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Reference

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Mobile Standards Group (MSG).

The present document is a single-part deliverable covering the "Abstract Test Suite (ATS) and Protocol Implementation eXtra Information for Testing (PIXIT)".

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

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1 Scope

The present document contains the Abstract Test Suite (ATS) for eCall (Higher Layer Application Protocols) HLAP for the test purposes (TPs) as defined in CEN EN 16454 [i.1] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [i.11].

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [i.8] and ISO/IEC 9646-2 [i.9]) as well as the ETSI rules for conformance testing (ETSI ETS 300 406 [i.12]) are used as a basis for the test methodology.

The TPs defined in CEN EN 16454 [i.1] are implemented by different ATSs. The eCall HLAP ATS is defined in the present document. The relevant eCall tests related to GSM and UMTS technologies are identified in ETSI TS 102 936-1 [i.4] and ETSI TS 102 936-2 [i.5].

The eCall HLAP ATS of this present document contains only tests which do not require the MNO test point and hence the ATS implements only a subset of all available TPs. The detailed ATS coverage is defined in clause 5.

The support of optional features is defined by the Protocol Implementation Conformance Statement (PICS) in clause 7.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

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The following referenced documents are necessary for the application of the present document.

Not applicable.

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] CEN EN 16454:2012: "Intelligent transport systems - eSafety - eCall end to end conformance testing".

[i.2] CEN EN 15722:2012: "Intelligent transport systems - eSafety - eCall minimum set of data".

[i.3] CEN EN 16062:2012: "Intelligent transport systems - eSafety - eCall high level application requirements (HLAP) using GSM/UMTS circuit switched networks".

[i.4] ETSI TS 102 936-1 V1.1.1: "eCall Network Access Device (NAD) conformance specification; Part 1: Protocol test specification".

[i.5] ETSI TS 102 936-2 V1.1.1: "eCall Network Access Device (NAD) conformance specification; Part 2: Test suites".

[i.6] ETSI TS 134 123-3: "Universal Mobile Telecommunications System (UMTS); User Equipment (UE) conformance specification; Part 3: Abstract test suite (ATS) (3GPP TS 34.123-3 version 11.4.0 Release 11)".

[i.7] ETSI TS 151 010-3: " Digital cellular telecommunications system (Phase 2+); Mobile Station (MS) conformance specification; Part 3: Layer3 (L3) Abstract Test Suite (ATS) (3GPP TS 51.010-3 version 6.3.0 Release 6)".

[i.8] ISO/IEC 9646-1 (1994): "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 1: General concepts".

[i.9] ISO/IEC 9646-2 (1994): "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 2: Abstract Test Suite specification".

[i.10] ISO/IEC 9646-6 (1994): "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 6: Protocol profile test specification".

[i.11] ISO/IEC 9646-7 (1995): "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 7: Implementation Conformance Statements".

[i.12] ETSI ETS 300 406 (1995): "Methods for testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

[i.13] ETSI ES 201 873-1: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; Part 1: TTCN-3 Core Language".

[i.14] ETSI ES 201 873-7: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; Part 7: Using ASN.1 with TTCN-3".

[i.15] ETSI TS 122 011: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Service accessibility (3GPP TS 22.011)".

[i.16] 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)".

[i.17] ETSI TS 126 267: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); eCall data transfer; In-band modem solution; General description (3GPP TS 26.267)".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in CEN EN 16454 [i.1], ISO/IEC 9646-1 [i.11] and ISO/IEC 9646-7 [i.11] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in CEN EN 16454 [i.1] and the following apply:

AL	Application Layer
AL-ACK	Application Layer Acknowledgement
ATM	Abstract Test Method
ATS	Abstract Test Suite
CTP	Conformance Test Purpose
GIS	Geographic Information System
GSM	Global System for Mobile communications
HLAP	Higher Layer Application Protocols
IUT	Implementation Under Test
IVS	In-Vehicle System
LL-ACK	Link Layer Acknowledgement

MNO	Mobile Network Operator
MSD	Minimum Set of Data
MSISDN	Mobile Subscriber ISDN number
PICS	Protocol Implementation Conformance Statement
PIXIT	Partial Protocol Implementation Extra Information for Testing
PSAP	Public Safety Answering Point
SCS	System Conformance Statement
SUT	System Under Test
TC	Test Case
TTCN	Testing and Test Control Notation
UMTS	Universal Mobile Telecommunications System

4 Test Method

4.1 Abstract test method (ATM)

4.1.1 ATM used by the ATS in the present document

The ATM used is the single layer distributed test method.

