



Institut luxembourgeois de la normalisation  
de l'accréditation, de la sécurité et qualité  
des produits et services

**ILNAS-EN 15722:2015**

**Intelligent transport systems - ESafety  
- ECall minimum set of data**

Systèmes de transport intelligents -  
ESafety - Ensemble minimal de données  
(MSD) pour l'eCall

Intelligente Transportsysteme -  
ESicherheit - Minimaler Datensatz für den  
elektronischen Notruf eCall

**04/2015**



## National Foreword

This European Standard EN 15722:2015 was adopted as Luxembourgish Standard ILNAS-EN 15722:2015.

Every interested party, which is member of an organization based in Luxembourg, can participate for FREE in the development of Luxembourgish (ILNAS), European (CEN, CENELEC) and International (ISO, IEC) standards:

- Participate in the design of standards
- Foresee future developments
- Participate in technical committee meetings

<https://portail-qualite.public.lu/fr/normes-normalisation/participer-normalisation.html>

### **THIS PUBLICATION IS COPYRIGHT PROTECTED**

Nothing from this publication may be reproduced or utilized in any form or by any mean - electronic, mechanical, photocopying or any other data carries without prior permission!

EUROPEAN STANDARD <sup>ILNAS-EN 15722:2015</sup> **EN 15722**  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

April 2015

ICS 35.240.60

Supersedes EN 15722:2011

English Version

**Intelligent transport systems - ESafety - ECall minimum set of data**

Systèmes de transport intelligents - ESafety - Ensemble minimal de données (MSD) pour l'eCall

Intelligente Transportsysteme - ESicherheit - Minimaler Datensatz für den elektronischen Notruf eCall

This European Standard was approved by CEN on 1 February 2015.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, 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: Avenue Marnix 17, B-1000 Brussels**

<b>Contents</b>	<b>Page</b>
Foreword .....	4
Introduction .....	5
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Symbols and abbreviated terms .....	7
5 Conformance .....	7
6 Requirements .....	7
6.1 Concepts and formats .....	7
6.1.1 MSD data concepts .....	7
6.1.2 Representation of MSD data concepts .....	8
6.1.3 Different versions of MSD data .....	8
6.1.4 Distribution of MSD data .....	8
6.1.5 Additional data .....	9
6.2 ISO Object identifier .....	9
6.3 Contents of the 'Minimum Set of Data' (MSD) .....	10
6.3.1 General .....	10
6.3.2 Basic contents of MSD version 2 .....	10
6.3.3 Previous versions of MSD message .....	15
6.3.4 Future versions of MSD message .....	15
Annex A (normative) ASN.1 definition of MSD .....	16
A.1 ASN.1 definition of MSD .....	16
A.2 Syntax check of ASN.1 definition of MSD .....	21
A.3 Examples of ASN.1 encoded MSD .....	21
Annex B (informative) ASN.1 Data representation PER and BER explained .....	23
B.1 What is ASN.1 .....	23
B.2 Encoding data using ASN.1 .....	23
B.2.1 General .....	23
B.2.2 Basic Encoding Rules (BER) .....	24
B.2.3 Distinguished Encoding Rules (DER) .....	24
B.2.4 Packed Encoding Rules (PER/UPER) .....	24
B.2.5 XML Encoding Rules (XER) .....	25
B.3 Examples .....	25
B.3.1 General .....	25
B.3.2 ASN.1 example definition .....	25
B.3.3 Encoding using BER or DER .....	25
B.3.4 Encoding using PER .....	26
B.3.5 Encoding using XER and E-XER .....	26
Annex C (informative) Formal XML format description (XSD) for the MSD .....	28

<b>Annex D (informative) Explanation of rationale for MSD data concept elements .....</b>	<b>33</b>
<b>Annex E (informative) Object Identifiers (OID) .....</b>	<b>35</b>
<b>E.1 Formal definition of OID .....</b>	<b>35</b>
<b>E.2 What is an object identifier? .....</b>	<b>35</b>
<b>E.3 Object Identifiers and ISO standards .....</b>	<b>35</b>
<b>E.4 OID for eCall data concepts.....</b>	<b>35</b>
<b>Bibliography .....</b>	<b>36</b>

## Foreword

This document (EN 15722:2015) 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 October 2015, and conflicting national standards shall be withdrawn at the latest by October 2015.

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

This document supersedes EN 15722:2011.

This revision is designed to solve ambiguities, provide clarity and improve consistency throughout the document. A significant part of Clause 6 has been reformatted, some parts have been rewritten. None of the proposed changes breaks compatibility with the superseded version. The ASN.1 specifications have been updated to the current most efficient options.

Subclause 6.1 now completely describes the information around the concepts, formats and data-encoding, directly relating it to the chosen encoding rules (ASN.1 UPER). The table describing the components of the MSD (6.2) has been revised. The rationale behind this was to remove inconsistencies between the encoding rules and the description.

Comments made by Member States have been incorporated. Removed reference to the number of Member States of the European Union.

The ASN.1 definition of the MSD has been revised and updated. A syntax check result has been added. An example message with its UPER encoding was also added.

Specification of the concept of a data registry to which the ‘oid’ data element refers, and an explanatory Annex (E) explaining the concept of OIDs to has been added.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey 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 the EU Member States. 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 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, 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 "Intelligent Transport Systems" or "ITS", (previously known as "Road Traffic and Transport Telematics") 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 services (for example the TS12 emergency call of GSM/UMTS).

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. See list of referenced Standards.

## 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 transaction.

Optional additional data concepts may also be transferred.

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

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 16062, *Intelligent transport systems — ESafety — ECall high level application requirements (HLAP)*

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

EN 16102, *Intelligent transport systems — ECall — Operating requirements for third party support*

ISO 3779, *Road vehicles — Vehicle identification number (VIN) — Content and structure*

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

NOTE Communications Standards required for transmission of eCall using GSM/UMTS wireless communications networks are referenced in EN 16062 and EN 16072.

## 3 Terms and definitions

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

### 3.1

#### **ASN.1/Abstract Syntax Notation 1.**

notation that describes rules and structures for representing, encoding, transmitting, and decoding data enabling representation of objects that are independent of machine-specific encoding techniques; See Annex B

### 3.2

#### **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'

### 3.3

#### **minimum set of data (MSD)**

direct, timely data content of an eCall message to the PSAP operator receiving the emergency call containing information about the location of the incident, providing detail characterising the vehicle, and potentially sometimes also providing additional data that is deemed relevant

### 3.4

#### **public safety answering point**

'first level' responder to whom an emergency call/eCall is directed