

European Standardization in support of eCall



When vehicles crash, lives are at risk. Every minute counts. The faster those injured receive medical attention the better. Fewer will die, and the long-term effects of injuries will be less severe. The consequential disruption to traffic can be minimised and normality swiftly restored. But this will not happen by chance and innovation alone.

Since April 2018 all new model cars and light vans in Europe are required by law to be equipped with 112-eCall (although they may also use third party service provider eCall). Without compromising the privacy of the vehicle occupants in normal driving conditions, in the event of a serious crash (and only then), the 112-eCall system in the vehicle automatically contacts the 112 emergency services, establishes a mobile telephone connection and immediately provides the public service answering point with a 'minimum set of data'. This data identifies the vehicle, the location of the incident, the direction of travel, and may provide additional relevant data (such as the number of occupants at

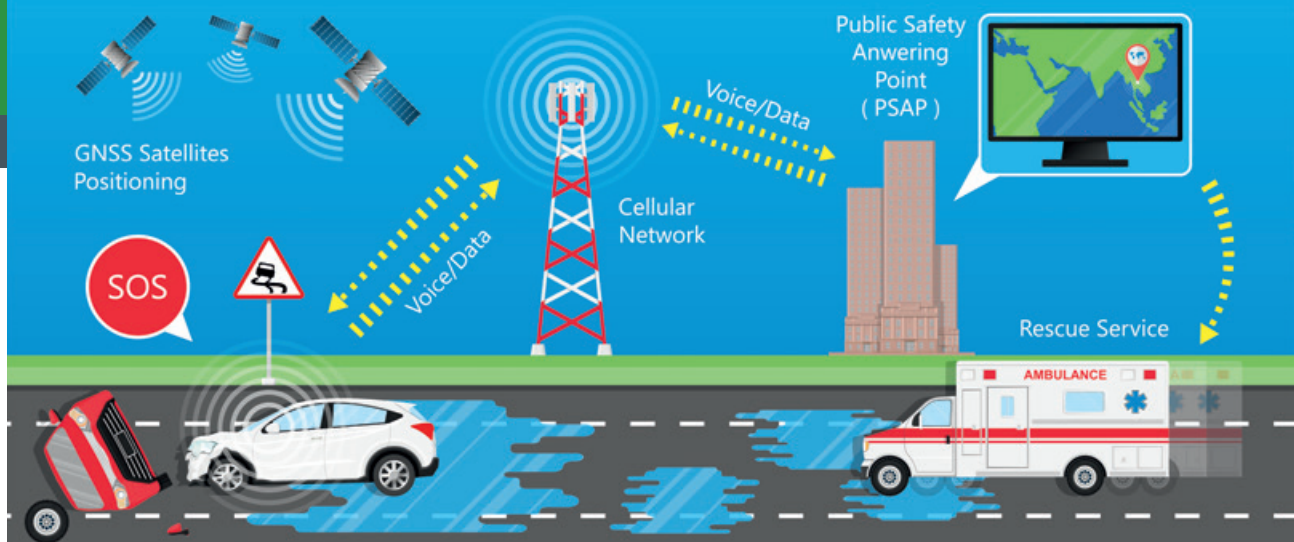
the time of the crash). The emergency services can then talk directly with the occupants of the vehicle. Of course, this has to be undertaken consistently and CEN Standards underpin, and are referenced by, the European eCall Regulations for Category M1 and N1 vehicles. Standards also have an important role to play in expanding eCall to cover all categories of vehicle, and standardising the information exchanged with and between emergency responders. CEN TC278 WG15 ITS - eSafety is the focus and driving point for the development of standards to support the eCall paradigm.

CEN, the European Committee for Standardization, aims to ensure that standards address opportunities, impediments and hazards to enable eCall for all categories of vehicle. CEN develops and adopts European Standards that support Intelligent Transport Systems.

The European Commission recognises the important role played by European Standards in promoting eCall. Its Mandates/Implementing Decisions support the eCall paradigm and provide official requests to CEN, asking them to carry out specific standardization activities.