4.1.2 ATM used by the ATSs for GSM and UMTS protocol conformance testing

The ATM used for the UMTS TCs is the single layer distributed test method and is identified in ETSI TS 134 123-3 [i.6], clause 6.3.1.

The ATM used for the GSM TCs is the single layer distributed test method and is identified in ETSI TS 151 010-3 [i.7], clause 6.

4.2 Test Configuration

4.2.1 Configuration 1: IVS SUT

4.2.1.1 General configuration

Figure 1 describes the general configuration for IVS SUT.

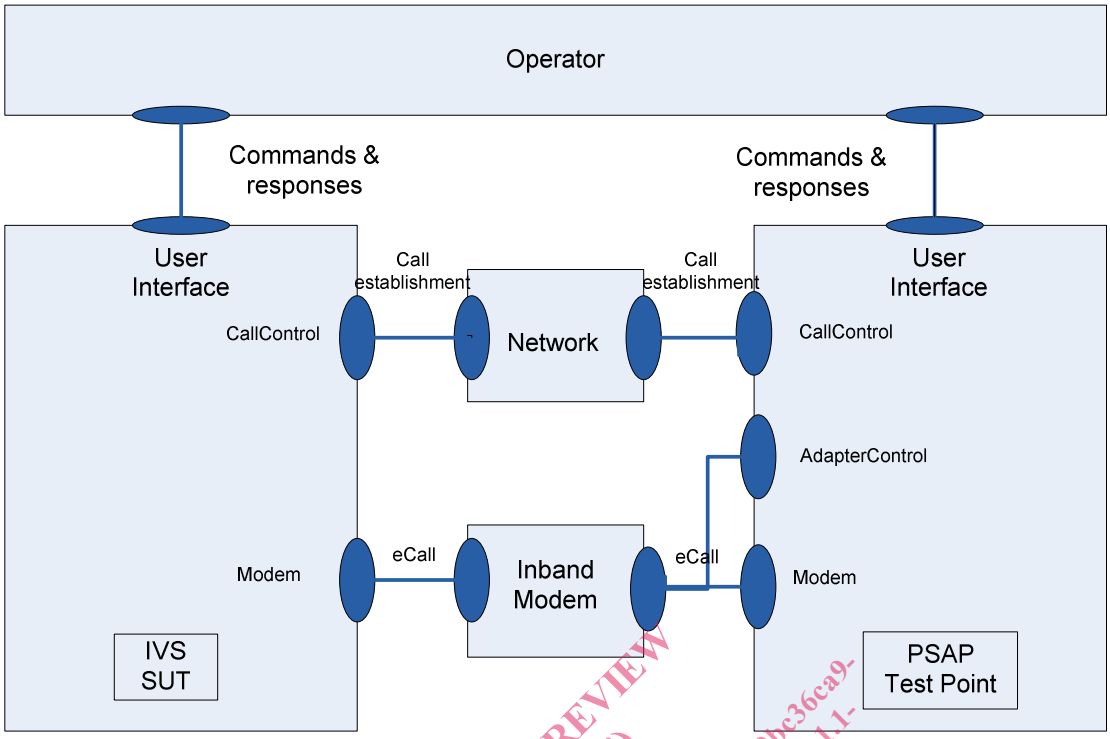

Figure 1

4.2.1.2 TTCN configuration

Figure 2 describes the TTCN configuration for IVS SUT.

