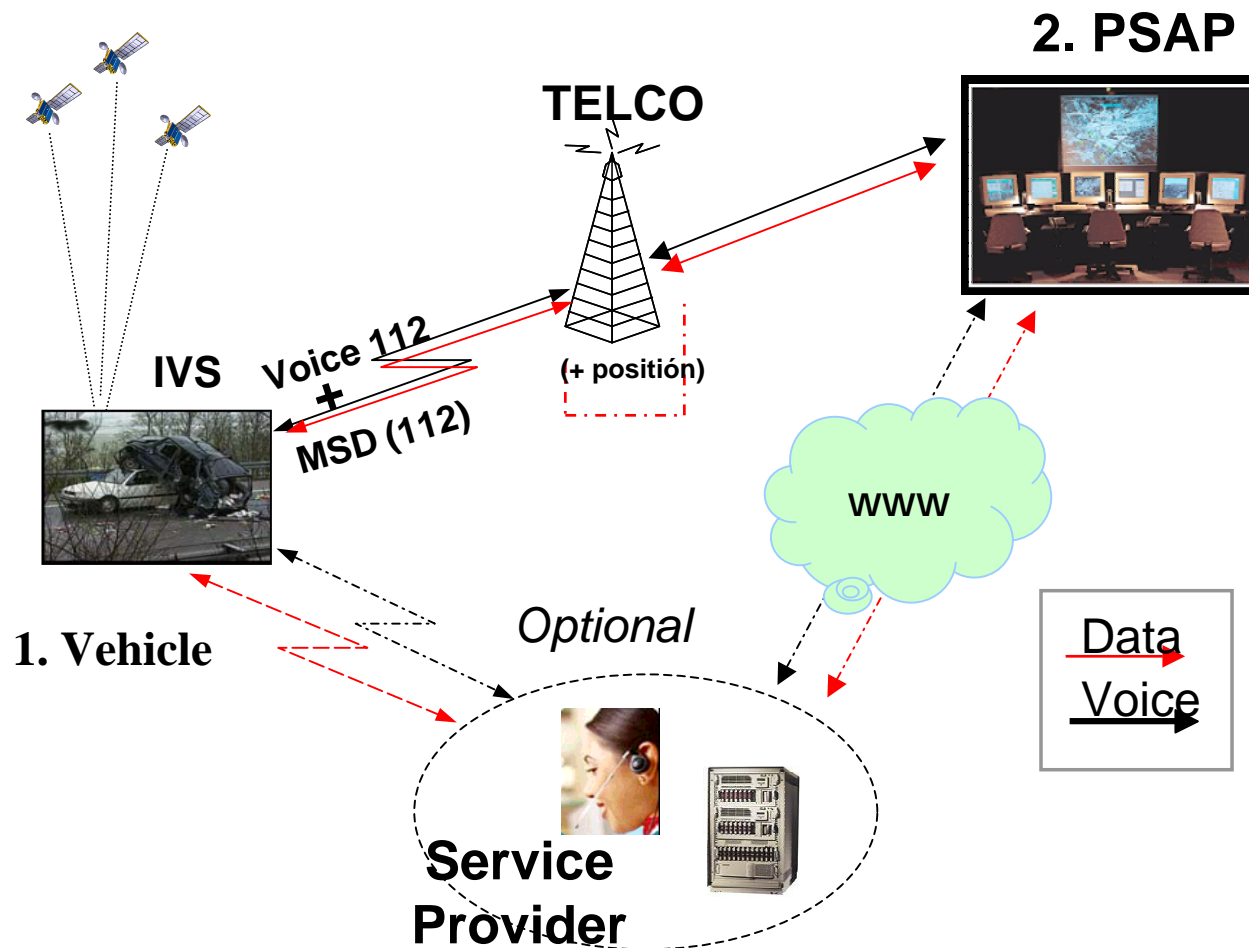


eCall Technical Principles

Existing Solution: Private Service Providers



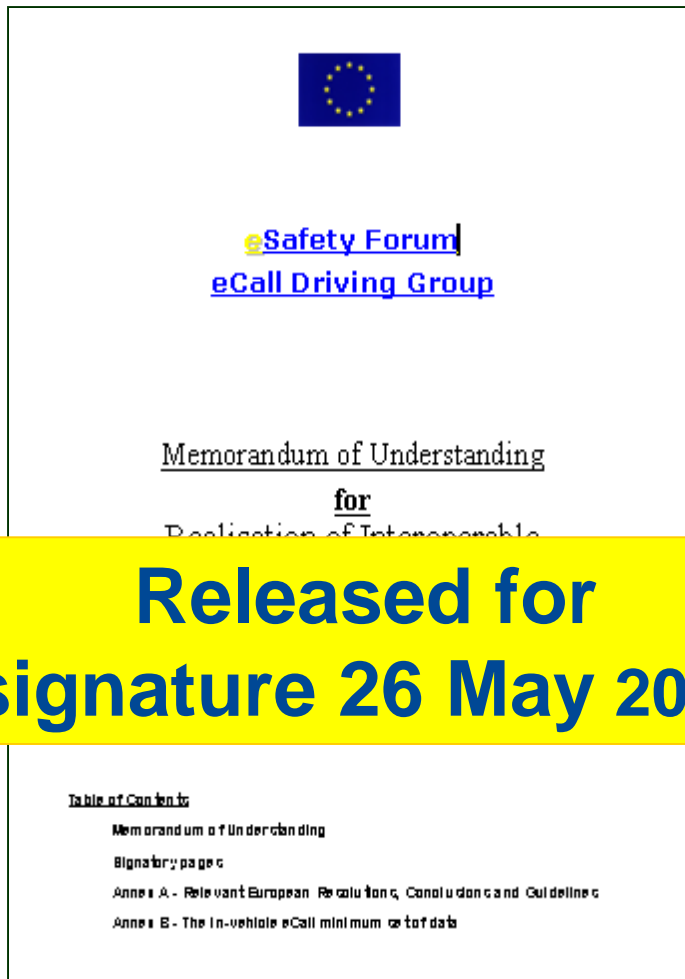
eCall Solution



Key decisions

- ❑ **Using the pan-European emergency call number 112 for both voice and data**
 - Works immediately across Europe (now for voice and with limited effort for data)
 - Free of costs for the users
 - No need for special numbers for in-vehicle eCall – difficult and costly
 - No need for updating phone numbers of PSAPs in vehicles systems or at service providers – costly, difficult and timely process
 - Direct contact with the emergency operators being public, public/private or private service providers operating under the regulation of a public body, depending on the decisions regarding receipt of 112 taken nationally - means no delay in the emergency response
 - Clear for the users that this will be used for emergency response only, which could be difficult to explain if done through a commercial number, which provide a link to the emergency operators (PSAPs)

Working together



- ❑ **Through an MoU working on a parallel commitment towards:**
 - Identifying a common road map to deployment and related business cases leading to:
 - Implementation of in-vehicle equipment in all new vehicle models when feasible
 - Willingness and readiness to carry the data from the Telecom operators
 - Readiness to receive and act on the vehicle data from the PSAPs

Working together

- ❑ eCall MoU signed by ACEA*, EC and ERTICO on 27 August 2004

Signatories (41 including ACEA members):

- ❑ ADAC e.V., ARC Transistance S.A, CapGemini Finland OY, City of Oulu Finland, Ellas SA TIC/PSAP, European Emergency Number Association - EENA 112, Finnish Road Administration, Hellenic Institute of Transport, Indagon OY, KLPD - The Netherlands' National Police Organisation, KoKom - National Centre of Emergency Communication in Health, LSP Hungary, Ministry of Transport and Communications Finland, Mobisoft OY, Motorola, Navteq B.V., Peiker acoustic GmbH & Co. KG, RACC - Reial Automòbil de Catalunya, Robert Bosch GmbH, Swiss Federal Roads Authority, TeleAtlas NV, TISPOL -The European Traffic Police Network, VTT Building and Transport, WirelessCar, Wavecom

