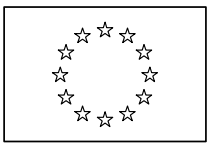

COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 14.9.2005
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COMMUNICATION FROM THE COMMISSION TO THE COUNCIL, THE EUROPEAN PARLIAMENT, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

The 2nd eSafety Communication
BRINGING eCALL TO CITIZENS

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1. INTRODUCTION

In the Communication **i2010 – A European Information Society for Growth and Employment** the Commission presents its strategy for the information society up to 2010. The i2010 initiative recognizes the importance of the transport sector, accounting for 10% of Europe's GDP and employment, and the significance of the sector for ICT research and development. Indeed **safe and efficient transport and mobility services** are essential for the achieving the Lisbon goals of growth and jobs.

To help to make progress towards these goals, the Commission will use all its instruments - regulatory tools in the area of telecommunications, research funds, and political initiatives. To this end, the Commission will launch **a Flagship Initiative "The Intelligent Car"** as part of the **i2010 strategy**[1].

The present Communication, dealing with the urgent and practical actions needed **to roll-out eCall, the pan-European in-vehicle emergency call,** is the first building block of the Intelligent Car[2] initiative.

Increasing road safety is a human and economic necessity. In 2004, the number of road fatalities in the 25 Member States of the European Union was 43.000. Without urgent measures, the ambitious target of reducing this to 25.000 road deaths by the year 2010[3] will not be met. The carnage on European roads will continue, creating immeasurable human suffering. The costs to our health care system will remain huge, and our economies will be burdened by loss of productivity and large-scale material damage.

Technologies that can save lives and reduce the severity of injuries exist today. In the first eSafety Communication[4] the Commission proposed actions to develop and deploy **Intelligent Vehicle Safety Systems** that are based on advanced Information and Communication Technologies (ICT). These systems can prevent accidents from happening, mitigate their consequences and aid in rescue if accidents do take place.

Since the adoption of the first eSafety Communication, considerable progress has been made, and many eSafety technologies, systems and services are ready for deployment. One such system is **the pan-European in-vehicle emergency call, eCall**.

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1 Communication from the Commission: i2010 – A European Information Society for growth and employment, COM(2005) 229 Final, 1.6.2005

2 In the context of the i2010 Communication, "Car" includes cars, trucks, buses and motorbikes

3 European Road Safety Action Programme : Halving the number of road accident victims in the European Union by 2010 : A shared responsibility, COM 2003(311) final 2.6.2003

4 Information and Communications Technologies for Safe and Intelligent Vehicles, COM(2003) 542 Final, 15.9.2003

In case of an accident, the eCall device in the car will transmit an emergency call that automatically goes to the nearest emergency service. eCall can be triggered manually, but in case of a severe accident the car will send it automatically. The life-saving feature of eCall is the accurate information it provides on the location of the accident site: the emergency services are notified immediately, and they know exactly where to go. This results in a drastic reduction in the rescue time.

The large-scale roll-out of eCall is a priority goal of the eSafety initiative. Since 2002, the stakeholders have worked together and developed an implementation plan for eCall. However, **without urgent actions from the side of the Member States the deployment of eCall could be substantially delayed**.

2. TOWARDS THE PAN-EUROPEAN IN-VEHICLE EMERGENCY CALL (ECALL) SERVICE

A key recommendation of the first eSafety Communication was **the establishment of a harmonised, pan-European in-vehicle emergency call (eCall) service** that builds on the single European emergency number 112.

There are over 1.7 million accidents that require medical help in Europe per year, and many more that need other types of assistance. After the accident the people in the car may be in shock, not know their location, be unable to communicate it or unable to use a mobile phone. In all these cases eCall helps: it can drastically cut the emergency response times, save lives and reduce the severity of injuries. When implemented, the socio-economic benefits of eCall will be huge.

Significant progress towards the full-scale roll-out of eCall has been achieved. **The eCall Driving Group** that was established to foresee the implementation **has set 2009 as a target year for full roll-out**.

