SLOVENSKI STANDARD
SIST EN 16062:2011

01-november-2011

Inteligentni transportni sistemi - e-Varnost - Zahteve za visoko stopnjo prednosti aplikacijskega protokola elektronskega klica v sili (HLAP)

Intelligent transport systems - eSafety - eCall high level application requirements (HLAP)

Intelligente Transportsysteme - eSicherheit - Anforderungen an Notruf-Anwendungsprotokolle

Systèmes intelligents de transport - eSafety - Exigences HLAP pour l'eCall

Ta slovenski standard je istoveten z: **EN 16062:2011**

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

SIST EN 16062:2011 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 16062

September 2011

ICS 03.220.20; 35.240.60

English Version

Intelligent transport systems - eSafety - eCall high level application requirements (HLAP)

Systèmes intelligents de transport - eSafety - Exigences HLAP pour l'eCall

Intelligente Transportsysteme - eSicherheit - Anforderungen an Notruf-Anwendungsprotokolle

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Foreword

This document (EN 16062:2011) 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of an identical text or by endorsement, at the latest by March 2012, and conflicting national standards shall be withdrawn at the latest by March 2012.

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, 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.

Introduction

An *eCall* is an emergency call generated either automatically via activation of in-vehicle sensors or manually by the *vehicle occupants*; when activated, to provide notification and relevant location information to the most appropriate *Public Safety Answering Points* (PSAP), by means of *mobile wireless communications networks* and 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 PSAP*.

EN 15722 specifies a standardized MSD for *eCall*, and EN 16072 specifies pan-European *eCall* operating requirements. (For third party systems, EN 16102 specifies third party services supporting *eCall* operating requirements. See EC Communication on *eCall* Implementation 2009 [COM(2009) 434 final] for more information).

The operating requirements for pan-European *eCall* are made using Public Land Mobile Networks (PLMN) (such as GSM and 3G), as specified in a number of ETSI standards and technical specifications.

In order to provide the *eCall service* across a wireless network, high level application protocols are required as an important essential element to effect this service provision. This European Standard specifies the protocols to put into effect the pan-European *eCall* operating requirements using PLMNs, and also identifies common elements that can be used in the link between third party services supporting *eCall* and PSAPs.

NOTE The term PSAP, which is most widely used in the *eCall* documentation, European Commission documents etc., is used throughout this document and equates to the term *emergency call response centre* used in the ITS Implementation Directive.

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 patents concerning eCall given in this European Standard.

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

The holder of these patent rights has assured to CEN that they are 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 these patent rights is registered with CEN. Information may be obtained from:

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1 Scope

In respect of pan-European *eCall* (operating requirements defined in EN 16072), this European Standard defines the high level application protocols, procedures and processes required to provide the *eCall service* using a TS12 emergency call over a mobile communications network.

NOTE 1 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 a PLMN (such as ETSI prime medium) which supports the European harmonised 112/E112 emergency number (TS12 ETSI TS 122 003) and to provide a means of manually triggering the notification of an emergency incident.

NOTE 2 HLAP requirements for third party services supporting *eCall* can be found in EN 16102, and have been developed in conjunction with the development of this work item, and is consistent in respect of the interface to the PSAP. This deliverable makes reference to those provisions but does not duplicate them.

2 Conformance

Conformance to this European Standard is achieved by conforming to the requirements of this European Standard specified in Clause 7 below and the test methods specified in Clause 11.

NOTE Pan-European *eCall* equipment providers, PLMNs and PSAPs that cannot support the *eCall* flag and MSD, as defined within this European Standard and EN 15722 cannot claim compliance to this European Standard.

Pan-European *eCall* system conformance testing ensures the full interoperability of its distributed elements, in an emergency context, to conform to pan-European *eCall service* functional and operating requirements.

This European Standard 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.

The first step enabling the interoperability of the pan-European *eCall* system elements is to verify the conformity of each element to the relevant pan-European *eCall* set of standards. In such cases, each element becomes a system under test (SUT) which is tested against a reference conformance test system. Two levels of conformity have to be achieved:

— conformity of the SUT to the network access standards, including support by the network of the *eCall identifier* (flag) in accordance with ETSI TS 124 008, being used to achieve the routing and end to end transport of information between the IVS and the PSAP, and the establishment maintenance and termination of an audio link between both using the 112 emergency number (or dedicated test number);

— conformity of the SUT to the high level application protocol as specified in this European Standard and conformity to both EN 15722 and EN 16072.

Any interoperability test between a given vehicle type and/or communication network and/or PSAP shall be achieved without interference to an operational emergency system, unless by prior arrangement.

The *eCall* system is composed of three distributed main subsystems comprising IVS, mobile network and PSAP, corresponding to SUT1, SUT2 and SUT3 respectively. Each SUT shall be tested for conformance using the necessary subsystem simulators, as shown in Figure1.