*ACEA on behalf of: BMW GROUP, DAF TRUCKS NV, DAIMLERCHRYSLER AG, FIAT S.p.A, FORD OF EUROPE GmbH, GENERAL MOTORS EUROPE AG, MAN NUTZFAHRZEUGE AG, PORSCHE AG, PSA, RENAULT SA, SCANIA AB, VOLKSWAGEN AG, VOLVO AB,

eCall Cost Benefit balance

❑ Costs

- **IVS* (development, integration, unit cost, HW+SW (license))**
- **Telecom costs**
 - infrastructure adaptation, fix SIM, handling, provide service for delivery of information to PSAPs
- **PSAP/Call/Data Center/ IT + Service Infrastructure (partly E-112 carry over)**
 - Set up cost
 - Operation cost
 - Update/maintenance costs
 - Optimization
 - Training
- **Market Promotion and education**

❑ Benefits/savings

- **Fatality and severity of injury reduction**
 - Social costs reduction
 - Health care cost reduction
 - Insurance costs reduction
- **Improve efficiency of EAs**
 - Better fit of resources to incident
 - Shorter reach to incident allowing lower severity and better use of resources
- **Surrounding warning**
 - Reduce nose to tail collisions
 - Better traffic flow management
 - Expandable mobility service

Financial incentive ?

Socio-economic benefits SEiSS study

Accident Severity	Road Fatalities changed to severe Injuries	5-15 %
	Severe Injuries changed to slight injuries	10-15 %
Traffic Effect	Reduction in congestion time	10-20 %

	Type of Accident		
	With fatalities	Severe injuries	Slight injuries
Costs per accident	1,000,000 €	135,000 €	15,000 €
Effect in congestion	15,000 €	5,000 €	5,000 €

