

# DIN EN 16062:2012-01 (E)

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

---

<b>Contents</b>		<b>Page</b>
Foreword .....		6
Introduction .....		7
1	Scope .....	9
2	Conformance .....	10
3	Normative references .....	11
4	Terms and definitions .....	13
5	Symbols and abbreviations .....	16
6	General overview of the eCall transaction for pan-European eCall .....	17
7	Requirements .....	21
7.1	Procedures following power-up of the in-vehicle system .....	21
7.1.1	General .....	21
7.1.2	Enabled IVS .....	21
7.1.3	Enabled PSAP .....	21
7.1.4	IVS configured only for eCall .....	21
7.1.5	Self test .....	22
7.1.6	Standby mode applicable to IVS configured for eCall only .....	22
7.2	Activation .....	22
7.2.1	Activation of pan-European eCall .....	22
7.2.2	Activation of a test eCall .....	23
7.3	Call set-up .....	23
7.3.1	General .....	23
7.3.2	IVS network access device (NAD) already registered on PLMN .....	24
7.3.3	eCall in progress .....	24
7.3.4	Network selection and registration .....	24
7.3.5	Authentication of the subscriber .....	24
7.3.6	eCall establishment .....	24
7.3.7	Cell localisation (by network) .....	25
7.3.8	Manual termination of eCall by vehicle occupants before trigger confirmation .....	25
7.4	MSD transfer .....	25
7.4.1	General .....	25
7.4.2	Send initiation signal from IVS eCall modem to PSAP .....	26
7.4.3	eCall modem synchronisation .....	26
7.4.4	Request MSD by PSAP eCall modem to IVS eCall modem .....	26
7.4.5	Send MSD from vehicle IVS to PSAP eCall modem .....	27
7.4.6	Link layer error check .....	27
7.4.7	Link layer ACK from PSAP eCall modem to IVS eCall modem .....	27
7.5	Application layer acknowledgement (AL- ACK) .....	27
7.5.1	Following transmission of the MSD to the eCall PSAP application .....	27
7.5.2	PSAP acknowledges the MSD .....	28
7.5.3	No receipt of application layer ACK .....	28
7.5.4	PSAP requests a new MSD .....	28
7.5.5	PSAP clears down the call .....	28
7.5.6	Form of presentation of the AL-ACK .....	28

7.6	Request "SEND MSD" .....	29
7.6.1	General .....	29
7.6.2	Before call clear-down .....	30
7.6.3	After call clear-down .....	30
7.7	PSAP application features .....	31
7.7.1	General requirements .....	31
7.7.2	MSD display to the PSAP operator .....	31
7.7.3	PSAP operator user interface .....	31
7.8	Audio link to vehicle occupants .....	32
7.9	eCall clear-down .....	32
7.10	PSAP call back .....	33
7.11	Rerouting to another PSAP/emergency control centre .....	33
7.12	Handling non equipped situations / error cases .....	33
7.12.1	MSD not transmitted correctly .....	33
7.12.2	False generation of eCalls .....	33
7.12.3	Network registration fails .....	34
7.12.4	Call failure before the MSD is sent and acknowledged .....	34
7.12.5	Mobile network not capable to support eCall flag .....	34
7.12.6	PSAP modem failure .....	35
7.12.7	PSAP network/ICT failure .....	35
7.12.8	PSAP application failure .....	35
7.12.9	PSAP operator does not respond .....	35
7.12.10	No response if line engaged .....	36
7.12.11	MSD not sent .....	36
7.12.12	MSD not received .....	36
7.12.13	Audio link not established .....	36
7.12.14	Audio link established but subsequently fails .....	37
7.12.15	Re-attempt in case of interrupted call .....	37
7.12.16	Automatic repeat attempts .....	37
7.12.17	IVS NAD does not receive call clear-down .....	37
8	Third party supported eCall .....	37
8.1	Overview .....	37
9	Defences against attack (Security provisions) .....	37
10	Quality of service requirements .....	38
11	Test and conformance requirements .....	38
11.1	General .....	38
11.2	Test and conformance requirements for the IVS .....	39
11.2.1	General .....	39
11.2.2	Selection of conformance points for the IVS .....	39
11.2.3	Test purpose for the IVS .....	41
11.2.4	Conformance requirements catalogue for the IVS .....	41
11.3	Test and conformance requirements for the PSAP equipment .....	46
11.3.1	General .....	46
11.3.2	Selection of conformance points for the PSAP equipment .....	47
11.3.3	Test purpose for the PSAP equipment .....	47
11.3.4	Conformance requirements catalogue for the PSAP equipment .....	48
12	Marking, labelling and packaging .....	49
13	Declaration of patents and intellectual property .....	49
	Annex A (normative) Table of timings .....	50
	Annex B (informative) Summary abstracts of normative referenced documents .....	52
B.1	Objective .....	52
B.2	EN 15722, Intelligent transport systems -- ESafety -- ECall minimum set of data (MSD) ....	52

