SLOVENSKI STANDARD
SIST EN 16072:2023

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Nadomešča:
SIST EN 16072:2015

Inteligentni transportni sistemi - e-Varnost - Zahteve za delovanje vseevropskega elektronskega klica v sili

Intelligent transport systems - ESafety - Pan-European eCall operating requirements

Intelligente Verkehrssysteme - eSicherheit - Betriebsanforderungen für den gesamteuropäischen eCall

Systèmes de transport intelligents - eSafety - Exigences opérationnelles du service eCall paneuropéen

Ta slovenski standard je istoveten z: **EN 16072:2022**

ICS:

03.220.20	Cestni transport	Road transport
13.200	Preprečevanje nesreč in katastrof	Accident and disaster control
35.240.60	Uporabniške rešitve IT v prometu	IT applications in transport

SIST EN 16072:2023 **en,fr,de**

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EUROPEAN STANDARD

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Supersedes EN 16072:2015

English Version

Intelligent transport systems - ESafety - Pan-European eCall operating requirements

Systèmes de transport intelligents - eSafety - Exigences opérationnelles du service eCall paneuropéen

Intelligente Verkehrssysteme - eSicherheit - Betriebsanforderungen für den gesamteuropäischen eCall

This European Standard was approved by CEN on 24 July 2022.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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, Türkiye 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

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European foreword

This document (EN 16072:2022) has been prepared by Technical Committee CEN/TC 278 "Intelligent transport systems", the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2023, and conflicting national standards shall be withdrawn at the latest by March 2023.

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 supersedes EN 16072:2015.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association.

The following revisions have been introduced:

— Subclause 7.7.3 has been added to inform the PSAP operator about undecoded MSD data;

— Subclause 7.7.1, 7.12.5 and 7.13.1 have been enhanced with generic requirements, which have been removed in EN 16062:2022, Clause 7.7;

— Subclause 7.10.1 has been adapted to better cover electrical vehicles;

— Subclause 7.17.3 has been adapted to comply with regulations;

— Subclause 11.3 has been changed to avoid conflicting requirements and renumbered to 10.2;

— Removed references to the type of (mobile) networks (e.g. circuit switched (GSM and UMTS) or packet switched (aka IMS eCall) where it caused text to be less readable or duplicated;

— Added clarification or reworded text to improve readability.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: 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, Türkiye and the United Kingdom.

Introduction

The scale of death and injury on roads in Europe needs to be fully comprehended to understand the need for 'Emergency Call' (eCall). In 2008 there were 38 900 fatalities in EU-27. The figure for 2009 is around 34 500 fatalities. The trend 2001 to 2008 is around 5 % reduction annually. Road accident injuries are in the region of 1,7 million (2008). Roads remain unsafe and further efforts are needed. The pan-European in-vehicle emergency call, eCall, is estimated to have the potential to save up to 2 500 fatalities annually in the EU when fully deployed and furthermore to reduce the severity of injuries, to bring significant savings to the society in and to reduce human suffering.

Emergency calls made from vehicles or mobile telephones using wireless technologies can assist with the objectives of significantly reducing road deaths and injuries, but drivers often have poor (imprecise) location- awareness, especially on interurban roads or abroad. Additionally, in many situations, the car occupants may not be in a position to call using a normal mobile phone.

The situation is worse for those travelling abroad: A high (and increasing) number of vehicles travelling outside their home country is thus also contributing to the need for automated emergency call system in vehicles. In EU there are over 100 million trips to another EU country per year (EU-15). 65 % people feel less protected while abroad and most do not know which number to call in an emergency (in some countries over 60 %). Language problems are pertinent and may render proper communication difficult. Yet, in the most crucial cases, the victim(s) may not be able to call because they have been injured/trapped, do not know the local number to call and in many cases, particularly in rural situations and late at night, there may be no witnesses, who happen to have a mobile phone and a sense of community.

eCall, in the context of 'Road Traffic and Transport Telematics' (otherwise known as 'Intelligent Transport Systems' or 'ITS'), can be described as an 'automatic or user instigated system to provide notification to Public Safety Answering Points (PSAP), by means of wireless communications, that a vehicle has crashed, and to provide coordinates, a defined Minimum Set of Data, and where possible a voice link to the PSAP'.

The objective of implementing the pan-European in-vehicle emergency call system (eCall) is to automate the notification of a traffic accident, wherever in the European Union and associated countries, with the same technical standards and the same quality of services objectives of other emergency (TS12) services.

Definition of the Minimum Set of Data, the communications media and means of transferring the data are not specified in this document.

This document specifies the generic operational requirements for the provision of an eCall service. The practical provision and operation of eCall service and equipment is dependent on the communications medium being available throughout the lifetime of equipment installed in vehicles.

NOTE   The term PSAP, which is most widely used in the eCall documentation, European Commission documents etc., equates to the term emergency call response centre.

The European Committee for Standardization (CEN) draws attention to the fact that it is claimed that compliance with this document may involve the use of patents concerning eCall given in this document.

The patents held may refer to the implementation of eCall in general using the network access device referenced (but not defined) in this document, but do not specifically directly refer to any of the application specification clauses defined herein.

CEN takes no position concerning the evidence, validity and scope of these patent rights.

