



SLOVENSKI STANDARD

SIST-TS CEN/TS 17249-3:2019

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Intelligentni transportni sistemi - e-Varnost - 3. del: e-Klic za medkrajevne in mestne avtobuse

Intelligent transport systems - eSafety - Part 3: eCall for Coaches and buses

Intelligente Verkehrssysteme - ESicherheit - Teil 3: ECall für Reisebusse und Busse

Systèmes de transport intelligents - eSafety - eCall pour les autocars et autobus

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**Intelligent transport systems - eSafety - Part 3: eCall for
Coaches and buses**

Systèmes de transport intelligents - eSafety - Partie 3 :
eCall pour les autocars et autobus

Intelligente Verkehrssysteme - ESicherheit - Teil 3:
ECall für Reisebusse und Busse

This Technical Specification (CEN/TS) was approved by CEN on 12 October 2018 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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (CEN/TS 17249-3:2018) 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.

NOTE This document is complementary to EN 16072 and EN 15722 and presents adaptation requirements for the provision of eCall for Coaches and Buses.

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CEN/TS 17249-3:2018 (E)

Introduction

As a result of European Regulation, from 2018, all new model Category M1/N1 vehicles will be equipped with 112- eCall. Other model Category M1/N1 vehicles may be voluntarily equipped with *112-eCall*.

The current eCall Regulation covers only M1 and N1 Category vehicles (cars and vans). The European Commission's "ICT Rolling Plan (2017) states the objective "*Action 1 Develop technical specification/standards for the implementation of eCall in vehicles of categories other than M1 and N1 and for other user types, taking into account requirements included within type approval regulation as well as ongoing activities in this area (pilots, CEF,...)*." And goes on to explain "*...for the extension to other vehicles types and services, such as Heavy Duty Vehicles, Power Two Wheelers or Hazardous Goods tracking, and other classes of vulnerable road users*".

See CEN/TR 17249-1 for context.

The EC CEF project I_HeERO has also addressed the issues relating to eCall for HGVs, coaches and buses and vehicle centric solutions for powered two wheel vehicles (P2W) and have passed these results to CEN/TC 278 PT1507 who are charged to provide specifications for the provision of eCall for Heavy Goods Vehicles, coaches and buses, agricultural tractors, and powered two-wheel vehicles.

Coaches and *buses* present two different challenges for eCall, and, despite the fact that the same vehicle model could be used either as a *coach* or a *bus*, require different information. In the case of *long distance coaches*, European regulations require that *passengers* use seat belts, so it is possible to establish the number of seats in use, which will approximate to the number of *passengers* on board. *Coach* trips are usually booked in advance, and the *coach* operator therefore also has a *passenger list* with information that could be very valuable to the emergency responders, especially for *coaches* operating abroad, but must respect privacy regulations. *Bus* trips, by comparison, involve semi-random unplanned *Hop-on/hop-off* characteristics, with little or no use of seat belts.

This document provides determination for the provision of eCall to *coaches* and *buses*. As with the existing provisions for eCall for Category M1/N1 vehicles, these are specified within the paradigm of being OEM fit equipment supplied with new vehicles.

The provision of eCall for vehicles via the aftermarket (post sale and registration) will be the subject of other work, and in respect of the operational requirements for any such aftermarket solutions for *coaches* and *buses*, will use the specifications of this document as a principle reference point.

1 Scope

In respect of *112-eCall* (operating requirements defined in EN 16072), this document defines additional specifications for the provision of eCall for *coaches* and *buses*.

As with the existing provisions for eCall for Category M1/N1 vehicles, these are specified within the paradigm of being OEM fit equipment supplied with new vehicles.

NOTE 1 The provision of eCall for vehicles via the aftermarket (post sale and registration) will be the subject of other work, and in respect of the operational requirements for any such aftermarket solutions for *coaches* and *buses*, will use the specifications of this document as a reference point.

NOTE 2 The *112-eCall* paradigm involves a direct call from the vehicle to the *most appropriate PSAP*. (Third party service provision by comparison, involves the support of an intermediary third party service provider before the call is forwarded to the PSAP.) The specifications herein relate only to the provision of *112-eCall* or *IMS-112-eCall*, and do not provide specifications for third party service provision of eCall, although in the case of *112-eCall* or *IMS-112-eCall* for *coaches*, links to third party provision of service aspects (such as *passenger lists*) may be required.

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

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

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

CEN/TS 17184, *Intelligent transport systems – eSafety – eCall High level application Protocols (HLAP) using IMS packet switched networks*

CEN/TS 17240, *Intelligent transport systems – ESafety – ECall end to end conformance testing for IMS packet switched based systems*

CEN/TR 17249-1:2018, *Intelligent transport systems – eSafety – Part 1: Extending eCall to other categories of vehicle*

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 <http://www.iso.org/obp>

3.1

112-eCall

circuit switched eCall using the single European emergency call number supporting Teleservice 12

CEN/TS 17249-3:2018 (E)**3.2****bus**

coach making frequent stops with semi-random unplanned Hop-on/hop-off characteristics, with little or no use of seat belts; passengers may sit or stand and passenger movement is allowed

3.3**coach**

vehicle of UNECE Category M2 or M3, designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat

3.4**collision**

bus or coach impacts with a vehicle or object or is impacted by another vehicle or object

3.5**data**

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

3.6**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

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3.7**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

3.8**driver**

operator in control of the coach or bus and managing its movements on the road

3.9**eCall**

emergency call which is generated either automatically via activation of in-vehicle sensors or manually by the vehicle occupants, and which, when activated, 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

3.10**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

3.11**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

3.12**Hop-on/hop-off**

random ingress/egress to/from a bus, usually at predetermined access points (bus stops)

3.13**IMS-112-eCall**

pan-European eCall provided using IMS over packet switched cellular wireless networks (e.g. E-UTRAN/LTE, etc.)