B.3	EN ISO 24978, Intelligent transport systems -- ITS safety and emergency messages using any available wireless media -- Data registry procedures (ISO 24978:2009) .....	52
B.4	WGS84 World Geodetic System 84 (last revised 2004) .....	52
B.5	EN 16072, Intelligent transport systems -- eSafety -- Pan-European eCall operating requirements .....	52
B.6	prEN 16102 (in ballot), Intelligent transport systems -- eSafety -- Third party supporting eCall : Operating requirements .....	53
B.7	ETSI TS 122 101, Universal Mobile Telecommunications System (UMTS); LTE; Service aspects; Service principles (Release 8) .....	54
B.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 .....	54
B.9	ETSI TS 126 267, Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); eCall data transfer; In-band modem solution; General description .....	54
B.10	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 .....	55
B.11	Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); eCall data transfer; In-band modem solution; Conformance testing .....	55
B.12	Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and Directive 98/48/EC of the European Parliament and of the Council of 20 July 1998 amending Directive 98/34/EC laying down a procedure for the provision of information in the field of technical standards and regulations .....	56
B.13	Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity .....	56
B.14	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 .....	57
B.15	ETSI TS 122 011, Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Service accessibility .....	57
B.16	ETSI TS 127 007, Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); AT command set for user equipment .....	57
B.17	ETSI TS 122 071, Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Location Services (LCS); Service description; Stage 1 .....	58
B.18	ETSI TS 122 002, Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Circuit bearer services (BS) supported by a Public Land Mobile Network (PLMN) .....	59
B.19	ETSI TS 122 004, Digital cellular telecommunications system (Phase 2+); Universal mobile telecommunications system (UMTS); General on supplementary services .....	59
B.20	Directive 2002/22/EC, Directive of the European Parliament and of the Council on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive) .....	59
B.21	ETSI TS 122 001, Digital cellular telecommunications system (Phase 2+); TSG Services and System Aspects; Principles of circuit telecommunication services supported by a Public Land Mobile Network (PLMN) (Release 8) .....	60
B.22	ETSI TS 123 018, Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Basic call handling; Technical realization (Release 8) .....	60
B.23	ETSI TS 102 164, Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Emergency location protocols .....	60
B.24	ETSI TS 151 010, Digital cellular telecommunications system (Phase 2+); Mobile Station (MS) conformance specification; Part 1: Conformance specification (3GPP TS 51.010-1 version 8.1.0) .....	61
B.25	ETSI TS 124 123, Universal Mobile Telecommunications System (UMTS); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification (3GPP TS 34.123-1 version 8.6.0) .....	61

<b>B.26</b>	<b>ETSI 121 133, Universal Mobile Telecommunications System (UMTS); 3G Security; Security Threats and Requirements (3GPP TS 21.133 version 4.1.0)</b> .....	<b>62</b>
<b>B.27</b>	<b>Directive 2002/22/EC of The European Parliament and of The Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive), amended by Directive 2009/136/EC of the European Parliament and of the Council of 25 November 2009</b> .....	<b>63</b>
<b>Annex C (informative) Test system strategies</b> .....		<b>65</b>
<b>C.1</b>	<b>General</b> .....	<b>65</b>
<b>C.2</b>	<b>Vehicle and PSAP equipment life cycle</b> .....	<b>65</b>
<b>C.3</b>	<b>Laboratory environment</b> .....	<b>66</b>
<b>C.4</b>	<b>OEM or third party test systems</b> .....	<b>66</b>
<b>Bibliography</b> .....		<b>68</b>