



# SLOVENSKI STANDARD

## SIST EN 15722:2011

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Nadomešča:

SIST-TS CEN/TS 15722:2009

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### Inteligentni transportni sistemi - e-Varnost - Minimalni nabor podatkov za elektronski klic v sili

Intelligent transport systems - eSafety - eCall minimum set of data (MSD)

Straßenverkehrstelematik - eSicherheit - Minimaler Datensatz für den elektronischen Notruf

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Télématique de la circulation et du transport routier - ESafety - Ensemble minimal de données (MSD) pour l'eCall

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#### **ICS:**

13.200	Preprečevanje nesreč in katastrof	Accident and disaster control
35.240.60	Uporabniške rešitve IT v transportu in trgovini	IT applications in transport and trade
43.040.15	Avtomobilska informatika. Vgrajeni računalniški sistemi	Car informatics. On board computer systems

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EUROPEAN STANDARD  
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Supersedes CEN/TS 15722:2009

English Version

## Intelligent transport systems - eSafety - eCall minimum set of data (MSD)

Télématique de la circulation et du transport routier -  
ESafety - Ensemble minimal de données (MSD) pour  
l'eCall

Straßenverkehrstelematik - eSicherheit - Minimaler  
Datensatz für den elektronischen Notruf

This European Standard was approved by CEN on 11 May 2011.

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## Foreword

This document (EN 15722:2011) has been prepared by Technical Committee CEN/TC 278 "Road transport and traffic telematics", 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of an identical text or by endorsement, at the latest by December 2011, and conflicting national standards shall be withdrawn at the latest by December 2011.

This document supersedes CEN/TS 15722:2009.

The main changes compared to the previous edition are:

- change of ISO 6709 reference into WGS84;
- minor corrections to the ASN.1 scripts;
- change of deliverable from Technical Specification into European Standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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## 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 provisional figure for 2009 is around 34 500 fatalities. The trend 2001-2008 is around 5 % reduction annually. Road accident injuries are in the region of 1,7 million (2007). 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 EU-27 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 % of the 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 a "user instigated or automatic system to provide notification to public safety answering points, by means of wireless communications, that a vehicle has crashed, and to provide coordinates and 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.

This European Standard specifies the "Minimum Set of Data" (MSD) to be transferred by such an in-vehicle eCall system in the event of a crash or emergency.

NOTE The communications media and means of transferring the eCall MSD are not defined in this European Standard.

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

CEN takes no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured 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 holder of this patent right is registered with CEN. Information may be obtained from:

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**EN 15722:2011 (E)****1 Scope**

This European Standard specifies the standard data concepts that comprise the "Minimum Set of Data" (MSD) to be transferred from a vehicle to a 'Public Safety Answering Point' (PSAP) in the event of a crash or emergency via an 'eCall' communication session.

NOTE 1 The communications media protocols and methods for the transmission of the eCall message are not specified in this European Standard.

NOTE 2 Additional data concepts may also be transferred, it is recommended any such data concepts should be registered using a data registry as defined in EN ISO 24978.

**2 Normative reference**

The following referenced documents are indispensable for the application 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.

ISO/IEC 8825-2, *Information technology — ASN.1 encoding rules: Specification of Packed Encoding Rules (PER)*

prEN 16062, *Intelligent transport systems — eSafety — eCall high level application requirements (HLAP)*

prEN 16072, *Intelligent transport systems — eSafety — Pan-European eCall operating requirements*

prEN 16102, *Intelligent transport systems — eCall — Operating requirements for third party support*

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**3 Conformance**

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In order to claim conformance with this European Standard, communication shall be established using accepted wireless communication standards, and it shall be able to demonstrate that the minimum set of data (MSD) transferred together with any standardised optional data elements defined herein comply with the specifications of this European Standard, to the extent that such data is available from the vehicle.

**4 Terms and definitions**

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

**4.1****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 standardised 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'



## 5 Symbols and abbreviated terms

3G	third generation mobile cellular network system, defined by 3GPP standards
3GPP	third generation partnership protocol
BCD	binary coded decimal
BER	basic encoding rules (ASN.1)
CNG	compressed natural gas
ETSI	European telecommunications standards institute
EC	European Commission
EU	European Union
EU-27	27 countries that formed the European Union from 2007
GSM	global system mobile
GNSS	global navigation satellite system
ID	identity
IP	Internet protocol
LPG	liquid propane gas
M	mandatory
MSD	minimum set of data
O	optional
PER	packed encoding rules (ASN.1)
PSAP	public safety answering point

## 6 Requirements

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### 6.1 Concepts and formats

#### 6.1.1 MSD data concepts

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NOTE The minimum set of data is important information to assist the provision of the most appropriate services to the crash or emergency site and to speed up the response. The minimum set of data makes it possible for the PSAP operator to respond to the eCall even without the voice connection.

The "Minimum Set of Data" shall be a direct, timely message to the PSAP operator receiving the emergency call.

#### 6.1.2 Format definition of MSD data concepts

The definitions shown in this standard are shown below in semantic representation. Data presentation shall be as determined in 6.1.4.

The real position of the element in the data-stream is defined by the ASN1 definition in Annex A; elements therefore do not necessarily start or end on a byte boundary.

NOTE The information elements in the minimum set of data have been selected on the basis of their relevance in an emergency rescue situation.

#### 6.1.3 Sequence of MSD data concepts

The sequence of data presentation shall be as specified in 6.2, presented as defined in 6.1.4.