3.14**identifier**

label, symbol or token that names or identifies an entity or a collection of data or the means of designating or referring to a specific instance of a data concept

3.15**in-vehicle system (IVS)**

equipment within the vehicle that manages the eCall session and provides or has access to in-vehicle data required for the minimum set of data and any other data that is to be sent as part of or complementary to the minimum set of data to effect the eCall transaction via a public mobile wireless communications network providing a link between the vehicle and a means of enacting the eCall service via a public mobile wireless communications network

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3.16**long distance coach**

vehicle of UNECE Category M2 or M3, designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat and which is being used for interurban or cross country journeys or tours and does not support Hop-on/hop-off stops

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3.17**minimum set of data**

standardized data concept comprising data elements of relevant vehicle generated data essential for the performance of the eCall service

Note 1 to entry: Adapted from EN 15722.

3.18**mobile wireless communications network**

wireless communications network with homogeneous handover between network access points

3.19**most appropriate PSAP**

PSAP defined beforehand by responsible authorities to cover emergency calls from a certain area or for emergency calls of a certain type

Note 1 to entry: See also PSAP.

Note 2 to entry: A number of different instantiations of PSAP service are supported within this document. A PSAP can be a Public Authority or a private *service provider*^(3.27) operating on behalf of the responsible authorities.

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3.20

network access point

beacon, antenna or similar source of signal propagation and receipt together with equipment to manage communication sessions with users operating within the operating reach of the network access point and provide connectivity for the users within the operating reach of the single access point to a wider communications network

Note 1 to entry: A *network access point* may but does not need to provide homogeneous or heterogeneous handover to another *network access point*.

3.21

optional additional data

'optional' additional datafield contained within and transmitted as part of the MSD

Note 1 to entry: Any additional data element(s) shall each consist of two parts:

- a) a relative 'object identifier' (OID); and
- b) the data content.

3.22

passenger

person who is travelling in a coach or bus, but who is not driving it or working on it

3.23

passenger list

itemized written sequence of names of persons who are travelling on a specified journey on-board a coach, and in some circumstances associated relevant information

3.24

PSAP (Public Safety Answering Point)

physical location working on behalf of the national authorities where emergency calls are first received under the responsibility of a public authority or a private organization recognized by the national government

Note 1 to entry: See also *most appropriate PSAP*.

Note 2 to entry: A number of different instantiations of PSAP service are supported within this document.

3.25

public mobile wireless communications network

mobile wireless communications network with access to a public telecommunications network

3.26

rollover

overturning of a vehicle onto its side or upside down

3.27

service provider

physical and functional component responsible for providing telematics based services to its subscribers

3.28

wireless communications network

network operating using an air-interface capable of bi-directional transfer of data and or voice

4 Symbols and abbreviations

CEF	Connecting Europe Facility transport (European Commission)
CS	circuit switched
EC	European Commission
EN	European Standard
GSM	global system for mobile communications
HLAP	High Level Application Protocols
ICT	Information and Communications Technology
IETF	Internet Engineering Task Force
IMS	IP-Multimedia Subsystem
IETF	Internet Engineering Task Force
I_HeERO	Infrastructure_Harmonized eCall EuRoepan pilOt
IVS	<i>in-vehicle system</i> _(3.15)
MSD	<i>minimum set of data</i> (EN 15722)
OAD	<i>optional additional data</i> _(3.21) (concept)
OEM	original equipment manufacturer
OID	object identifier
P2W/P2WV	powered two wheel vehicle
PSAP	<i>Public Safety Answering Point</i> <small>https://standards.iteh.ai/catalog/standards/sist/5218af19-841d-43bf-ad95-a7036445bb98/sist-ts-cen-ts-17249-3-2019</small>
TPS	third party service
TR	Technical Report
TS	Technical Specification
UMTS	universal mobile telecommunication system
UNECE	United Nations Economic Commission for Europe
URI	Uniform Resource Indicator
URL	Uniform Resource Locator
UTRAN	UMTS Terrestrial Radio Access Network
VIN	Vehicle Identification Number

5 Conformance

Conformance to the requirements of this document for eCall using circuit switched wireless cellular communications systems are to be found in EN 16062 and EN 16454.

Conformance to the requirements of this document for eCall using packet switched IMS are to be found in CEN/TS 17184 and CEN/TS 17240.

This document makes no conformance specifications or requirements in respect of TPS *eCall* operating requirements, and conformance requirements in respect of TPS *eCall* can be found in EN 16102 and EN 16454.