However, the setting-up of a full emergency chain for eCall needs the co-operation of many authorities. This co-operation has been slow to materialize and in many Member States it is completely absent. The need to modernize the emergency services is recognized, but is not carried out as a result of lack of funding or organisational complexities.

The Commission strongly urges the national and regional governments to act and to invest in the necessary emergency care infrastructure for eCall, with the view to launch the full pan-European service in 2009.

2.1 eCall: How does it work?

The in-vehicle eCall is an emergency call generated either manually by the vehicle occupants or automatically via activation of in-vehicle sensors after an accident. When activated, **the in-vehicle eCall device will establish an emergency call carrying both voice and data directly to the nearest emergency services** (normally the nearest 112 Public Safety Answering Point, PSAP), see Figure 1. The voice call enables the vehicle occupants to communicate with the trained eCall operator. At the same time, **a minimum set of data** will be sent to the eCall operator receiving the voice call.

The minimum set of data contains information about the incident including time, precise location, vehicle identification, eCall status (as a minimum, indication if eCall has been manually or automatically triggered) and information about a possible service provider.

2.2 Why do we need eCall ?

According to the results of an analysis conducted by the E-MERGE[5] project funded by the European Commission, an eCall system that relays the accurate location of the accident to the PSAP and the emergency services will allow **a reduction of response time to the accident of about 50% in rural areas and up to 40% in urban areas**. When medical care for severely injured people is available at an earlier time after the accident, the death rate and severity of trauma resulting from the injuries can be significantly reduced. This is known as the Golden Hour Principle of accident medicine.

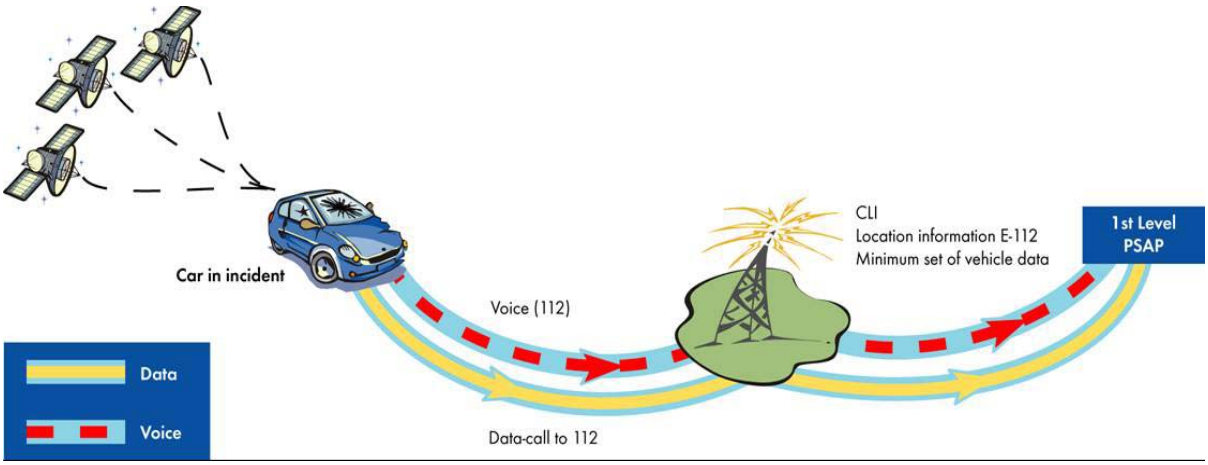

Figure 1: eCall operating principle

Cost-benefit estimations for eCall carried within the E-MERGE project and the SEiSS study[6] **indicate that in EU-25 up to 2.500 lives can be saved per year, with up to 15 % reduction in the severity of injuries**. These estimates were based on the CARE accident data base[7] from 2002.

Road accidents also lead to congestion and possibly secondary accidents. As a result of shorter rescue time, eCall can reduce congestion. **The above-mentioned studies indicate that this reduction may be up to 20%.** Additionally, other road users can be more quickly informed about the accident.

