SLOVENSKI STANDARD
SIST EN 17240:2025+A1:2026

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Inteligentni transportni sistemi - e-Varnost - Preskušanje skladnosti e-klica v zvezi pošiljatelj-prejemnik za paketno preklopne sisteme IMS

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

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

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

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This European Standard was approved by CEN on 6 October 2024 and includes Amendment 1 approved by CEN on 29 January 2026.

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Contents

Page

European foreword 7
Introduction 8
1 Scope 9
2 Normative references 9
3 Terms and definitions 10
4 Symbols and abbreviations 15
5 Conformance 16
5.1 General 16
5.2 General conditions 16
6 General overview of the eCall transaction for pan-European eCall 17
7 How to use this Standard 21
7.1 Layout and procedures 21
7.2 System under test 21
7.3 Accelerated test procedures 22
7.4 Accelerated test procedures for IVSs 22
7.4.1 Accelerated test procedures for all types of IVS 22
7.4.2 Additional accelerated test procedures for eCall-only IVS 24
7.5 Accelerated test procedures for MNOs 25
7.6 Accelerated test procedures for PSAPs 26
8 Requirements 27
8.1 Requirements General objectives 27
8.1.1 State transitions 27
8.1.2 Classification of testing 33
8.1.3 CTP naming conventions 35
8.1.4 CTP <stage> naming convention for IVS conformance tests 35
8.2 CTP structure 36
8.3 IMS-eCall timers 37
9 Conformance test requirements for in-vehicle user equipment and systems (IVS) 38
9.1 Conformance test requirements for in-vehicle user equipment and systems for IMS-eCall 38
9.2 Test objectives and purposes 38
9.3 Taxonomy of testing 38
9.4 State transition conformance tests for in-vehicle equipment and system to comply to Standards for IMS-eCall 38
9.4.1 Use case test objectives by stage 38
9.4.2 CTP 1.1.0.1 Conformance to ETSI TS 136 523, ETSI TS 138 523 and ETSI TS 134 229 - IVS 42
9.4.3 CTP 1.1.0.2 Conformance to valid SIM/USIM - IVS 43
9.4.4 CTP 1.1.0.3 Automatic eCall triggering does not occur when engine control OFF - IVS 44
9.4.5 CTP 1.1.1.1 Power on and self-test - IVS 45
9.4.6 CTP 1.1.2.1 eCall automatically activated - IVS 46
9.4.7 CTP 1.1.2.2 Automatically triggered eCall in progress was not disconnected upon a new eCall trigger - IVS 47