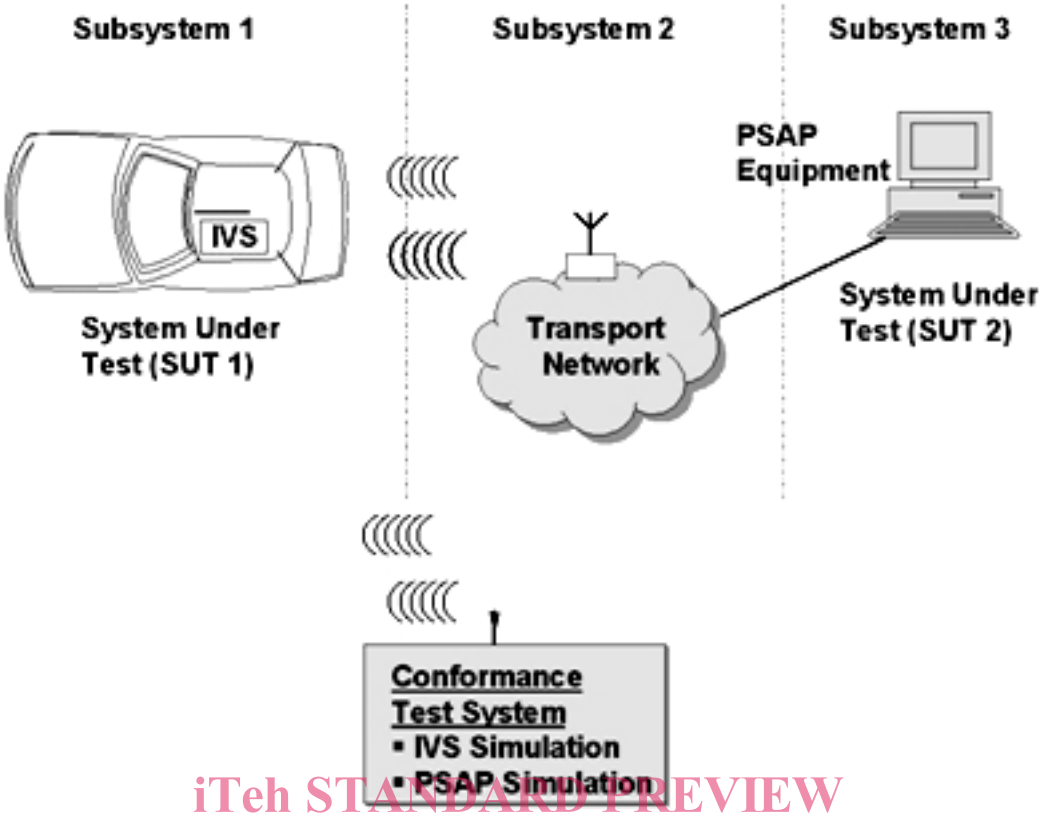

Figure 1 — End-to-End eCall system extended with conformance test system

Clause 11 provides the test and conformance requirements for both the IVS and the PSAP equipment. Network support for the *eCall* flag is necessary to ensure correct filtering and optimal routing of *eCalls* to the required PSAP.

Consequently, at the transport network level, the conformance testing shall be simply achieved by verifying that the *eCalls* are correctly routed to relevant PSAPs designated to handle them according to their triggering sources (manual or automatic).

3 Normative references

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.

EN 15722:2011, *Intelligent transport systems — eSafety — eCall minimum set of data (MSD)*

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

FprEN 16102[1], *Intelligent transport systems — eCall — Operating requirements for third party support*

ETSI TS 122 101, *Universal Mobile Telecommunications System (UMTS); LTE; Service aspects; Service principles* (3GPP TS 22.101 version 8.14.0 Release 8)

[1] In ballot.

ETSI TS 124 008, *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Mobile radio interface Layer 3 specification; Core network protocols; Stage 3 [Release 8 or later]*

ETSI TS 126 267, *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); eCall data transfer; In-band modem solution; General description [Release 8 or later]*

ETSI TS 126 268, *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); eCall data transfer; In-band modem solution; ANSI-C reference code [Release 8 or later]*

ETSI TS 126 269, *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); eCall data transfer; In-band modem solution; Conformance testing [Release 8 or later]*

ETSI TS 122 003, *Digital cellular communications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Circuit Teleservices supported by a Public Land Mobile Network (PLMN) (Teleservice 12/TC12) /E12) [Release 8 or later]*

ETSI TS 122 011, *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Service accessibility [Release 8 or later]*

ETSI TS 127 007, *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); AT command set for user equipment [Release 8 or later]*

ETSI TS 102 164, *Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Emergency Location Protocols (version 1.3.1)*

ETSI TS 151 010-1, *Digital cellular telecommunications system (Phase 2+); Mobile Station (MS) conformance specification; Part 1: Conformance specification (3GPP TS 51.010-1 version 8.1.0) [Release 8 or later]*

ETSI TS 121 133, *Universal Mobile Telecommunications System (UMTS); 3G Security; Security Threats and Requirements; (3GPP TS 21.133 version 4.1.0) [Release 4]*

ETSI TS 122 071, *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Location Services (LCS); Service description; Stage 1 [Release 8 or later]*

ISO/IEC 9646 (all parts), *Information technology — Open Systems Interconnection — Conformance testing methodology and framework*

4 Terms and definitions

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

4.1
112
single European emergency call number supporting Teleservice 12 (ETSI TS 122 003)

4.2
call clear-down
termination of call and freeing up of line (usually achieved by hanging up the receiver or pressing 'end call' or similar on screen)

4.3
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

4.4
data
representations of static or dynamic objects in a formalized manner suitable for communication, interpretation, or processing by humans or by machines

4.5
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

4.6
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

4.7
E112
emergency communications service using the single European emergency call number, 112, which is enhanced with location information of the calling user TS12

4.8
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 standardised *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*

4.9
eCall generator
occupant of a vehicle or equipment within a vehicle that has cause to trigger an *eCall* transaction by automatic or manual means