



SLOVENSKI STANDARD SIST-TS CEN/TS 17234:2019

01-februar-2019

Inteligentni transportni sistemi - e-Varnost - eKlic: Preizkusi, ki centrom za usklajevanje reševanja (PSAPs) omogočajo prikaz skladnosti in zmogljivosti

Intelligent transport systems - eSafety - eCall: Tests to enable PSAPs to demonstrate conformance and performance

Intelligente Verkehrssysteme - eSicherheit - eCall: Prüfungen, die Rettungsleitstellen die Darstellung von Konformität und Leistung ermöglichen

Systèmes de transport intelligents - eSécurité - eCall: Essais pour permettre aux PSAPs de démontrer leur conformité et leur performance

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Ta slovenski standard je istoveten z: **CEN/TS 17234:2018**

ICS:

03.220.20	Cestni transport	Road transport
35.240.60	Uporabniške rešitve IT v prometu	IT applications in transport

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TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

CEN/TS 17234

November 2018

ICS 03.220.20; 35.240.60

English Version

**Intelligent transport systems - eSafety - eCall: Tests to
enable PSAPs to demonstrate conformance and
performance**

Systèmes de transport intelligents - eSécurité - eCall:
Essais pour permettre aux PSAPs de démontrer leur
conformité et leur performance

Intelligente Verkehrssysteme - eSicherheit - eCall:
Prüfungen, die Rettungsleitstellen die Darstellung von
Konformität und Leistung ermöglichen

This Technical Specification (CEN/TS) was approved by CEN on 15 July 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.

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.

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Contents	Page
European foreword	4
Introduction.....	5
1 Scope	6
2 Normative references	6
3 Terms and definitions.....	7
4 Abbreviations.....	11
5 Technical requirements.....	12
5.1 Overview of eCall service provision.....	12
5.2 Technical set-up of GSM/UMTS eCall.....	12
5.3 Technical set-up of an IMS eCall.....	13
6 Conformity assessment procedures for PSAPs	13
6.1 Legal requirements.....	13
6.2 Procedures	14
7 Generic conformity assessment procedures for PSAPs — Generic eCall component assessment — Conformance test.....	14
8 CS conformity assessment procedures for PSAPs (GSM/UMTS) — eCall Component Assessment — Conformance Test.....	15
9 PS conformity assessment procedures for PSAPs (IMS) — eCall Component Assessment — Conformance Test.....	16
10 Optional Additional Data — Context.....	16
10.1 General	16
10.2 CTP 3.3.1 — PSAP supports OAD	17
10.3 CTP 3.3.2 — PSAP supports most recent OAD	18
11 Performance testing	18
11.1 General	18
11.2 Key performance indicators	20
11.2.1 General	20
11.2.2 Performance levels	20
11.3 Tests for suppliers of equipment to PSAPs.....	21
11.4 MSD transmission time for different channel conditions (GSM/UMTS CS) (OPTIONAL)	21
12 Conformance Requirements.....	22
12.1 GSM/UMTS MSD transmission time (OPTIONAL)	22
12.1.1 General	22
12.1.2 Test purpose.....	24
12.1.3 Method of test	24
12.2 Suitability for use (OPTIONAL).....	26
12.2.1 General	26
12.2.2 PSAP Key Performance Indicators (KPIs) (OPTIONAL)	26
13 Security — Context.....	31
14 Test Procedures — Definition of Test plan	31

14.1	Planning of Test drives	31
14.2	IVS	31
14.3	Number of Calls	31
14.4	PSAP	32
14.5	Location	32
14.6	Execution	32
14.7	Result and analysis	32
	Bibliography	33

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[SIST-TS CEN/TS 17234:2019](https://standards.iteh.ai/catalog/standards/sist/df8784d5-eb2e-4167-892f-a24d9d39d8cc/sist-ts-cen-ts-17234-2019)

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CEN/TS 17234:2018 (E)**European foreword**

This document (CEN/TS 17234:2018) 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.