In addition to European Standards for specific products, CEN is developing and will publish both standards deliverables and guides on expanding eCall coverage to all categories of vehicle. These will be intended both as explanatory and informative publications and supported with tools for experts.

eCall Emergency Call System



MANDATORY 112-eCALL

As from April 2018, all new models category M1 and N1 (cars and light vans) sold in Europe are required to be fitted with eCall. If the in-vehicle system detects a significant crash (possibly because the airbags have triggered, or some other sensor identifies a crash) the eCall system connects to the mobile phone network identifying that it is about to establish an eCall. A 112-eCall is technically a '112 emergency call with data' and is given priority on the network and automatically connected to the most appropriate Public Service Answering Point (PSAP) by the mobile network operator (MNO). As soon as the call is established, the vehicle transmits a

'Minimum Set of Data' (MSD) to the PSAP. This data provides the vehicle identification, location, and direction of travel immediately before the incident. It may also provide the number of passengers, and other vehicle related (non-personal) data. The system then connects the vehicle internal audio systems and the PSAP, and the occupants of the vehicle can speak to each other. CEN Standards underpin the behaviour required by the in-vehicle system, the MNO service, and the PSAP service, and are directly referenced by the European Regulation to determine the requirements on the actors involved.

AFTERMARKET 112-eCALL

For new model vehicles, the in-vehicle 112-eCall system is certified during the vehicle type approval tests. But, of course, this only applies to new model introductions. Now that MNO's and PSAPs are equipped for eCall, in the coming years there is a huge market opportunity for aftermarket systems. Retrofitting vehicles already on the road, or to fit

into new vehicles of existing models, brings the benefit of eCall to all vehicles. CEN TC278 WG15 is developing standards for minimum requirements for these devices in order to ensure that they trigger when they should, and also importantly, do not trigger when they should not.

BENEFITS

- 112 eCall is a free at point of use service that saves lives and helps to mitigate the long term effects of road accident injuries;
- Aftermarket eCall, be it 112-eCall or by a third party service provider, has the potential to expand the benefits of eCall to all vehicles in Europe.

“European Standards underpin eCall regulations, enable the spread of eCall to all categories of vehicle, and enable eCall to migrate to new generations of wireless communications technology”

Bob Williams,
Convenor CEN TC278 WG15



eCALL FOR COMMERCIAL VEHICLES, COACHES, AND BUSES

In the circumstances of the crash of a heavy goods vehicle (HGV), it is of great assistance to the emergency responders in planning their response if they know what cargo is being carried by the HGV. CEN Standards provide the opportunity for the 'Minimum Set of Data' of a commercial vehicle either to identify its load, or to provide a pointer as to where that information may be quickly obtained.

When a coach or bus crashes, the emergency responder will want to know at least if it was carrying

passengers or not, and preferably have some idea of the number of passengers aboard. Clearly, the response will need to be larger in the case of a coach with passengers on-board. CEN TC278 WG15 has drawn up standards to provide the opportunity for the MSD of a coach or bus to provide optional additional data to the public safety answering point to provide such key information.

AGRICULTURAL VEHICLES

Often being used off-road, in remote places, by an unaccompanied driver, agricultural vehicles are special. With pre-set accelerators and power take off (PTO) linkages to rotating machinery, accidents are often very serious. CEN Standards provide the opportunity for the MSD of an agricultural vehicle to send key additional data to the emergency responder.

In all of these use-cases (HGV, coaches, and agricultural vehicles), it is very useful for the assistance provider to know if the vehicle has rolled over, and CEN Standards enable this information to be provided.

BENEFITS

- Emergency responders get key information in addition to the basic 'minimum set of data' which enable them to assess the situation better and send the appropriate response immediately, rather than having to wait for an assessment only after the first responder arrives at the scene.

“ Intelligent Transport Systems have already made major contributions to the reduction of death and accidents on European roads. eCall is a major safety initiative by the European Commission that will save lives and reduce the long term severity of injuries. The European Regulations depend on CEN Standards to achieve consistency of implementation, and we are pleased to see that CEN Standards are also enabling eCall support for additional categories of vehicles and new generations of communications technologies. ”

Claire Depre
European Commission, DG MOVE



eCALL FOR POWERED TWO-WHEELED VEHICLES AND OTHER VEHICLE CATEGORIES

Powered two-wheeled vehicles come in many shapes and sizes. They account for just 2% of road vehicles, but about 20% of road deaths and serious injuries. The challenges to protect riders with eCall are significantly different from those for cars and vans. In a crash the rider is usually separated from the vehicle, often by a significant distance, so talking to him/her is not possible. While identifying a crash in a car or van is relatively simple, like it or not, motor bikes get driven in extreme ways, at acute angles, or tend to fall over: for this reason, it is essential that such situations do not cause false calls to the emergency services. Furthermore, since eCall lasts for the whole life of the vehicle, the equipment has to be protected and rugged enough

to survive the harsh realities of being mounted externally, in all weather conditions, for the whole life of the motorcycle (with motorcycles having a life significantly longer than that of a car or van). CEN Standards provide a variant of eCall especially designed for motorcycles, and specialised conformance test Standards are developed for powered two wheeled vehicles.