The holder of these patent rights has ensured to CEN that he/she is willing to negotiate licenses under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holders of these patent rights are registered with CEN. Information may be obtained from:

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Mr. Thomas R. Rouse

VP QTL Patent Counsel QUALCOMM Incorporated

5775 Morehouse Drive

San Diego, California 92121

Phone: +1-858-587-1121

Fax: +1-858-658-2503

Email: trouse@qualcomm.com

URL: www.qualcomm.com

Mr. Thomas W. Davis Jr. General Council AIRBIQUITY Incorporated

1011 Western Avenue, Suite 600

Seattle, Washington 98104

USA

Phone: +1.206.219.2700

Fax: +1.206.842.9259

Toll-Free: +1.888.334.7741

Email: tdavis@airbiquity.com

URL: www.airbiquity.com

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

1 Scope

The objective of implementing the pan-European in-vehicle emergency call system (eCall) is to automate the notification of a traffic accident, wherever in Europe, with the same technical standards and the same quality of services objectives by using 'Public Land Mobile Networks'(PLMN) (such as GSM and UMTS), which supports the European pre-assigned emergency destination address (see normative references) and to provide a means of manually triggering the notification of an incident.

This document specifies the general operating requirements and intrinsic procedures for in-vehicle emergency call (eCall) services in order to transfer an emergency message from a vehicle to a Public Safety Answering Point (PSAP) in the event of a crash or emergency, via an eCall communication session and to establish a voice channel between the in-vehicle equipment and the PSAP.

Private third party in-vehicle emergency supporting services may also provide a similar eCall function by other means. The provision of such services are defined in EN 16102, and are outside the scope of this document.

The communications protocols and methods for the transmission of the eCall message are not specified in this document.

This document specifies the operating requirements for an eCall service. An important part of the eCall service is a Minimum Set of Data (MSD). The operating requirements for the MSD are determined in this document, but the form and data content of the MSD is not defined herein. A common European MSD is determined in EN 15722.

This document does not specify whether eCall is provided using embedded equipment or other means (for example in the case of aftermarket equipment).

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 15722:2020, *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 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*

EN ISO 24978, *Intelligent transport systems - ITS Safety and emergency messages using any available wireless media - Data registry procedures (ISO 24978)*

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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 https://www.electropedia.org/

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

3.1
112
single European emergency call number supporting *Teleservice 12*

3.2
E112
emergency communications service using the single European emergency call number, 112, which is enhanced with location information of the calling user

3.3
association
data concept; structural relationship

3.4
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

3.5
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

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, *association*, state, event) considered to be indivisible in a particular context

3.8
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* 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*

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3.9
eCall generator
occupant of a vehicle or equipment within a vehicle that has cause to trigger an *eCall transaction* by automatic or manual means

3.10
eCall identifier
one of two information element bits (flags) included in the emergency call set-up message that may be used by the mobile network to filter and route automatically and manually initiated *eCalls* to a designated PSAP

3.11
eCall in-vehicle system
in-vehicle equipment together with the means to trigger, manage and effect the *eCall transaction*

3.12
eCall service
capability of *in-vehicle equipment* to be an *eCall generator*, triggering of an *eCall transaction*, intent of a PSAP to be an *eCall* responder and provision of that response

3.13
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 a voice channel between the vehicle and the PSAP

3.14
eCall trigger
signal emanating from within the vehicle to the *eCall in-vehicle equipment* which requests to start an *eCall transaction*

3.15
emergency call response centre
term used in ITS Implementation Directive to mean 'Public Safety Answering Point' (PSAP)

3.16
geographic information service/system (GIS)
system or service that provides spatial data, management, retrieval, analysis, and visualization functions designed to capture, store, manipulate, analyse, manage, and present all types of geographical data

3.17
identifier
any 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*

3.18
engine control activated
vehicle status where vehicle functions are available following first action taken by a driver to make the vehicle operate

Note 1 to entry: This is typically initiated by pressing the start/stop button, the turning of a key in an ignition sequence or other methods of vehicle activation as specified by *vehicle manufacturer*.

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3.19
engine control deactivated
vehicle status where vehicle functions and related systems are shut down following action taken by the driver

Note 1 to entry: This action is typically initiated by pressing the start/stop button, turning the ignition key to an 'off' position, or other method of deactivation as specified by the vehicle manufacturer. Related systems may take a few seconds to shut down before 'ignition –off' is achieved.

3.20
in-vehicle equipment
see *eCall in-vehicle system*

Note 1 to entry: within the context of this document 'in-vehicle equipment' refers only to 'in-vehicle equipment' for the purposes of eCall (eCall in-vehicle equipment), sometimes referred to as eCall in-vehicle system or IVS, and does not refer to any other in-vehicle equipment provided for purposes other than eCall.

3.21
in-vehicle equipment provider
provider of *eCall in-vehicle equipment* which is given access to the relevant *Minimum Set of Data* by the *vehicle manufacturer*, or which is providing the relevant *Minimum Set of Data* in order to effect the *eCall service*

Note 1 to entry: The *in-vehicle equipment provider* can be the *vehicle manufacturer* or the provider of aftermarket equipment.

3.22
in-vehicle system
in-vehicle equipment together with the means to trigger, manage and effect the *eCall transaction*

Note 1 to entry: see *eCall in-vehicle system.*

3.23
Minimum Set of Data (MSD)
standardized *data concept* comprising *data elements* of relevant vehicle generated *data* essential for the performance of the *eCall service*

3.24
mobile telecommunication network operator (MNO)
provider of a mobile *wireless communications network* that supports TS12 emergency services

3.25
mobile wireless communications network
wireless communications network with homogeneous handover between *network access points*

3.26
most appropriate PSAP
PSAP defined beforehand by the responsible authorities (Member State) 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* operating under the control of a Public Authority.

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