9.4.8 CTP 1.1.2.3 Post-Lateral-crash performance of automatic trigger - IVS 48
9.4.9 CTP 1.1.2.4 Post-frontal-crash performance of automatic trigger - IVS 49
9.4.10 CTP 1.1.2.5 Performance of automatic trigger – Different crash types - IVS 50
9.4.11 CTP 1.1.3.1 eCall manually activated - IVS 51
9.4.12 CTP 1.1.3.2 Manually triggered eCall in progress was not disconnected upon a new eCall trigger - IVS 52
9.4.13 CTP 1.1.4.1 Test eCall activated - IVS 53
9.4.14 CTP 1.1.5.1 Network registration - IVS 54
9.4.15 CTP 1.1.5.2 Manual termination of eCall by vehicle occupants not allowed (automatically triggered eCall) - IVS 55
9.4.16 CTP 1.1.5.3.1 Manual termination of eCall by vehicle occupants not allowed (manually triggered eCall) - IVS 56
9.4.17 CTP 1.1.5.3.2 Manual [A1⟩ cancellation ⟨A1] of eCall by vehicle occupants allowed (manually triggered eCall) - IVS 57
9.4.18 CTP 1.1.5.4 Automatically triggered eCall in progress was not disconnected when engine control is switched to OFF - IVS 58
9.4.19 CTP 1.1.5.5 Manually triggered eCall in progress was not disconnected when engine control is switched to OFF - IVS 59
9.4.20 CTP 1.1.5.6 Priority over conflicting communication - IVS 60
9.4.21 CTP 1.1.6.2 SIP Invite sent - IVS 61
9.4.22 CTP 1.1.7.1 Establish session with urn:service:sos.ecall.automatic - IVS 62
9.4.23 CTP 1.1.8.1 Establish session with urn:service:sos.ecall.manual - IVS 63
9.4.24 CTP 1.1.9.1 Establish session with urn:service:test.sos.ecall - IVS 64
9.4.25 CTP 1.1.10.1 eCall is attempted when no networks are available (limited service condition) - IVS 65
9.4.26 CTP 1.1.10.2 Redial attempt completed within 2 minutes after eCall is dropped - IVS 66
9.4.27 CTP 1.1.10.5 Test eCall is not attempted in limited service condition - IVS 67
9.4.28 CTP 1.1.10.6 Remain registered after eCall is rejected and MSD acknowledged - IVS 68
9.4.29 CTP 1.1.10.7 Redial after eCall is rejected and negative AL-ACK - IVS 69
9.4.30 CTP 1.1.10.8 Redial after eCall is rejected and missing AL-ACK - IVS 70
9.4.31 CTP 1.1.10.9 Redial after eCall is not answered - IVS 71
9.4.32 CTP 1.1.10.10 Negative AL-ACK for initial MSD - IVS 73
9.4.33 CTP 1.1.10.11 Missing AL-ACK for initial MSD - IVS 74
9.4.34 CTP 1.1.10.12 IMS emergency call is attempted when no networks with set IMS eCall support indicator are available - IVS 75
9.4.35 CTP 1.1.10.13 eCall is attempted when no networks with set IMS eCall support indicator are available - IVS 76
9.4.36 CTP 1.1.10.14 IVS logs if initial MSD is not acknowledged - IVS 77
9.4.37 CTP 1.1.11.1 Send MSD with indicator set to automatic eCall activation - IVS 78
9.4.38 CTP 1.1.12.1 Send MSD to indicate manual eCall activation - IVS 79
9.4.39 CTP 1.1.13.1 Send MSD to indicate test Call activation - IVS 80
9.4.40 CTP 1.1.15.1 Voice link established - IVS 81
9.4.41 CTP 1.1.15.2 New/updated MSD received while eCall conversation in progress - IVS 82
9.4.42 CTP 1.1.15.3 New/updated MSD while eCall conversation in progress after negative AL-ACK for initial MSD - IVS 83
9.4.43 CTP 1.1.15.4 New/updated MSD while eCall conversation in progress after negative AL-ACK for initial MSD and MSD transfer via in-band modem - IVS 84
9.4.44 CTP 1.1.15.5 New/updated MSD while eCall conversation in progress after missing AL-ACK for initial MSD - IVS 86
9.4.45 CTP 1.1.15.6 New/updated MSD while eCall conversation in progress after missing AL-ACK for initial MSD and MSD transfer via in-band modem - IVS 87
9.4.46 CTP 1.1.16.2 IVS clears down the eCall upon timer T2 expiry - IVS 89
9.4.47 CTP 1.1.16.3 IVS registers recent eCalls - IVS 90
9.4.48 CTP 1.1.17.1 Call-back allowed and able to be answered by IVS - IVS 91

9.4.49 CTP 1.1.17.2 Call-back answered by IVS in the event of abnormal termination - IVS 92
9.4.50 CTP 1.1.17.3 MSD transfer occurs upon PSAP request during call-back - IVS 93
9.4.51 CTP 1.1.17.4 Remain registered for ≥ 1 hr - IVS 94
9.4.52 CTP 1.1.17.6 No redial attempt in the event of abnormal termination after MSD ACK - IVS 95
9.4.53 CTP 1.1.17.7 Capacity of backup battery - IVS 96
9.4.54 CTP 1.1.18.1 Compliance with MSD version 3 - IVS 97
9.4.55 CTP 1.1.18.2 MSD transfer using in-band modem after negative AL-ACK - IVS 98
9.4.56 CTP 1.1.18.3 MSD transfer using in-band modem after missing AL-ACK - IVS 99
9.4.57 CTP 1.1.18.4 Conformance to ETSI TS 126 269 - IVS 100
9.4.58 CTP 1.1.18.5 MSD transfer using IPv4 - IVS 101
9.4.59 CTP 1.1.18.6 MSD transfer using IPv6 - IVS 102
9.4.60 CTP 1.1.18.7 Compliance of MSD with additional data from Euro NCAP TB 040:2022 - IVS 103
9.5 State transition test descriptions for in-vehicle equipment and system to comply to Standards for IMS-eCall – additional tests for eCall-only systems 104
9.5.1 General 104
9.5.2 CTP 1.1.1.2 IVS does not perform registration after power-up - eCall-only IVS 106
9.5.3 CTP 1.1.10.4 Verify that PLMN registration procedure is executed upon initiating an eCall - eCall-only IVS 107
9.5.4 CTP 1.1.17.5 Remain registered for ≥ 1 hr ≤ 12 hr - eCall-only IVS 108