Considering the total impact of eCall estimated by the SEiSS study, the annual accident cost savings are estimated to be up to 22 billion € and the annual congestion cost savings up to 4 billion €, which **brings the total annual benefits up to 26 billion €**. Compared to these benefits, the investments needed are relatively small, 150 € per vehicle and up to 50,000 € to upgrade a Public Safety Answering Point (PSAP)[8]. On the basis of this initial investment per

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5 See http://www.gstforum.org/en/subprojects/rescue/

6 Exploratory Study on the potential socio-economic impact of the introduction of Intelligent Safety Systems in Road Vehicles, see http://europa.eu.int/information_society/activities/esafety/call_4/index_en.htm.

7 http://europa.eu.int/comm/transport/care/index_en.htm

8 Estimates of the SEiSS study: Based on volume production of the in-vehicle unit and upgrade of PSAPs that already are able to process location information of E112 calls.

PSAP, and adding the costs for training their staff and to ensure adequate language support, it brings **the annual total costs up to 4,550 million €** in EU 25, including the in-vehicle systems. To calculate this amount, the number of necessary PSAPs in EU 25 has been estimated in average to be one PSAP per every 31,000 inhabitants, with 60 staff members per PSAP.

The above-mentioned figures **indicate a substantial benefit-cost ratio for eCall**. Even with a lower estimated success rate and higher costs the benefit-cost ratio stays positive, confirming the soundness of the investment into the eCall service.

2.3 Why does eCall use 112?

The aim of the eCall project is to implement **a pan-European emergency service that can be used by all vehicles in Europe**, regardless of their make, country of registration and their location. Europeans travel abroad in their cars more and more frequently, and therefore a pan-European interoperable service is a prerequisite for eCall.

The single European emergency number 112 was introduced to offer this type of service for emergency calls by a Council Decision in 1991[9]. Calls to this number are **routed to the nearest Public Safety Answering Point (PSAP)** in the different European countries**.** Calls can be made from any phone without charge, and they normally receive priority routing.

More and more of the 180 million calls to the emergency services per year **originate from mobile phones** (currently 60-70%). **For about 15% of these calls, the location cannot be accurately determined**, leading to a significant delay in dispatching help and even inability to send it.

The Universal Service Directive adopted in 2002[10] stipulates the obligation that **the public network operators make the caller location of all calls** to the extent technically feasible available to the emergency services[11]. The 112 calls with location information are known as E112 calls.

Implementation of the location capability for processing the E112 calls in the PSAPs also benefits eCall. After this investment, the cost of upgrading the PSAPs up to eCall level is considered to be relatively small. **Using 112 enables building of an eCall service that is truly pan-European, based on approved Directives, with a relatively small investment.**

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9 Council Decision of 29 July 1991on the introduction of a single European emergency call number (91/396/EEC), Published in the Official Journal L 217, 6.8.1991, p. 31

10 Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive); published in OJ L 108, 24.4.2002

11 For all calls to the 112 number, the network operator either sends the location information (push) or makes it available on request (pull). This function that is now being implemented in about 50% of the Member States is called the enhanced 112 or E112. The location information is in most cases the location of the wireless cell (so called Cell-ID)

The Directive on Privacy and Electronics Communications[12] contains provisions for safeguarding the personal data and protecting the privacy in electronic communications. However, in the case of a real emergency, it is considered that need for assistance overrides the need for privacy. The directive therefore allows the processing of location information and other personal data for organisations dealing with emergency calls.

2.4 Road Map for a full-scale roll-out by 2009

The eCall Driving Group was established to produce a framework architecture and a business model for eCall, and to define the roles for both the public and private stakeholders. These include the Member States, the Commission, telecom operators, PSAP operators, vehicle manufacturers, equipment suppliers, motorway operators, automobile clubs, insurance industry and service providers.