For tricycles and quadricycles – the odd categories of vehicle – which come in many shapes and sizes, appropriate CEN Standards are now available to cover them all, and where appropriate, specialised conformance test standards are also being developed.

BENEFITS

- Powered two wheel vehicles, ‘quads’, and ‘trikes’, are special cases, as they carry a disproportionate number of road fatalities and injuries, so providing them with the safety benefits of eCall will be particularly beneficial.

“ eCall is a valuable initiative by the European Commission in the fight to reduce road deaths and injuries. I am pleased that CEN TC278 has made a significant contribution to this initiative and continues to develop a number of standards that broaden the scope of this initiative, including looking to eCall support in the upcoming paradigm of automated and autonomous vehicles. ”

Hans Nobbe
Rijkswaterstaat
& Chairman CEN TC278, Intelligent Transport Systems



CO-EXISTENCE OF 112-eCALL AND 'THIRD PARTY ASSISTANCE PROVIDER' eCALL

112-eCall is a free safety system providing support in the case of a serious crash. Car manufacturers, car clubs, and insurers also offer subscription-based "third party" services that provide a wide range of driver support services, including emergency call support. This is allowed by the Regulation so long as the system defaults

to 112-eCall in event of failure of the third party system, or at any time at the decision of the vehicle keeper. CEN Standards support the interaction between the third party service provider and the PSAP so that it is compatible with eCall.

MIGRATING TO NEW WIRELESS COMMUNICATIONS TECHNOLOGIES

eCall currently uses Circuit Switched cell phone technology to provide its emergency call service. Cell phone technology is moving on to Packet Switched (LTE, 4G, 5G) technologies. CEN

Standards are already in place to support this migration (eCall using IMS), and CEN TC278 WG15 is investigating how such new technologies can be used to further enhance eCall service provision.

BENEFITS

- Packet Switched IMS eCall is faster and more simple (it is not necessary to mute audio equipment in the vehicle), and provides a basis for future enhancement of eCall service provision;
- Third party service provider eCall is a way to rapidly expand the number of vehicles that can benefit from the eCall service.

“ Third party service provider eCall provides a means to rapidly expand the benefits of eCall to more vehicles. It is also important to provide a migration path to new generations of communications technology, and CEN Standards are helping to achieve this. ”

Bernard Flury-Herard
Conseil Général de l'Environnement et du Développement Durable
Ministère de la Transition écologique et solidaire
France



HOW TO GET INVOLVED

Participation in the standardization process allows stakeholders to have a say on the content of draft standards, and enable them to be better informed about developments relating to standards that may be relevant to their area of interest or sector of activity.

Companies, public bodies and other (national) organizations wishing to participate in CEN or CENELEC activities should contact the CEN Member (National Standardization Organization - NSO) or CENELEC Member (National Committee - NC) in their country. Through the NSO or NC, they can participate in the national mirror committee which is responsible for providing input to the relevant Technical Committee (TC) at European level, or be put forward by their NSO to be an active member of a Standardisation Committee/Working Group.

A full list of CEN Members can be found on the CEN website: www.cen.eu

A full list of CENELEC Members can be found on the CENELEC website: www.cenelec.eu

European or international organizations and other stakeholders wishing to participate in standardization activities at European level may apply to become a Partner or Liaison Organization of CEN and/or CENELEC. For further information, please contact:

partners@cencenelec.eu



ABOUT CEN

CEN (European Committee for Standardization) is recognized by the EU and EFTA as one of the European Standardization Organization responsible for developing standards at European level. These standards set out specifications and procedures for a wide range of materials, processes, products and services.

The members of CEN are the National Standardization Bodies of 34 European countries. European Standards (ENs) and other standardization deliverables adopted by CEN are accepted and recognized in strengthening the European Single Market.

European Standards contribute to enhancing safety, improving quality, facilitating cross-border trade and strengthening the European Single Market. They are developed through a process of collaboration between experts nominated by business and industry, research institutes, consumer and environmental organisations and other stakeholders.

CEN works to promote the international alignment of standards in the framework of the technical cooperation agreement with ISO (International Organization for Standardization).

CEN – European Committee for Standardization
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