10 Conformance tests for mobile network operators 109
10.1 Test objectives and purposes 109
10.1.1 General 109
10.1.2 Default assumptions 109
10.2 Taxonomy of testing and referenced tests 109
10.3 Use case conformance tests for mobile network operator systems to comply to Standards for IMS-eCall 109
10.3.1 Conformance requirement 109
10.3.2 Use case test objectives by stage 109
10.4 State transition test descriptions for mobile network operators to demonstrate compliance with IMS-eCall standards 110
10.4.1 General 110
10.4.2 CTP 2.0.1 Keep SIMs/USIMs/eSIMs alive even though not in regular operation - MNO 112
10.4.3 CTP 2.0.2 MNO supports general eCall relevant requirements - MNO 113
10.4.4 CTP 2.0.4 Support IMS-eCall routing - MNO 115
10.4.5 CTP 2.1.2 Accept registration – Roaming - MNO 116
10.4.6 CTP 2.2.1.1 Establish automatically initiated eCall - MNO 117
10.4.7 CTP 2.2.1.2 Route call to 'most appropriate' PSAP - MNO 118
10.4.8 CTP 2.2.1.3 Provide IMS emergency data/caller ID - MNO 119
10.4.9 CTP 2.2.1.4 Initial MSD transfer in an automatically initiated eCall - MNO 120
10.4.10 CTP 2.2.2.1 Establish manually initiated eCall - MNO 121
10.4.11 CTP 2.2.2.4 Initial MSD transfer in a manually initiated eCall - MNO 122
10.4.12 CTP 2.2.3.1 Establish test eCall - MNO 123
10.4.13 CTP 2.2.3.3 Provide test eCall data - MNO 124
10.4.14 CTP 2.2.3.4 Initial MSD transfer in a test eCall - MNO 125
10.4.15 CTP 2.3.1.1 MSD transfer using IPv4 - MNO 126
10.4.16 CTP 2.3.1.2 MSD transfer using IPv6 - MNO 127
10.4.17 CTP 2.3.1.3 New MSD transfer before call clear-down - MNO 128
10.4.18 CTP 2.3.1.4 New MSD transfer using in-band modem before call clear-down - MNO 129
10.4.19 CTP 2.5.1 Support call-back - MNO 130
10.4.20 CTP 2.5.2 New MSD transfer during call-back - MNO 131
10.4.21 CTP 2.5.3 Support call-back - Roaming - MNO 132

