



GSME Position Paper on eCall

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GSM Europe represents 147 mobile operators in 50 countries/areas across Europe, serving around 558 million subscribers. This paper sets out GSM Europe's position on the European Commission's eCall initiative, which is being undertaken in the framework of the eSafety project.

Members of GSM Europe recognize the value of improved response times in emergency situations and are therefore keen to work with the European Commission with a view to assessing the need for and feasibility of eCall services.

We recognize this is a considerable challenge and - as with any public policy issue - it requires a thorough analysis, starting with: (1) assessing the benefits of eCall; and (2) quantifying the impact. In view of the current difficulties being experienced in making progress on eCall, GSME also suggests five concrete recommendations to the European Commission in order to move forward.

1. Assessing the benefits expected from eCall

Mobile operators recognize the value of improved response times to emergency situations. We already contribute substantially to this objective through the high levels of penetration of mobile phones in the European Union. This is now some 93% of the population. It is therefore highly probable that a very high proportion of vehicles driven in Europe already have one or more mobile phones onboard. In the case of an accident, the passengers on board the vehicle or other people driving by, can already use a mobile phone to call emergency authorities. They no longer have to find a fixed phone in order to do so, as was the case in the past. This situation clearly contributes significantly to reducing the time between the occurrence of an accident and the alerting of the emergency authorities. Mobile operators route these calls to the emergency authorities or services and do not charge the end-users directly for these call.

In accordance with the EC Universal Directive and Commission Recommendation of July 2003, caller location information is also provided to emergency services when they receive a call from a person in a distress situation. This helps to localize the place of any emergency.

Against this background, it is now being suggested that the eCall initiative, whereby emergency authorities can be contacted automatically by an in-vehicle system, may improve road safety further in the following situations:

1. The passengers on board cannot place an emergency call because there is no mobile phone onboard and no one driving by;
2. The passengers on board cannot place an emergency call because they are not in a position to use their mobile (i.e. unconscious or severely injured) and no one is driving by;
3. The passengers on board can place an emergency call, but an automatic system launches the emergency call earlier than anyone in the vehicle, or driving by could do.

It is suggested that these improvements are likely to contribute to reducing the time between the occurrence of an accident and the alert of emergency services.



4. As noted in the Commission Communication of September 2005, another benefit of eCall is expected to be the provision of accurate information about the location of the accident site, the location being provided by the in-vehicle system.

This is expected to reduce the time between the alert of the emergency authorities and the arrival of the emergency services on the scene.

In both areas, the benefits of eCall in terms of reduced response time can only be correctly assessed once the benefits already obtained from mobile phone usage are taken into account. GSME is not aware that the studies undertaken to date (e.g. the SEISS final report, quoted in the Commission's Communication of September 2005) have done so. Consequently, GSM Europe is concerned that the benefits of eCall are likely to be smaller than some have anticipated.

It is essential that policy development in this area is based on hard facts and clear evidence. For this reason we believe there is a need for a thorough investigation to determine:

1. current onboard mobile penetration in vehicles;
2. the social and income characteristics of drivers and passengers who do not have mobiles; and
3. the historic effect on response times of increasing mobile penetration.

From this data it should be possible to estimate:

4. the reduction in response times of increasing on-board mobile penetration and whether this is cost effective, given the likely social and income profile of drivers and passengers who do not currently have mobiles;
5. proportion of all accidents where there are mobiles but which go unreported for a period due to their nature / location and which might be reported more rapidly; and
6. the response time which could potentially be saved in these cases.

In this context, GSM Europe draws to the attention of the European Commission a research project undertaken by the GSM Association, the results of which could very usefully contribute to any policy development on eCall: "The Potential Health Impacts of Increased Mobile Phone Use for Contacting Emergency Services in Life Threatening Situations: Proposal for an Epidemiological Study"¹.

2. Quantifying the impact of eCall

A proper impact assessment should obviously also consider costs. It is essential that all costs are taken into account. GSME notes that the SEISS final report fails to take into account the costs of the communication service required to support eCall. The eCall provider – whoever this might be – will not only have to purchase on-board components, but also communication services from a provider of its choice. It is essential that any decision on eCall be proportionate, for each of the stakeholders affected.

We do recognize the difficulty to evaluate the price range for this type of communication service and the nature of the service itself. GSME is unfortunately not in a position to provide any detailed

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inputs to the European Commission on these points. However, the annex to this document nevertheless contains some elements on how eCall could be achieved.

The impact assessment should go beyond merely considering costs. For instance, how would eCall impact on abuses and inadvertent or malicious emergency call usage? Could they increase? How would they be addressed?

No matter how eCall may ultimately be implemented (see our recommendation 4 in section 4), GSME expects that any downside impact of eCall should be minimized as much as possible. For mobile operators, it means that they should 1) continue, as a principle, to be free to choose the best way (including which technological solutions they will use), to transport calls to emergency services, including emergency calls from a vehicle and 2) that the same liability rules as those currently applying to traditional voice emergency calls should apply.