The Driving Group produced **a Memorandum of Understanding[13] on implementing eCall**. **The aim of the MoU is to ensure that eCall will work in any EU Member State.** The MoU binds the stakeholders in implementing the eCall together on the basis of common approved architecture and interface specifications, including the Minimum Set of Data (MSD). The MoU was signed by the European Commission, ACEA on behalf of the automotive industry and the multi-sector partnership ERTICO on behalf of its partners in August 2004. The MoU has now over 50 signatures.

The eSafety partners have agreed on a Road Map for eCall roll-out, presented in Figure 2. The main milestones are the following:

a) Agreeing on eCall roll-out plan, business model and standards by the end of 2005

b) Full specification of the in-vehicle eCall system and start of development by mid-2006

c) Full-scale field tests with early adopters in 2007

d) Introduction of eCall as standard equipment in all vehicles entering the market after September 2009

To enable eCall technology to work, the emergency services in the EU Member States will need to equip or upgrade their PSAPs to process eCall location reports at the latest by the end of 2007.

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[12] Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector

[13] Memorandum of Understanding for Realisation of Interoperable In-Vehicle eCall, see www.eScope.info

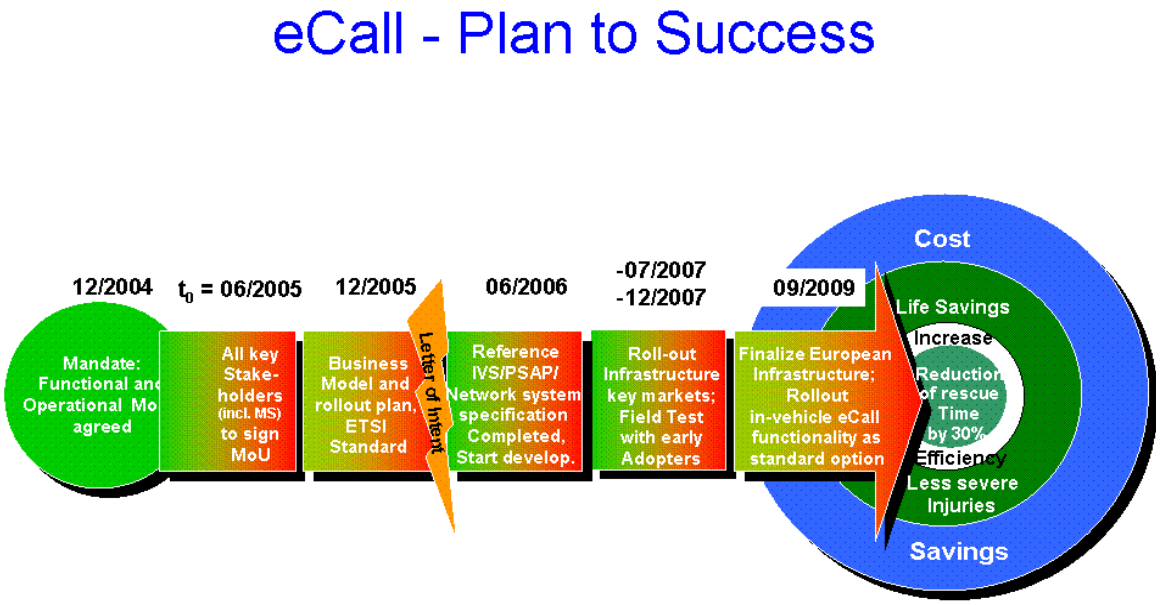

Figure 2: Road Map for eCall roll-out

3. ACTIONS FOR BRINGING ECALL TO THE CITIZENS BY 2009

With the commitment of the industry and public sector stakeholders, eCall can become a reality. **Industry is ready to equip all new vehicles with the eCall devices** starting from models entering the market after September 2009. However, without the full commitment of the Member States there will be no investment from the automotive industry. All stakeholders must **act together** to promote eCall at national and international fora, most notably the eSafety Forum.