11 Conformance tests for PSAP systems ... 133
11.1 Test objectives and purposes ... 133
11.2 Taxonomy of testing ... 133
11.3 Use case conformance tests for PSAP systems to comply to Standards for IMS-eCall ... 133
11.3.1 Conformance requirement ... 133
11.3.2 Use case test objectives by stage ... 133
11.4 State transition conformance tests for PSAPs – IMS-eCall ... 134
11.4.1 General ... 134
11.4.2 CTP 3.1.0.1 Provide MNOs with appropriate routing data - Member State/ PSAP ... 136
11.4.3 CTP 3.1.0.2 Maintain map geo-information - PSAP ... 137
11.4.4 CTP 3.1.1.1 Receive automatically initiated eCall - PSAP ... 138
11.4.5 CTP 3.1.1.2 Receive manually initiated eCall - PSAP ... 139
11.4.6 CTP 3.1.1.3 Receive test eCall - PSAP ... 140
11.4.7 CTP 3.1.2 Interpret IMS emergency data - Caller ID and location - PSAP ... 141
11.4.8 CTP 3.1.7.1 Receive MSD - PSAP ... 142
11.4.9 CTP 3.1.7.5 Verify PSAP behaviour when MSD format check fails - PSAP ... 143
11.4.10 CTP 3.1.7.6 Verify PSAP behaviour when MSD contains unknown optional additional data set - PSAP ... 144
11.4.11 CTP 3.1.7.7 Verify PSAP behaviour when MSD contains ASN.1 extended data-elements - PSAP ... 145
11.4.12 CTP 3.1.7.8 Verify PSAP behaviour when MSD contains ASN.1 extended data-values - PSAP ... 146
11.4.13 CTP 3.1.7.9 Compliance with MSD version 2 - PSAP ... 147
11.4.14 CTP 3.1.7.10 Compliance with MSD version 3 - PSAP ... 148
11.4.15 CTP 3.1.7.11 Request MSD using in-band modem - PSAP ... 149
11.4.16 CTP 3.1.7.12 Receive MSD using in-band modem - PSAP ... 150
11.4.17 CTP 3.1.7.13 Receive MSD using IPv4 - PSAP ... 152
11.4.18 CTP 3.1.7.14 Receive MSD using IPv6 - PSAP ... 153
11.4.19 CTP 3.1.7.15 eCall is rejected and MSD acknowledged - PSAP ... 154
11.4.20 CTP 3.1.7.16 MSD corrupted - PSAP ... 155
11.4.21 CTP 3.1.7.17 Compliance of MSD with additional data from Euro NCAP TB 040:2022 - PSAP ... 156
11.4.22 CTP 3.1.9 Route voice and MSD to operator - PSAP ... 158
11.4.23 CTP 3.1.10 Display IMS-eCall data and MSD to operator - PSAP ... 159
11.4.24 CTP 3.1.11 Decode VIN - PSAP ... 160
11.4.25 CTP 3.1.12 Talk to vehicle occupants - PSAP ... 161
11.4.26 CTP 3.1.13 Request new MSD before call clear-down - PSAP ... 162
11.4.27 CTP 3.1.14.1 Call clear-down - PSAP ... 163
11.4.28 CTP 3.1.15 Call-back to vehicle - PSAP ... 164
11.4.29 CTP 3.1.16 Request new/updated MSD after call clear-down - PSAP ... 165
11.4.30 CTP 3.1.17 Record of not handled eCall - PSAP ... 166
12 Marking, labelling and packaging ... 167
13 Declaration of patents and intellectual property ... 167
Annex A (informative) MSD examples for special PSAP tests ... 168
A.1 General ... 168
A.2 Example: standard MSD (version 3) ... 168
A.3 Example: standard MSD (version 3) with 'unknown' OAD ... 171
A.4 Example: MSD (version 3) with extended data-elements ... 174
A.5 Example: MSD (version 3) with extended data-values ... 180
Annex B (informative) Relation to EN 16454 ... 185

B.1 General **185**
B.2 Relation of IVS tests **185**
B.3 Relation of MNO tests **186**
B.4 Relation of PSAP tests **187**
Bibliography **188**

European foreword

This document (EN 17240:2024+A1:2026) 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 August 2026, and conflicting national standards shall be withdrawn at the latest by August 2026.

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 includes Amendment 1 approved by CEN on 29 January 2026.

This document supersedes [A1] EN 17240:2024 [A1].

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] [A1].

Part of this revision of the document has been aimed at making the document pure packet switched and removing references to eCall over circuit switched networks, this in order to make the document future proof.

