TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

# CEN/TS 17395

November 2019

ICS 35.240.60

English Version

# Intelligent transport systems - eSafety - eCall for automated and autonomous vehicles

Systèmes de transport intelligents - eSécurité - eCall pour les véhicules automatisés et autonomes

Intelligente Transportsysteme - eSafety - eCall für automatisierte und autonome Fahrzeuge

This Technical Specification (CEN/TS) was approved by CEN on 23 September 2019 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre:  Rue de la Science 23,  B-1040 Brussels**

Ref. No. CEN/TS 17395:2019 E

# Contents

Page

# European foreword

This document (CEN/TS 17395:2019) has been prepared by Technical Committee CEN/TC 278 "Intelligent transport systems", the secretariat of which is held by NEN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

# Introduction

eCall (an emergency call generated either automatically via activation of in-vehicle sensors or manually by the *vehicle occupants*; which, when activated provides notification and relevant location information to the most appropriate *Public Safety Answering Point*, by means of *mobile wireless communications networks*, and carrying a defined standardized *minimum set of data* (MSD) notifying that there has been an incident), as defined in EN 16072, EN 16062, EN 15722, and EN 16454, became a regulated requirement (for new model vehicles of Category M1 and N1 [cars and light vans]) under EN regulation as from April 2018.

CEN/TS 17184 further enables eCall using IMS packet switched networks, and CEN/TS 17182 enables eCall using an ITS-station in a C-ITS equipped vehicle. CEN/TS 17249 parts 2 – 6 extend eCall support to all other categories of vehicle. CEN/TS 17132 enables eCall using satellite. eCall support is now therefore possible for all categories of vehicle and via a wide range of communication media.

However, the advent of automated and autonomous vehicles presents a new challenge to the 'Public Service Answering Point' (PSAP). Traditional eCall is predicated on the paradigm of a dialogue involving the driver of the vehicle / vehicle occupants and a PSAP. In the case of an automated or autonomous vehicle there may be, at the time of the crash, no person on board the vehicle (as it moves between picking up clients in a CCAM paradigm), or there may be persons on board but the vehicle is not under their control, but may be controlled by a centralized system.

When a PSAP receives an eCall from a vehicle, the PSAP attempts to talk to the occupants of the vehicle. At the moment, if it is an automated or autonomous vehicle that is empty as it moves between picking up clients, this will result in a so-called 'silent' call, where the PSAP does not know if the occupants are unconscious, dead, or have left the vehicle, or in this case, that no-one was in the vehicle at the time of the incident. This makes it very difficult for the PSAP to determine what resources to send to the incident. Clearly, a PSAP will want to be able accord a different priority to an empty vehicle than to one carrying people.

Additionally, a PSAP, in dialogue with the driver of an affected vehicle, will often ask the driver (who is the controller of the vehicle) for information about the status of the vehicle, or instruct the driver to switch the car power off, or switch hazard lights on, etc. But if a CCAM vehicle is under the control of a central operator, and not the occupants of the vehicle, the PSAP cannot expect the occupants of the vehicle to have the knowledge or control to be able to respond appropriately.

Therefore, in the case of an automated or autonomous vehicle, the MSD needs to provide additional data to identify that it is an automated/autonomous vehicle, and whether or not it is under the control of an on-board driver or a CCAM operation centre (and if the latter how to contact the operator), the number of persons on board at the time of the incident, and whether or not the vehicle has rolled over.

This document defines an 'Optional Additional Data' (OAD) concept to be sent in the event that an eCall is triggered, as part of the MSD, in the case where the vehicle is an automated vehicle or an autonomous vehicle,

# 1 Scope

This document defines additional data to be sent in the event that an eCall is triggered, as part of the MSD, in the case where the vehicle is an automated vehicle or an autonomous vehicle, to identify:

1) The vehicle is an automated/autonomous vehicle

2) The number of persons on board at the time of the incident

3) Whether or not the vehicle has rolled over

4) Whether the pedestrian airbag has been deployed

5) Whether it is (a) driver initiated automation or (b) centrally controlled automation

6) And if (b) telephone number or internet contact coordinates to contact the vehicle controller.

# 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 15722, *Intelligent transport systems - ESafety - ECall minimum set of data*

EN 16072:2015, *Intelligent transport systems - ESafety - Pan-European eCall operating requirements*

EN 16454, *Intelligent transport systems - ESafety - ECall end to end conformance testing*

EN 16062, *Intelligent transport systems - ESafety - eCall high level application requirements (HLAP) using GSM/UMTS circuit switched networks*

# 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

• IEC Electropedia: available at http://www.electropedia.org/

• ISO Online browsing platform: available at https://www.iso.org/obp

**3.1**
**112-eCall**
circuit switched eCall using the single European emergency call number supporting Teleservice 12

**3.2**
**automated vehicle**
*vehicle* that is 'connected' by wireless communications to other vehicles and the infrastructure combined with sensing its environment and navigating without human input

**3.3**
**autonomous vehicle**
*vehicle* that is sensing its environment and navigating without human input, but may not have wireless connectivity to other vehicles and the infrastructure

**3.4**
**cooperative, connected and automated mobility**
**CCAM**
cooperation, connectivity, and automation are complementary technologies that reinforce each other and enable services such as 'mobility as a service'(MaaS) (a shift away from personally-owned modes of transportation and towards mobility solutions that are consumed as a service) through a unified gateway that creates and manages the trip using an automated vehicle to respond to a request for a journey, drive to the pickup point, collect the passengers and take them to the destination, then move on to its next pick-up point

Note 1 to Entry: The key concept behind MaaS is to offer both the travellers and goods mobility solutions based on the travel needs.

**3.6**
**data**
representations of static or dynamic objects in a formalized manner suitable for communication, interpretation, or processing by humans or by machines

**3.7**
**data concept**
any of a group of data structures (i.e. object class, property, value domain, data elements, message, interface dialogue, association) referring to abstractions or things in the natural world that can be identified with explicit boundaries and meaning and whose properties and behaviour all follow the same rules

**3.8**
**data element**
single unit of information of interest (such as a fact, proposition, observation, etc.) about some (entity) class of interest (e.g. a person, place, process, property, concept, state, event) considered to be indivisible in a particular context

**3.9**
**driver**
operator in control of the vehicle and managing its movements on the road

**3.10**
**eCall**
emergency call generated either automatically via activation of in-vehicle sensors or manually by the vehicle occupants; when activated it provides notification and relevant location information to the most appropriate Public Safety Answering Point, by means of mobile wireless communications networks, carries a defined standardized minimum set of data (MSD) notifying that there has been an incident that requires response from the emergency services, and establishes an audio channel between the occupants of the vehicle and the most appropriate Public Safety Answering Point

**3.11**
**eCall service**
end-to-end emergency service to connect occupants of an affected vehicle to the most appropriate PSAP via an audio link across a PLMN together with the transfer of a minimum set of data to the PSAP

**3.12**
**eCall transaction**
establishment of a mobile wireless communications session across a public wireless communications network and the transmission of a minimum set of data from a vehicle to a Public Safety Answering Point and the establishment of an audio channel between the vehicle and the PSAP