This document is complementary to EN 15722, EN 16072, EN 16062, and EN 16454.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Introduction

eCall is an emergency call generated either automatically via activation of in-vehicle sensors or manually by the *vehicle occupants* (3.23); when activated it provides notification and relevant location information to the most appropriate *Public Safety Answering Point* (3.21), by means of *mobile wireless communications networks* (3.16), carries a defined standardized *minimum set of data* (3.15) (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*. *eCall* has been regulated to be installed and available in all new model vehicles in Europe from 2018. Mobile Network operators have agreed to forward these calls, and 'Public Safety Answering Points' are required by European Regulation to be able to receive *eCalls* by 2017. A large aftermarket is also expected, and vehicle manufacturers are also expected to voluntarily equip their existing model vehicles as well as new models. *eCall* currently only covers light vehicles, but is expected to be expanded to cover HGVs, long distance coaches, and powered two vehicle vehicles in the near future. *eCall* is expected to be a significant contributor in the fight to reduce road deaths and serious injuries.

eCall is regulated in the European Commission Recommendation 2011/750/EU of 8 September 2011 on support for an EU-wide *eCall* service in electronic communication networks for the transmission of in-vehicle emergency calls based on 112 (3.1) (112-eCall), Decision no 585/2014/EU of the European Parliament and of the council of 15 May 2014 on the deployment of the interoperable EU-wide *eCall service* (3.9); Commission Delegated Regulation (EU) no 305/2013 of 26 November 2012 supplementing Directive 2010/40/EU of the European Parliament and of the council with regard to the harmonized provision for an interoperable EU-wide eCall, and Regulation (EU) 2015/758 of the European Parliament and of the Council of 29 April 2015 concerning type approval requirements for the deployment of the *eCall in-vehicle system* (3.14) based on the 112 (3.1) service and amending Directive 2007/46/EC.

These Regulations refer to, and are dependent on, the CEN Standards EN 15722:2015, *Intelligent transport systems — eSafety — eCall minimum set of data (MSD)*; EN 16062:2015, *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 16102:2011, *Intelligent transport systems — eCall — Operating requirements for third party support*; EN 16454:2015, *Intelligent transport systems — eSafety — eCall end to end conformance testing*. Standards are also in development to support eCall using packet switched networks using IMS, eCall using cooperative ITS 'ITS Stations, and standards to broaden the scope of *eCall* to other classes of vehicle. ETSI standards deliverables for communications networks provide the communications specifications that underpin these application level standards.

EN 16454 provides the basis for conformance tests for all actors in the *eCall* chain.

Crucial to the success of *eCall* is the response offered by the 1st level PSAP and subsequent responses from the emergency response chain.

Building on, and consistent to EN 16454, this deliverable provides a suite of conformance and performance tests to enable PSAPs to claim conformance to the regulations and *eCall* Standards.

Unlike EN 16454, this standards deliverable also takes into account standards deliverables in development to carry *eCall* over packet switched networks using IMS.

CEN/TS 17234:2018 (E)**1 Scope**

The scope of this document is to define conformance and performance tests to demonstrate whether a PSAP is in compliance with the *eCall* Regulations and Standards.

This deliverable:

- a) identifies the MANDATORY tests specified within EN 16454 that are appropriate for a PSAP to demonstrate its conformance to EN 16454 in accordance with European Commission Delegated Regulation (EU) No 305/2013;
- b) specifies tests to verify that a PSAP has procedures in place to identify and decode registered optional additional *data concepts* (3.5) included in the *Minimum set of data* (3.15);
- c) provides OPTIONAL tests to measure aspects of PSAP performance in handling aspects of *eCall*.

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 15722:2015, *Intelligent transport systems — eSafety — eCall minimum set of data (MSD)*

EN 16062:2015, *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 16102:2011, *Intelligent transport systems — eCall — Operating requirements for third party support*

EN 16454:2015, *Intelligent transport systems — eSafety — eCall end to end conformance testing*

CEN/TS 17148, *Intelligent Transport Systems — eSafety — ProForma eCall Agreement between TPSP and PARES*

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*

ETSI TS 100 910 V8.20.0 (2005-11), *Digital cellular telecommunications system (Phase 2+); Radio Transmission and Reception (3GPP TS 05.05 version 8.20.0 Release 1999)*

ETSI TS 103 412 V1.1.1 (2016-04), *Mobile Standards Group (MSG); Pan-European eCall end to end and in-band modem conformance testing; Prose test specification*

ETSI TS 121 133, *Universal Mobile Telecommunications System (UMTS); 3G Security; Security Threats and Requirements (3G TS 21.133 version 3.1.0 Release 1999)*

ETSI TS 122 101, *Universal Mobile Telecommunications System (UMTS); Service aspects; Service principles (3G TS 22.101 version 3.10.0 Release 1999)*

ETSI TS 126 269, *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); eCall data transfer; In-band modem solution; Conformance testing (3GPP TS 26.269 version 8.0.0 Release 8)*

ETSI TR 126 969, *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); eCall data transfer; In-band modem solution; Characterization report (3GPP TR 26.969 version 9.0.0 Release 9)*