The following changes have been introduced in this revision:

— Tests added to check for compliance with MSD version 3

— Tests added to check for support of IPv4 and IPv6

— Tests added to check for MSD transfer using in-band modem

— Tests added to check for compliance with additional data from Euro NCAP

— IVS tests added to check for special cases of eCall attempts

— IVS test added to check for capacity of backup battery

— PSAP test added to check for compliance with MSD version 2

— PSAP tests added to check for ASN.1 compliance

— Corrections in multiple tests, figures and tables

— Removed old Annex A, B and C

— Added new Annex A and B

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 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, 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 Point* (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* using GSM/UMTS circuit switched networks, EN 17184 specifies *eCall* high level application protocols using IP Multimedia Subsystem over packet switched networks 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 EN 17184 has been developed for the provision of eCall using IMS over packet switched networks.

European Regulations require support of eCall by *vehicle manufacturers*, 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* provision. Where appropriate, the tests of EN 16454 are replicated, revised or replaced. Annex B shows the relation of the tests specified in this Standards Deliverable to the tests specified in EN 16454. 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.

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 Answering 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 European Standard 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 assumes support of eCall using IMS over packet switched networks by an IVS and a PSAP and further assumes that all PLMNs available to an IVS at the time an eCall or test eCall is initiated are packet switched networks. Support of eCall where eCall using IMS over packet switched networks is not supported by an IVS or PSAP is out of scope of this document.

At some moment in time packet switched networks will be the only Public Land Mobile Networks (PLMN) available. However, as long as GSM/UMTS PLMNs are available (Teleservice 12/TS12), ETSI TS 122 003 will remain operational. Both the use of such PLMNs and the logic behind choosing the appropriate network in a hybrid situation (where both packet-switched and circuit-switched networks are available) are out of scope of this document.

This document specifies the key actors in the eCall chain of service provision using IMS over packet switched networks (such as LTE, NR and their successors) as:

1) *In-Vehicle System* (IVS)/vehicle,

2) Mobile Network Operator (MNO),

3) *Public Safety Answering Point* (PSAP),

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

NOTE 1 Conformance tests are not appropriate nor required for *vehicle occupants*, 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* standard (EN 16102) does not specify the communications link between the vehicle and the TPS *service provider*.

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 Procedures (CTP) from EN 16454 to an IMS paradigm; or provide new additional tests that are required for the IMS paradigm. Some 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 EN 17184.

The scope covers conformance testing 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*

〉A1〈 EN 16072:2025 〉A1〈, *Intelligent transport systems — ESafety — Pan-European eCall operating requirements*

EN 17184:2024〉A1〈 +A1:2026 〉A1〈, *Intelligent transport systems — eSafety — eCall High level application Protocols (HLAP) using IMS packet switched networks*

ETSI TS 123 401, *LTE; General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access (3GPP TS 23.401)*

ETSI TS 123 501, *5G; System architecture for the 5G System (5GS) (3GPP TS 23.501)*

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

ETSI TS 134 229-1 V17.1.0 (2024-07) or later, *Universal Mobile Telecommunications System (UMTS); LTE; Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification (3GPP TS 34.229-1 version 17.1.0)*

ETSI TS 134 229-5 V17.1.0 (2024-08) or later, *5G; Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); User Equipment (UE) conformance specification; Part 5: Protocol conformance specification using 5G System (5GS) (3GPP TS 34.229-5 version 17.1.0)*

ETSI TS 136 523-1 V18.5.0 (2024-08) or later, *LTE; Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification (3GPP TS 36.523-1 version 18.5.0)*

ETSI TS 138 523-1 V17.7.0 (2024-08) or later, *5G; LTE; 5GS; User Equipment (UE) conformance specification; Part 1: Protocol (3GPP TS 38.523-1 version 17.1.0)*

ETSI TS 126 269 V18.0.0 (2024-05) or later, *Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); eCall data transfer; In-band modem solution; Conformance testing (3GPP TS 26.269 version 17.0.0 Release 17)*

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*

ITU-T P.1140, *SERIES P: TELEPHONE TRANSMISSION QUALITY, TELEPHONE INSTALLATIONS, LOCAL LINE NETWORKS; Communications involving vehicles; Speech communication requirements for emergency calls originating from vehicles*

Euro NCAP TB 040:2022 V1.0.0, *eCall Additional Data Concept Triggering Incident*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
112
single European emergency call number supporting '*Teleservice* 12'

Note 1 to entry: See ETSI TS 122 003.