**EN 15722:2011 (E)****6.1.4 Data presentation of MSD**

The MSD shall be transmitted using one or more wireless communications media as defined in prEN 16072 which defines one or more ETSI air interface standards suitable for the transmission of eCall and prEN 16062 (eCall high level application protocols), and shall be presented in Abstract Syntax Notation, ASN.1 Packed encoding rules (PER unaligned) as defined in ISO/IEC 8825-2 using the ASN1 definitions defined in Annex A.

The MSD is also referred to in prEN 16102.

NOTE 1 In order to implement presentation in ASN.1 PER, readers are advised to also read Annex B "ASN.1 Data Representation PER and BER explained"; and also the relevant normative referenced documents.

NOTE 2 It is assumed that the integrity of the transmitted data is assured by the underlying communication interface standard used.

**6.2 Minimum set of data (MSD)**

The following subclauses provide the definition of the minimum set of data that shall be sent from the vehicle in case of an emergency call.

**6.2.1 Order of bits and bytes**

The message shall be sent in the sequence defined within the ASN.1 definition determined herein.

**6.2.2 Contents of MSD**

Table 1 provides a summary of the semantic contents of the MSD

The real position and type of the elements in the data stream is defined by the formal ASN1 definition in Annex A.

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**Table 1 — Contents/format of the MSD data concept**

M – Mandatory data field

O – Optional data field.

Block No.	Name	Type	Unit		Description
1	ID	Integer		M	MSD format version set to 1 to discriminate from later MSD formats.  Later versions have to be backwards compatible with existing versions.  Systems receiving an MSD shall support all standardised MSD versions, which are each uniquely identified using an MSD format version parameter which shall always be contained in the first byte of all (current and future) MSD versions.
2	Message Identifier	Integer		M	Message identifier, starting with 1 for each new eCall session and has to be incremented with every application layer MSD retransmission following a new 'Send MSD' request after the incident event.

Block No.	Name	Type	Unit	Description
3	Control	Bit sequence	M	<p>AutomaticActivation: true = Automatic activation false = Manual activation</p> <p>TestCall type: true = Test call false = Emergency</p> <p>PositionCanBeTrusted: true = Position can be trusted false = Low confidence in position</p> <p>Precise vehicle type encoding is defined in Annex A. The supported vehicle types are as follows:</p> <p>passenger vehicle (Class M1) buses and coaches (Class M2) buses and coaches (Class M3) light commercial vehicles (Class N1) heavy duty vehicles (Class N2) heavy duty vehicles (Class N3) motorcycles (Class L1e) motorcycles (Class L2e) motorcycles (Class L3e) motorcycles (Class L4e) motorcycles (Class L5e) motorcycles (Class L6e) motorcycles (Class L7e)</p> <p><i>SIST EN 15722:2011</i> <a href="https://standards.iteh.ai/catalog/standards/sist/7d94b538-8e29-41b3-9c23-e460fab066f4/sist-en-15722-2011">https://standards.iteh.ai/catalog/standards/sist/7d94b538-8e29-41b3-9c23-e460fab066f4/sist-en-15722-2011</a></p> <p>NOTE 1 Vehicle definitions class M, N according to directive 2007/46/EC; class L according to directive 2002/24/EC.</p> <p>NOTE 2 The position confidence bit is to be set to "Low confidence in position" if the position is not within the limits of <math>\pm 150</math> m with 95 % confidence.</p>
4	Vehicle identification	String	M	<p>VIN number according to ISO 3779</p> <p><i>World Manufacturer Index (WMI)</i> <i>Vehicle Type Descriptor (VDS)</i> <i>Vehicle Identification Sequence (VIS)</i></p>

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Block No.	Name	Type	Unit		Description
5	Vehicle propulsion storage type	Integer		M	<p>These parameters identify the type of vehicle energy storage(s) present. For each storage type the following coding applies:</p> <p>false = indicates a type of storage not present true = indicates type of storage which is present</p> <p>The following storage types are supported:</p> <ul style="list-style-type: none"> <li>Gasoline tank</li> <li>Diesel tank</li> <li>Compressed natural gas (CNG)</li> <li>liquid propane gas (LPG)</li> <li>Electric energy storage (with more than 42 v and 100 Ah)</li> <li>Hydrogen storage</li> </ul> <p>All bits shall be set to zero to indicate an unknown or other type of energy storage.</p> <p>NOTE 1 This information may be unreliable if there has been a change of vehicle propulsion type (e.g. from gasoline to CNG).</p> <p>NOTE 2 More than one bit may be set if there is more than one type of energy storage present.</p>
6	Time stamp	Integer	UTC sec	M	<p>Timestamp of incident event</p> <p>As seconds elapsed since midnight January 1<sup>st</sup>, 1970 UTC.</p> <p>Failure value for time stamp set to "0".</p>
7	Vehicle Location	Integer	milliarcsec	M	<p>Position latitude (WGS84)</p> <p>Value range (-324000000 to 324000000)</p> <p>Maximum value Latitude = 90°00'00.000" = 90*60*60.000" = 324000.000" = 324 000 000 Miliarcseconds = 0x134FD900</p> <p>Minimum value Latitude = -90°00'00.000" = -90*60*60.000" = -324000.000" = -324 000 000 Miliarcseconds = 0xECB02700</p> <p>EXAMPLE 48°18'1.20" N = 48.3003333 lat = (48*3600)+(18*60)+1.20}" = 173881,200" which encodes to the following value: = 173881200d = 0x0A5D3770</p> <p>If latitude is invalid or unknown, the value</p>

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