3. The way forward: GSME recommendations

GSM Europe is not convinced that the current eCall MoU is the right way forward for all stakeholders. We therefore wish to put forward five concrete recommendations, which we believe will assist parties to move forward more efficiently.

Recommendation 1

GSM Europe takes this opportunity to welcome the Commission Communication of September 2005, and its call to Member States to promote 112 and e112, as well as to upgrade their PSAPs to handle location enhanced emergency calls. This is clearly an important element of any way forward. **GSM Europe recommends that the European Commission continues to engage with Member States on improving PSAPs performances.** The MoU could be one of the instruments to strengthen this cooperation. This should include reviewing the experience of e112, including assessing the impact of mobile operators deployment of e112 in reducing response time and studying the extent to which PSAPs have upgraded their equipment accordingly.

Recommendation 2

The eCall DG seems to be increasingly dealing with issues which are first and foremost related to 112 and e112, but are not specific to eCall. These issues must be dealt with in a proper policy framework, not in an open "Talk Shop". We understand that, following the meeting of 11 October 2005 with Member States, a working group will be created, under the auspices of the European Commission. **GSME recommends that the European Commission addresses 112 and e112 implementation issues in a separate group limited to relevant stakeholders which contribute to an efficient progress of the work, and not in the eCall DG.** The European Commission ought to research the impact of mobile on improving safety but also the extent to which PSAPs have upgraded their equipment accordingly.

Recommendation 3

GSME recognizes the challenge raised by this project, but is skeptical about the likelihood that the eCall DG will make significant progress from now on. The nature and organization of the eCall DG militate against this. The Group gathers a large number of parties with different backgrounds, agendas and ultimately very different interests; some attend simply for information purposes, whilst others are attracted by prospects of new business opportunities. Many have no clear mandate from their organizations, whilst others do not always clearly represent the view of their entire membership. In addition, there are no agreed rules and procedures. It is worth noting that some organizations have now left the project.

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Another key aspect of the challenge is that participants are also direct competitors within their sectors. This makes it impossible to discuss items such as costs or prices, for obvious competition law reasons. Commercial tensions are also evident across sectors.

This leads **GSME to recommend that the Commission now turns to a new and neutral third party (i.e. a professional consultancy) to finalize the assessment of eCall and produce a recommendation about the feasibility of the project.**

We base this proposal on the CGALIES experience. While there was merit in gathering stakeholders around a table to foster as much consensus as possible during a couple of months, it ultimately required the professionalism and impartiality of an external consultant to produce a document of the quality required to make a good policy recommendation.

Recommendation 4

The European Commission is currently promoting a consensus led solution to realize eCall. GSM Europe certainly supports this approach. However we believe it is currently too optimistic to expect a positive outcome. As all parties familiar with this work would agree, the major road-block is the lack of a 'business case'. No viable business case has yet been identified for a stand alone mass-market eCall functionality.

In view of this, the other solution would be to recommend roll-out of an eCall functionality as and when in-vehicle communications systems are commercially deployed. It would mean a gradual deployment of eCall, but ensure at least some deployment – which the current model does not guarantee in any way. In addition, it would be the most cost efficient solution for society overall.

The gradual approach is the option which has been followed for the implementation of e112 in Europe. It is proving successful. As a comparison, the US have followed the non-gradual approach and are still lagging far behind. Relying once more on the CGALIES experience, **GSME strongly recommends that once eCall has been properly justified (see sections 1&2), the European Commission adopts a gradual approach for eCall.**

Recommendation 5

GSME is concerned that the pressure the European Commission is putting on ETS, along with the 'fire in all directions' strategy of the eCall DG towards all possible standards organizations is not likely to achieve an optimal outcome. In this context, it should be borne in mind that the requirements for eCall have still not been clearly agreed (see section 3 above) and justified, and the overall eCall strategy has not been agreed. This approach may therefore even be counter productive. **GSME therefore recommends that any standardization development is put on hold as long as the required consensus on eCall has not been achieved, and recommendation given about the feasibility of the project.**



ANNEX - Technical inputs on the eCall Communication chain

Irrespective what is decided on the policy side, some technical considerations ought to be taken into account: GSME members have studied the requirements on eCall that are currently available. Their views on three domains of the eCall Communication chain directly relevant to them are set out below under the following headings: 1) the IVS/MNO interface, 2) the MNO domain and 3) the MNO/PSAP domain. This section seeks to reflect the interests of all involved stakeholders. It also sets out GSM Europe's comments 4) on the 'offer' put forward by a representative of ACEA.