3.2
call clear-down
act of ending a call, following call completion, which is signalled in accordance with ISUP (ISDN User Part) 'Release Cause Codes' (usually achieved by hanging up the receiver or pressing 'end call' or similar on screen)

3.3
contracting MNO
mobile network operator which has responsibility for provisioning and managing a specific SIM

3.4
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

3.5
conformance test point
point which may be an actual instantiation of equipment performing a conformance test process 'live', using 'live' equipment or may be equipment/systems that simulate behaviour of equipment at the point being tested in order to stimulate or observe the behaviour resultant from the stimulation and note the result of that simulation

3.6
data
representations of static or dynamic objects in a formalized manner suitable for communication, interpretation, or processing by humans or by machines

3.7
data concept
concept 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

3.8
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

3.9
eCall
emergency call generated either automatically via activation of in-vehicle sensors or manually by the *vehicle occupants*, which, when activated, 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* (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*

3.10
eCall-capable
provision of *eCall service* with availability of wireless communication network to undertake other application services

3.11
eCall-only
provision of *eCall service* without availability of wireless communication network to undertake other application services

3.12
eCall generator
occupant of a vehicle or equipment within a vehicle that has cause to trigger an *eCall transaction* by automatic or manual means

3.13
eCall service
end-to-end emergency service to connect occupants of an affected vehicle to the *most appropriate PSAP* via an audio link across a PLMN together with the transfer of a *minimum set of data* to the PSAP

3.14
eCall transaction
establishment of a *mobile wireless communications session* across a *public wireless communications network* and the transmission of a *minimum set of data* from a vehicle to a *public safety answering point* and the establishment of an audio channel between the vehicle and the PSAP

3.15
emergency call response centre
term used in ITS Implementation Directive to mean *Public safety answering point* (PSAP)

3.16
established
created or set up

3.17
identifier
label, symbol or token that names or identifies an entity or a collection of *data* or the means of designating or referring to a specific instance of a *data concept*

3.18
IMS-eCall
an eCall making use of packet switched mobile network

3.19
in progress
taking place

3.20
in-vehicle equipment
equipment within the vehicle that provides or has access to in-vehicle *data* required for the *minimum set of data* and any other *data* that is to be sent as part of or complementary to the *minimum set of data* to effect the *eCall transaction* via a *public mobile wireless communications network* providing a link between the vehicle and a means of enacting the *eCall service* via a *public mobile wireless communications network*

3.21
in-vehicle system
in-vehicle equipment together with the means to trigger, manage and effect the *eCall transaction*

3.22
minimum set of data
standardized *data concept* comprising *data elements* of relevant vehicle generated *data* essential for the performance of the *eCall service*

Note 1 to entry: See EN 15722.

3.23
mobile wireless communications network
wireless communications network with homogeneous handover between *network access points*

3.24
most appropriate PSAP
PSAP defined beforehand by responsible authorities to cover emergency calls from a certain area or for emergency calls of a certain type

Note 1 to entry: See also PSAP.

Note 2 to entry: A number of different instantiations of PSAP service are supported within this European Standard. A PSAP can be a Public Authority or a private *service provider* operating on behalf of the responsible authorities.

3.25
network access device
NAD
device providing communications to a mobile wireless communications network with homogeneous handover between network access points

3.26
network access point
beacon, antenna or similar source of signal propagation and receipt together with equipment to manage communication sessions with users operating within the operating reach of the *network access point* and provide connectivity for the users within the operating reach of the single *access point* to a wider communications network

Note 1 to entry: A *network access point* may, but does not need to provide homogeneous or heterogeneous handover to another *network access point.*

3.27
public mobile wireless communications network
mobile wireless communications network with access to a public telecommunications network

3.28
public safety answering point
PSAP
physical location working on behalf of the national authorities where emergency calls are first received under the responsibility of a public authority or a private organization recognized by the national government

Note 1 to entry: See also *most appropriate PSAP*.

Note 2 to entry: A number of different instantiations of PSAP service are supported within this deliverable.