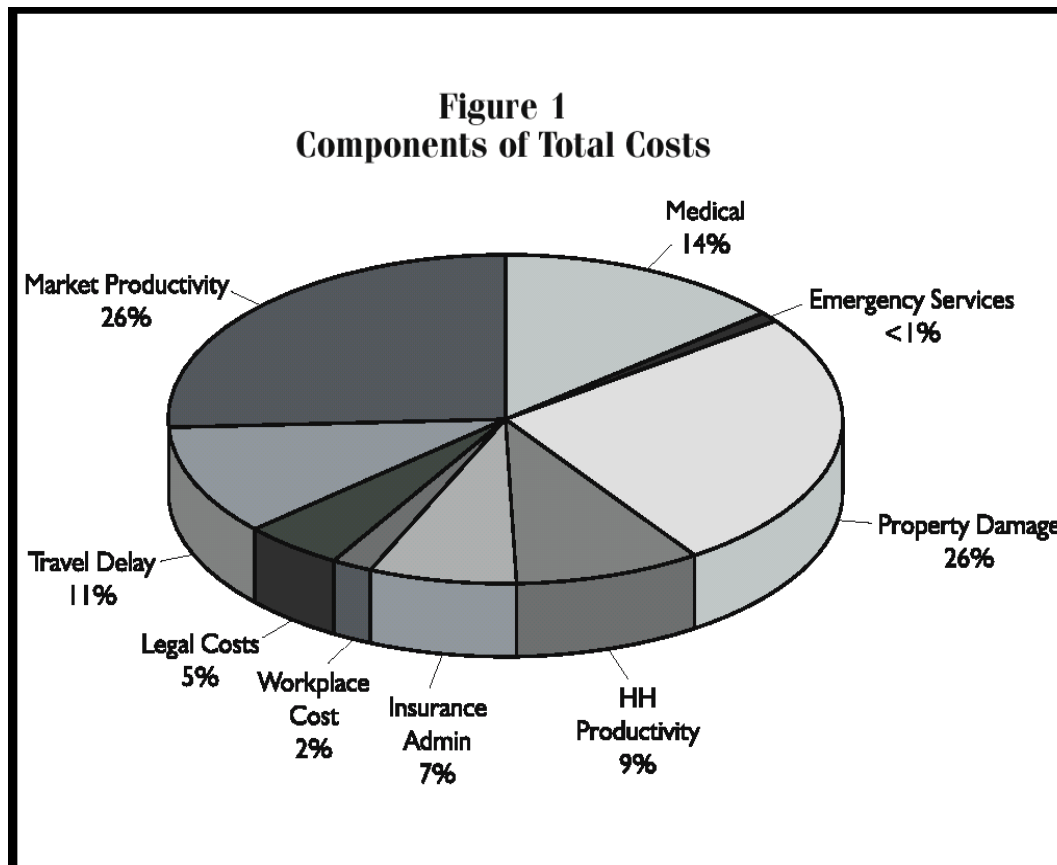
Cost-Benefit for EU-25 SEiSS study



Estimated annual costs for eCall	Min. –	Max.
System costs (on-board unit)	3,000 –	4,500 M€
PSAP Equipment costs	3 –	5 M€
Training costs	27 –	45 M€
Total Costs	3,030 –	4,550 M€
Estimated annual benefits for eCall		
Accident cost savings	5,700 –	21,900 M€
Congestion costs savings	170 –	4,000 M€
Total benefits	5,870 –	25,900 M€
Benefit Cost Ratio	1.3 –	8.5

Source: SEiSS

Economic effect-ECDG sub-group



- ❑ 15% of the victims to a lower category
- ❑ eCall shall impact at least 50% of the total cost
- ❑ European crash figures are the same as USA

Conclusion-ECDG sub-group

1. That an average 10 minutes (50%) time reduction is a sound figure in rural areas in most European areas
2. That a 4 to 5 minutes (40%) time reduction is also quite robust in Urban areas
3. That rural crash are bringing more risk of late alert and late arrival of ESV, when rural crashes are bringing around 2/3 of road statistics and 1/3 of fatalities. eCall being even more efficient in rural areas, we can assume that the positive effects will prove substantial.
4. That side benefits in rescue operations, false alarms filtering, better scene management will bring extra benefits, which should secure current economic assumptions
5. That shorter time to the scene has a substantial impact on death and severity reduction, which will be a lower global cost for society. 10 to 20 % of people involved moving to lower severity is seen as realistic.
6. That from these elements, and although this would need further analysis and trials, a 500 to 700 € average saving per equipped vehicle, is likely.

Potential business models

- ❑ **Key task of the respective stakeholder workgroup to agree on a feasible, sustainable business model**
- ❑ **Based on business model to develop individual stakeholder business cases**
- ❑ **Key prerequisite to achieve positive business cases**
 - Customer contribution
 - Benefits/savings related to social costs to lead to tax reductions and/or tax refunds
 - Benefits/savings on insurance side related to health care costs to lead to lower insurance premiums
 - Financial incentive schemes to speed up market penetration

Providing Financial incentives (Example of Danish model)



Citizens are allowed tax deductions/fiscal incentives when installing the following (1€ ~ 7,45kr):

- ❑ New cars with ABS: Deduction in the special vehicle tax by 4.165 kr.
- ❑ New cars with airbag: Deduction in the special vehicle tax by 1.280 kr. per. airbag up to 4 airbags.
- ❑ New cars with ESP: Deduction in the special vehicle tax by 3.500 kr. in 2003, 3.200 kr. in 2004, 2.600 kr. in 2005, 2.000 kr. in 2006, 1.300 kr. in 2007 and 700 kr. in 2008.

eCall – STATUS



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- ❑ eCall functional architecture and model for its implementation agreed - clear roadmap for deployment needed.**

 - ❑ Necessary technologies available - standards are needed.**

 - ❑ Socio-economic benefits and investment needs generally known - more details and clarifications on how to provide feasible business cases required to speed up implementation.**

