



BSI Standards Publication

**Intelligent transport systems - ESafety -
ECall end to end conformance testing for
IMS packet switched based systems**

National foreword

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English Version

**Intelligent transport systems - ESafety - ECall end to end
conformance testing for IMS packet switched based
systems**

Systèmes de transport intelligents - eSécurité - eCall:
Essais de conformité du système " eCall " de bout en
bout pour les systèmes IMS basés sur la commutation
de paquets

Intelligente Verkehrssysteme - eSicherheit - eCall
Ende-zu-Ende Konformitätsprüfungen für IMS-
paketvermittelnde Systeme

This Technical Specification (CEN/TS) was approved by CEN on 20 August 2018 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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European foreword

This document (CEN/TS 17240:2018) has been prepared by Technical Committee CEN/TC 278 “Intelligent transport systems”, the secretariat of which is held by NEN.

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.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce this Technical Specification: 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey 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* (3.36); 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* (3.22) and carries a defined standardized *minimum set of data* (3.21), 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* (3.23).

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.

While EN 16062 provided high level application protocols (HLAP) for *eCall* using GSM/UMTS circuit switched networks, a new Standards Deliverable CEN/TS 17184 has been developed for the provision of *eCall* using IMS packet switched networks.

European Regulations require support of *eCall* by *vehicle manufacturers* (3.35), other *eCall* IVS manufacturers, MNO's and PSAPs. (See Clause 2, Normative References).

This Standards Deliverable provides a complete suite for the support of IMS-*eCall* and may be used to test IMS-*eCall* aspects of *eCall service* (3.13) provision. Where appropriate, the tests of EN 16454 are replicated, revised or replaced. EN 16454 Conformance Tests that are required in a GSM/UMTS environment but not appropriate in an IMS environment are removed. Where new conformance tests are required for IMS, they have been added as new tests. The reference numbering of conformance tests in this environment are consistent with those in EN 16454 with the addition of the letters "IMS".

This deliverable provides tests to enable actors in the *eCall* chain to be able to claim conformance to the IMS-*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 IMS-*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* (3.15) 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 EN 16062 and various ETSI standards for the *network access device* (3.24) and cellular mobile networks.

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

1 Scope

This document defines the key actors in the eCall chain of service provision using IMS over packet switched networks (such as LTE/4G) as:

- 1) *In-vehicle system* ^(3.20) (IVS)/vehicle,
- 2) Mobile network Operator (MNO),
- 3) *Public safety answering point* ^(3.27) (PSAP),

and to provide conformance tests for actor groups 1) – 3).

NOTE 1 Conformance tests are not appropriate nor required for *vehicle occupants* ^(3.36), although they are the recipient of the service.

NOTE 2 Third party eCall systems (TPS eCall) are not within the scope of this deliverable. This is because the core *TPS-eCall* ^(3.32) standard (EN 16102) does not specify the communications link between the vehicle and the TPS *service provider* ^(3.29).

NOTE 3 These conformance tests are based on the appropriate conformance tests from EN 16454 which was published before Internet Protocol multimedia Systems (IMS) packet switched networks were available. This deliverable therefore replicates the appropriate tests from EN 16454 (and acknowledge their source); adapt and revise Conformance Test Protocols (CTP) from EN 16454 to an IMS paradigm; or provide new additional tests that are required for the IMS paradigm. Some 14 112-eCall (Pan European eCall) tests provided in EN 16454 are specific to GSM/UMTS circuit switched communications and not appropriate for the IMS paradigm and are therefore excluded from this deliverable.

This document therefore provides a suite of ALL conformance tests for IVS equipment, MNO's, and PSAPS, required to ensure and demonstrate compliance to CEN/TS 17184.

NOTE 4 Because in the event of non-viability or non-existence of an IMS supporting network at any particular time/location, IMS-eCall systems revert to CS networked eCall systems eCall via GSM/UMTS, IVS and PSAPs need to support, and prove compliance to both IMS and CS switched networks.

The Scope 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, *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 16072:2015, *Intelligent transport systems — ESafety — Pan—European eCall operating requirements*

EN 16454, *Intelligent transport systems — ESafety — ECall end to end conformance testing*

CEN/TS 17184:2018, *Intelligent transport systems — eSafety — eCall High level application Protocols (HLAP) using IMS packet switched networks*