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Intelligent transport systems - ESafety - ECall end to end conformance testing

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 16454:2023 sisaldab Euroopa standardi EN 16454:2023 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 20.09.2023.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN 16454:2023 consists of the English text of the European standard EN 16454:2023.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 20.09.2023.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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EUROPEAN STANDARD

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## Intelligent transport systems - ESafety - ECall end to end conformance testing

Systèmes de transport intelligents - eSécurité - Essais de conformité du système " eCall " de bout en bout

Intelligente Verkehrssysteme - eSicherheit - Vollständige Konformitätsprüfungen für eCall

This European Standard was approved by CEN on 9 July 2023.

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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN 16454:2023) 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of an identical text or by endorsement, at the latest by March 2024, and conflicting national standards shall be withdrawn at the latest by March 2024.

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 16454:2015.

The following changes have been introduced in this revision:

- IVS and PSAP test added to check for compliance with MSD version 3
- PSAP test added to check for compliance with MSD version 2
- PSAP tests added to check for ASN.1 compliance
- Corrections in multiple tests
- Voided Annex A, B, C, D and E
- Added Annex F

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

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 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 PSAP*.

NOTE 1 EN 15722 specifies a standardized MSD for *eCall*, EN 16062 specifies high level application protocols 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.

This document provides tests to enable actors in the *eCall* chain to be able to claim conformance to the *eCall* Standards, even though they are unable to control the behaviour of systems of other actors in the *eCall* chain

NOTE 2 Conformance tests in this document allow demonstration that a system complies with the *eCall* Standards. Compliance to Standards is a prerequisite to providing an interoperable compliant system, but do not by themselves demonstrate that a system will function nor guarantee the quality of service.

NOTE 3 The term PSAP (Public Safety Assistance Point), 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 document may involve the use of patents concerning *eCall* given in EN 16062 and various ETSI Standards for the network access device and cellular mobile networks.

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

## 1 Scope

This document specifies the key actors in the eCall chain of service provision as:

- 1) In-Vehicle System (IVS)/vehicle,
- 2) Mobile network Operator (MNO),
- 3) Public safety assistance point [provider](PSAP),

and in some circumstances can also involve:

- 4) Third Party Service Provider (TPSP),

and to provide conformance tests for actor groups 1) - 4).

NOTE Conformance tests are not appropriate nor required for vehicle occupants, although they are the recipient of the service.

This document covers conformance testing (and approval) of new engineering developments, products and systems, and does not imply testing associated with individual installations in vehicles or locations.

## 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 16062:2022, *Intelligent transport systems — ESafety — eCall high level application requirements (HLAP) using GSM/UMTS circuit switched networks*

EN 16072:2022, *Intelligent transport systems — ESafety — Pan-European eCall operating requirements*

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

ETSI TS 102 936-1, *eCall Network Access Device (NAD) conformance specification; Part 1: Protocol test specification*

ETSI TS 102 936-2, *eCall Network Access Device (NAD), conformance specification; Part 2: Test Suites*

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) (3GPP TS 22.003 version 12.0.0 Release 12) [Teleservice 12/TC12] /E12]*

ETSI TS 122 011, *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Service accessibility (3GPP TS 22.011 version 8.9.0 Release 8)*

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

ETSI TS 122 105, *Universal Mobile Telecommunications System (UMTS); Services and service capabilities (3GPP TS 22.105 version 8.4.0 Release 8)*

ETSI TS 123 107, *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Quality of Service (QoS) concept and architecture (3GPP TS 23.107 version 6.4.0 Release 6)*

ETSI TS 123 122, *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Non-Access-Stratum (NAS) functions related to Mobile Station (MS) in idle mode (3GPP TS 23.122 version 8.12.0 Release 8)*

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*

ETSI TS 126 267,<sup>1</sup> *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); eCall data transfer; In-band modem solution; General description [Version 8.6.0 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 (Version 8.3.0 or later)*

ETSI TS 127 007, *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; AT command set for User Equipment (UE)*

ETSI TS 131 102, *Universal Mobile Telecommunications System (UMTS); Characteristics of the Universal Subscriber Identity Module (USIM) application (3GPP TS 31.102 version 8.17.0 Release 8)*

ETSI TS 134 123-1 V15.6.0 (2022-07) or later, *Universal Mobile Telecommunications System (UMTS); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification (3GPP TS 34.123-1 version 15.6.0)*

ETSI TS 151 010-1 V13.13.0 (2022-05) or later, *Digital cellular telecommunications system (Phase 2+); Mobile Station (MS) conformance specification; Part 1: Conformance specification (3GPP TS 51.101-1 version 13.13.0).*

ETSI TS 103 412 V1.3.1 (2020-03) or later, *Mobile Standards Group (MSG); Pan-European eCall end to end and in-band modem conformance testing; Prose test specification*

### **3 Terms and definitions**

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

#### **3.1**

#### **112**

single European emergency call number supporting ‘Teleservice 12’

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<sup>1</sup> The provisions for eCall in Version 8.6.0 of ETSI TS 126 267 correspond to the provisions for eCall in versions 9.3.0, 10.0.0 and 11.0.0.