3.1 Actions for the Member States

1. The Member States should sign the eCall MoU

The Member States should immediately sign the eCall Memorandum of Understanding at an appropriate level, and commit to the implementation of the pan-European eCall. The MoU has now over 50 stakeholders' signatures, but only two Member States (Finland and Sweden) and Switzerland have signed. **Lack of signatures, especially from the Member States threatens to delay the eCall implementation and weakens the commitment of industry.**

2. The Member States should promote 112 and E112

The single European emergency number 112 is in use in 24 Member States[14]. It is, however, **used in parallel with national numbers**, and only in Denmark and Netherlands is it the single number. The majority of Member States have also been slow in encouraging their public wireless network operators to provide location information (E112). As eCall is based on 112 and E112, **the Member States should promote the use of 112 and take steps for accelerating the introduction of location information in their public wireless networks**.

[14] Infringement procedure against Poland was started in March 2005.

3. **The Member States should upgrade their PSAPs to handle location-enhanced E112 calls and eCalls**

   The Member States should undertake to ensure, at the latest by the end of 2007, that adequate schemes are put in place to upgrade the infrastructure in the Public Service Answering Points (PSAPs) for the processing of location and other information of eCalls originating from vehicles. In order to comply also with the E112 regulation, the Member States should upgrade their PSAPs first to handle the location information of E112 calls, and then do the incremental upgrade that enables the handling of eCalls, following standards being developed by ETSI.

4. **The Member States should provide adequate location-enhanced emergency services and language support.**

   The Member States should ensure that their PSAPs are capable of adequately handling the eCalls originating from vehicles, that the personnel are trained to do so, and that language support is provided. They should also upgrade their whole emergency service chain (PSAPs, dispatching, emergency vehicles, and hospital emergency rooms) with adequate ICT based tools that will ensure fast and reliable response to vehicle accidents and take full benefit of the information provided by the in-vehicle eCalls. A service concept for the full emergency chain is being developed by the project RESCUE[15].

3.2 Promoting eCall at National and International Fora

The Commission strongly recommends that the Member States set up **national platforms** for promoting eCall. They should have participation from relevant ministries (transport, telecommunications and interior) including the authorities responsible for emergency services, as well as private industry and service providers. The Commission will launch a promotion campaign of 112, E112 and eCall, and will organise Conferences for best practice exchanges, in support of the national activities.

The Commission will propose to the Civil Protection Committee the creation of **a sub-group dealing with Emergency Communications,** 112, E112 and eCall. The Member States should support the work of this sub-group to solve the remaining issues related to the investments in the interoperable pan-European E112 and eCall service in their respective countries.

All eSafety stakeholders should support the work of the **eCall Driving Group** and use this forum for solving the remaining issues related to the roll-out of pan-European eCall by 2009. This includes agreeing on the specifications of the in-vehicle system, agreeing on the eCall business model, and organising the field tests.

The eSafety Forum is an important European platform to continue the dialogue on accelerating the development, deployment and use of intelligent vehicle safety systems in Europe. The Commission will organise regular High-Level and Plenary meetings of the Forum. These will allow all stakeholders to monitor the progress of the eCall roll-out and to take further actions if needed.

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[15] RESCUE is a part of the Integrated Project GST, see http://www.gstforum.org/en/7_sub-projects/rescue_rsq/

eCall has to operate in all GSM and 3G networks in Europe. Standardisation of the eCall transaction and data transfer protocols between the in-vehicle eCall terminal and the PSAPs is therefore crucial. The Commission has asked ETSI to accelerate the standardisation of eCall and to work with CEN as necessary. **ETSI should produce draft standards for eCall** by the end of 2005.

4. BUILDING A SAFER FUTURE WITH ESAFETY AND OTHER COMMISSION ACTIONS

The eSafety initiative is part of the **Commission comprehensive strategy** for improving road safety and transport efficiency in Europe, at the same time maintaining and improving the competitiveness of the industries involved, most notably the automotive sector.