eCall – Roadmap

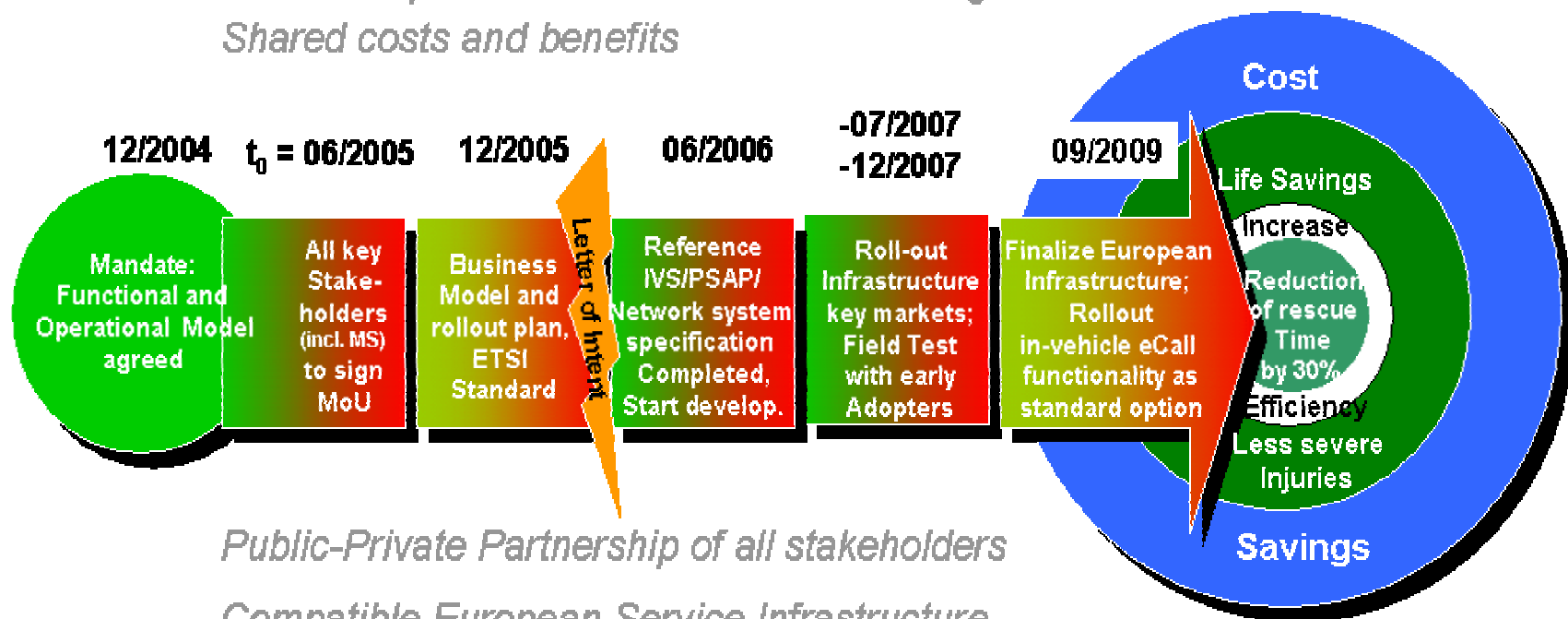
- ❑ June 2005 become t_0 . Any delay could move t_0 and therefore the subsequent dates to a later starting and/or completion date
- ❑ Form “eCallNet” consortium and establish financial support
- ❑ MoU signatures from all key stakeholders (incl. Member States) of the eCall service chain – June 05 (EC)
- ❑ Commission to adopt 2nd eSafety communication with actions for MS and industry – June 05 (EC)
- ❑ eCall Business Model prepared for decision taking by key stakeholders including insurances – Dec 05 (All)
- ❑ ETSI standardization and eCall interface – Dec 05 (ETSI)

eCall – Roadmap

- Implementation and rollout plan prepared for decision taking – Dec 05 (All)**
- Finalize in-vehicle eCall system architecture and start system development – June 06 (ACEA)**
- Rollout of infrastructure in key Member States – June 07 (MS)**
- Full-scale field test by “early adopter” Member States – until Dec 07 (EC/MS)**
- Finalize infrastructure in all other member States and staggered introduction of eCall as standard option – Sept 09 (MS, ACEA)**

eCall – Plan to success

Low cost in-vehicle eCall functionality as standard option
Common specifications and reference design
Shared costs and benefits



Public-Private Partnership of all stakeholders
Compatible European Service Infrastructure
Full coverage of key Member States
Financial incentives for ramp-up

Insurance Industry

Next steps?