ETSI TS 151 010-1 V12.5.0 (2015-09), *Digital cellular telecommunications system (Phase 2+); Mobile Station (MS) conformance specification; Part 1: Conformance specification (3GPP TS 51.010-1 version 12.5.0 Release 12)*

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

single European emergency call number supporting Teleservice 12

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[SOURCE: ETSI TS 122 003] standards.iteh.ai/catalog/standards/sist/d8784d5-cb2e-4167-892f-a24d9d39d8cc/sist-ts-cen-ts-17234-2019

3.2

cellular network

wireless communications network consisting of multiple adjacent access points (cells) with the capability of homogeneous transfer of a communications session instance to an adjacent cell without significant interruption to the session

3.3

Conformity Assessment procedures for PSAPs

procedures as defined in the delegated regulation No. 305/2013 (Article 4) whereby 'Member States shall designate the authorities that are competent for assessing the conformity of the operations of the *eCall* PSAPs with the requirements listed in Article 3 and shall notify them to the Commission' and whereby 'Conformity assessment shall be based on the part of the standard 'Intelligent transport systems — eSafety — eCall end to end conformance testing' (EN 16454) that relates to PSAPs conformance to pan-European *eCall*'

CEN/TS 17234:2018 (E)

3.4

data

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

Note 1 to entry: In packet switched networks, voice is carried in packets of data.

3.5

data concept

any of a group of *data* (3.4) structures (i.e. object class, property, value domain, *data elements* (3.6), 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

3.6

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

3.7

E112

emergency communications service using the single European emergency call number, *112* (3.1), which is enhanced with location information of the calling user and which is not actually used directly in the communication but sets indicators in the IMS call header that identifies the call as an emergency call of type 'eCall' to the MNO

3.8

eCall

emergency call which is generated either automatically via activation of in-vehicle sensors or manually by the *vehicle occupants* (3.23) and which, when activated, provides notification and relevant location information to the most appropriate *Public Safety Answering Point* (3.21), by means of *mobile wireless communications networks* (3.16), carries a defined standardized *minimum set of data* (3.15) (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*

3.9

eCall service

end-to-end emergency service to connect occupants of an affected vehicle to the *most appropriate PSAP* (3.17) via an audio link across a PLMN together with the transfer of a *minimum set of data* (3.15) to the PSAP

3.10

eCall transaction

establishment of a mobile wireless communications session across a public *wireless communications network* (3.24) and the transmission of a *minimum set of data* (3.15) from a vehicle to a *Public Safety Answering Point* (3.21) and the establishment of an audio channel between the vehicle and the PSAP

3.11**emergency control centre**

unit which deals with emergency calls and which has the capacity to consider professionally the need for response, and which has the provision to mobilize the needed resources to deal with the emergency in question

3.12**emergency call response centre**

term used in ITS Implementation Directive to mean *Public Safety Answering Point* (3.21) (PSAP)

3.13**in-vehicle equipment**

equipment within the vehicle that provides or has access to in-vehicle *data* (3.4) required for the *minimum set of data* (3.15) 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* (3.10) via a *public mobile wireless communications network* (3.20) providing a link between the vehicle and a means of enacting the *eCall service* (3.9) via a *public mobile wireless communications network*

3.14**in-vehicle system****IVS**

in-vehicle equipment (3.13) together with the means to trigger, manage and effect the *eCall transaction* (3.10)

3.15**minimum set of data**

standardized *data concept* (3.5) comprising *data elements* (3.6) of relevant vehicle generated *data* (3.4) essential for the performance of the *eCall service* (3.9)

[SOURCE: EN 15722:2015]

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3.16**mobile wireless communications network**

wireless communications network (3.24) with homogeneous handover between *network access points* (3.19)

3.17**most appropriate PSAP**

destination for *eCall* 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 European Standards Deliverable. A PSAP can be a Public Authority or a private *service provider* (3.22) operating on behalf of the responsible authorities.

3.18**network access device****NAD**

see *mobile wireless communications network* (3.16) device

CEN/TS 17234:2018 (E)

3.19

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.

3.20

public mobile wireless communications network

mobile wireless communications network (3.16) with access to a public telecommunications network

3.21

Public Safety Answering Point**PSAP**

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* (3.17).

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

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3.22

service provider

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

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3.23

vehicle occupant(s)

person(s) inside the vehicle

3.24

wireless communications network

network operating using an air-interface capable of bi-directional transfer of *data* (3.4) and or voice

Note 1 to entry: There are different types of wireless communications such as PAN, LAN, *cellular network* (3.2), etc.. Particularly, some wireless communications are circuit switched (e.g. GSM,m UMTS), while others are packet switched (e.g. E-UTRAN, LTE, 4G, etc.).