In Road Safety, **the eSafety initiative** is recognized world-wide. The eCall is a priority item under eSafety, which has reached maturity. Under the eSafety Forum, eleven Working Groups have been established and results, not only eCall, are emerging. The Commission is also active **on the regulatory side** and in promoting road safety in joint initiatives.

As a result of the eSafety initiative and Community supported research programmes, Active Safety and Advanced Driver Assistance Systems like ESP, ACC, lane departure warning and collision mitigation are ready for a wider market introduction. The Commission will strengthen the efforts to promote the voluntary implementation of these systems.

4.1 eSafety

Human Machine Interaction (HMI) is a priority topic in eSafety. The HMI Working Group was established in 2003 to analyse the situation in the implementation of the so called **European Statement of Principles**[16] for Human-Machine Interaction. This analysis was done on the basis of the Member State's reports. The group focused on problem areas in HMI, such as the introduction of nomadic devices and the rapidly increasing complexity of new in-vehicle systems. The Working Group published its Final Report in February 2005. On the basis of this report the Commission intends to provide a Recommendation on HMI with a renewed European Statement of Principles (ESoP).

The Real-Time Traffic and Travel Information (RTTI) is another priority. The RTTI Working Group of the eSafety Forum aims to identify and remove the obstacles for Europe-wide implementation of RTTI services, such as limited availability of traffic information content, difficulties in defining the roles of the public and private sectors, availability of broadcast capacity and difficulties with business models. The work takes into account the Commission Recommendation on TTI services in Europe[17]. The target set by the RTTI Working Group is that all countries within the European Union agree to extend the installation of the chain of information needed for Real-Time Traffic Information Services in order to cover 80% of the EU population with standardized services by 2010. The group will publish its Final Report by the end of 2005.

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[16] Commission Recommendation of 21 December 1999 on safe and efficient in-vehicle information and communication systems: A European statement of principles on human machine interface OJ L 19 of 25.1.2000

[17] Commission Recommendation, OJ L 199, 24.7.2001, p. 20

The eSafety Forum User Outreach Working Group is investigating actions for communicating to users the benefits of eSafety systems in order to increase user awareness. This is essential to increase user demand for such systems and to improve the business case. The group has analyzed best practices and "lessons learned" from earlier campaigns and user outreach actions, as well as the penetration patterns of some earlier systems. The group proposes to create a "communications platform" of all stakeholders and the creation of an eSafety label. This proposal was included in its first interim report in May 2005 and is currently under discussion in the other eSafety groups, including the group on Implementation Road Maps.

4.2 Other Commission actions

The Commission established a High-Level Group in 2005 for a competitive EU Car Industry. This group, called CARS 21, brings together the European Commission, leaders of the automotive industry, the European Parliament, Trade Unions NGOs and Users, and will develop an integrated strategy for sustainable development of the industry, define the best possible regulatory approaches and set the necessary conditions for innovation.

The Commission will also produce in 2005 a **Mid-Term Review of the Road Safety Action Programme**. This review will evaluate the overall progress towards the objective to reduce the number of fatalities on European roads by half by 2010.

5. CONCLUSIONS

Technologies and systems that can save lives and reduce the severity of injuries caused by road accidents exist today. The eSafety initiative is bringing such systems that are based on the use of advanced ICTs within the reach of road users. eCall is the first: when fully deployed, it could save up to 2500 lives per year and will have substantial socio-economic benefits. It directly improves the quality of life of all our 454 million citizens.

Our challenge is to ensure the large-scale deployment of eCall in Europe. The technology is ready and the industry is committed. Member States must now commit to it and to invest in the necessary infrastructure in their emergency services.

Upgrading of the emergency services comes with a cost, but the estimated benefit-cost ratio is good. Once the investment is done, there will be also additional benefits. The Commission urges the Member States to act immediately on the recommendations of this Communication. The Commission will follow the progress closely and in case the eCall roll-out fails to progress according to the presented Road Map it will consider further measures.