1. IVS/MNO Interface Domain

The IVS/MNO interface relates to the transfer of voice and data from the IVS to the MNOs core network. It constitutes the MNOs front end interface. Three issues have to be considered to define this interface:

- the network: GSM, UMTS, ... 3GPP compliant. For the time being, the GSM network looks like a favourite solution. But in a few years time, the wide roll out of far more advanced solutions such as 3G, B3G, etc... will become effective. Advanced solutions have to be considered in today's definition of the IVS/MNO interface.
- the bearer: UUS, USSD, DTMF, ...
- the protocol and the MSD coding: TCP/IP, XML, XML compressed, ASN.1, ...

Each solution has its own pros and cons. For the moment, none of them is a turn-key solution which could be available without substantial adaptations, or which fulfils all eCall requirements without important modifications.

Network: GSM network looks like the preferred solution, but advanced solutions such as 3G, B3G, etc... must also be considered.

Bearer: two solutions can already be excluded:

- Inband Modem: proprietary solution, no open standards available; and
- SMS: not practicable due to latency risks (Store and Forward System).

For the three remaining solutions, further assessment is needed on:

- performances and detailed technical issues;
- costs: investment for implementation of the service and exploitation for running the service;
- compliance with the requirements of eCall service; and
- roadmap for implementation at the European level.

The choice of a bearer (or maybe of several bearers) for an eCall service is a question to be decided by the telecom industry, it does not impact the other stakeholders of the eCall chain.

Protocol and MSD coding: GSM Europe expects the preferred solution to be an IP connection between the MNO and the PSAP, using a protocol as XML, and a MSD coding as ASN.1, which would be the most compact solution. However, such interface has to be agreed with and also implemented by PSAPs. This would require commitment from Member States to upgrade the interfaces of their PSAPs, in order to be compatible.

Without any further inputs related to the IVS, GSME cannot provide more detailed views.



2. MNO Domain

The objective of this analysis is to identify a suitable technical solution for eCall in the MNO domain. The main difficulties of eCall are heavily dependant on the presence/absence of a SIM card in all IVS that remain registered in the network. For MNOs, this would potentially generate high volume of signalling and background traffic (control traffic) from millions of registered SIMs.

As far as 3GPP have standardised procedures that enable emergency call to be made with and without a SIM/USIM, both use cases have been evaluated for eCall.

Several evaluations have been made comprising a wide range of subjects: necessary standards and network upgrades, possible licences costs, necessary tests and integration efforts, possible network infrastructures re-dimension, cost of the physical space for hypothetical new infrastructure, transmission costs, possible new network support efforts, new necessities on distribution and point of sales mobile infrastructure, the customer care formation, etc.

As a conclusion, 'always registered' mobile phones to provide eCall will generate an unacceptable volume of control traffic in mobile networks. GSME therefore recommends for eCall a similar solution to the current standard 112 solution:

- SIM-Less eCall implementation in all IVS systems (as well as currently is possible to make a SIM-Less emergency call from every mobile phone).
- A SIM solution with the lowest possible associated control traffic (control traffic to be generated only when emergency situations were detected), in case of any local administration requires it for eCall after analysing the particularities of this service.

GSME suggest that ETSI and 3GPP should work to identify the optimal solution for both alternatives.

As a reminder, the presence of a SIM is helpful to filter false calls, employing the CLI as a validation data to recognise "good samaritan" calls. It is necessary to address a number of abuses.

Any solution must fit with the interest of the different involved stakeholders. GSME understands that employing the IMEI (International Mobile Equipment Identity assigned to the In Vehicle System), the MSD information delivered and the IMSI (when available) would fulfil the calling line identification procedure required for eCall.

3. MNO/PSAP interface domain

As a matter of general principle, mobile operators are willing to deliver eCall to PSAPs in a format that is standardized, reliable and robust as well, as economical to deploy and operate.

Bearing in mind the differences that currently exist at European and sometime even national level among the PSAPs, any standard interface will have to be flexible enough to adapt to local flavours.



From the mobile operator's perspective, interfacing with the PSAPs is a 'one to many' issue (e.g. for Germany/ France each mobile operator has to deal with up to 1000 different PSAPs, while in Italy PSAPs are managed at provincial level, that is more than 100 PSAPs). On the other hand, PSAPs have to deal with 'many to one/few' (only four to five mobile operator's per country).

Any potential deployment of eCall should be based on standards already adopted for E112, such as MLP of OMA (for location information only). The advantage is that bearer is TCP/IP.

4. Comments on the 'nomadic' solution supported by some ACEA members

A representative of ACEA presented an 'offer' to roll-out a nomadic solution based on linking a mobile device to the IVS by Bluetooth. GSME fails to see the added value of this 'offer' compared with the e112 solution that it currently available. The Bluetooth connection does not provide the security and robustness needed for the transmission of the MSD. The risk for operating errors is multiplied exponentially. The nomadic device would not be crash resistant.... **In conclusion, the 'nomadic' solution could operate in a very limited number of use cases, but cannot be considered as a valid solution for a pan-European implementation.** GSM Europe wishes to underline that any proposal on eCall should be serious and efficient.