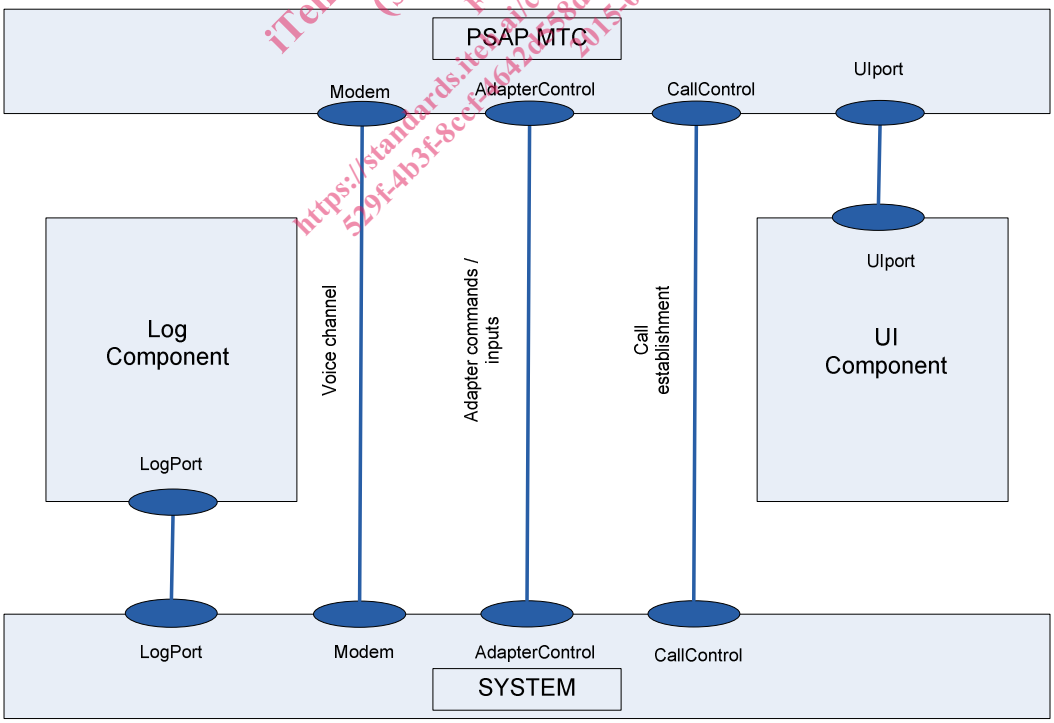

Figure 2

4.2.2 Configuration 2: PSAP SUT

4.2.2.1 General configuration

Figure 3 describes the general configuration for PSAP SUT.

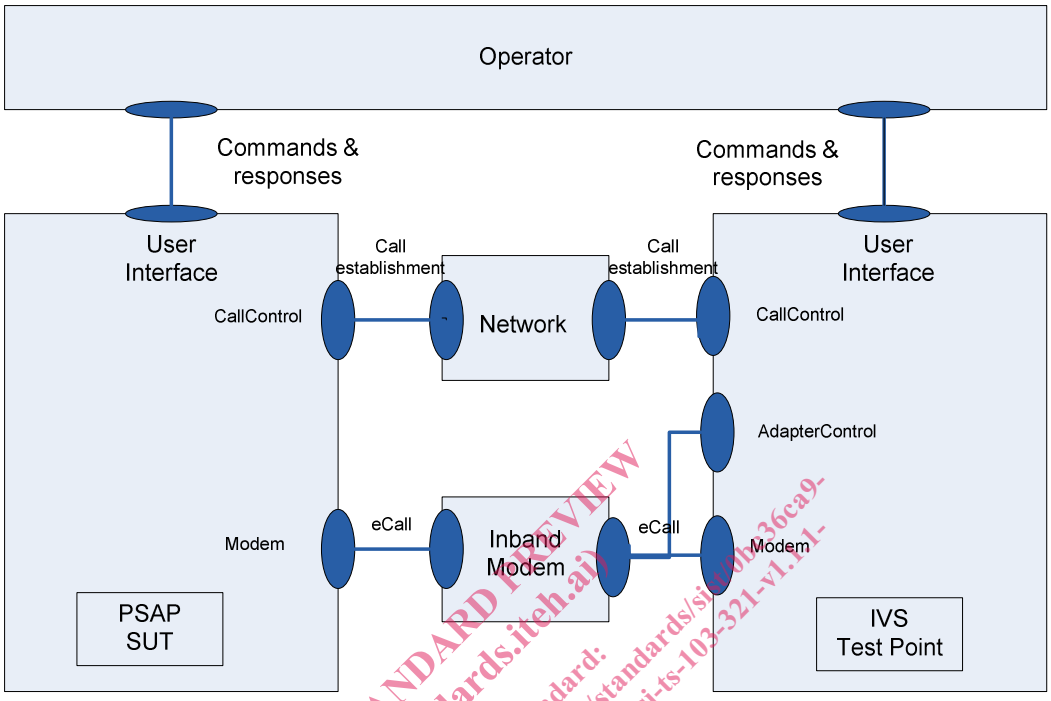

Figure 3

4.2.2.2 TTCN configuration

Figure 4 describes the TTCN configuration for PSAP SUT.

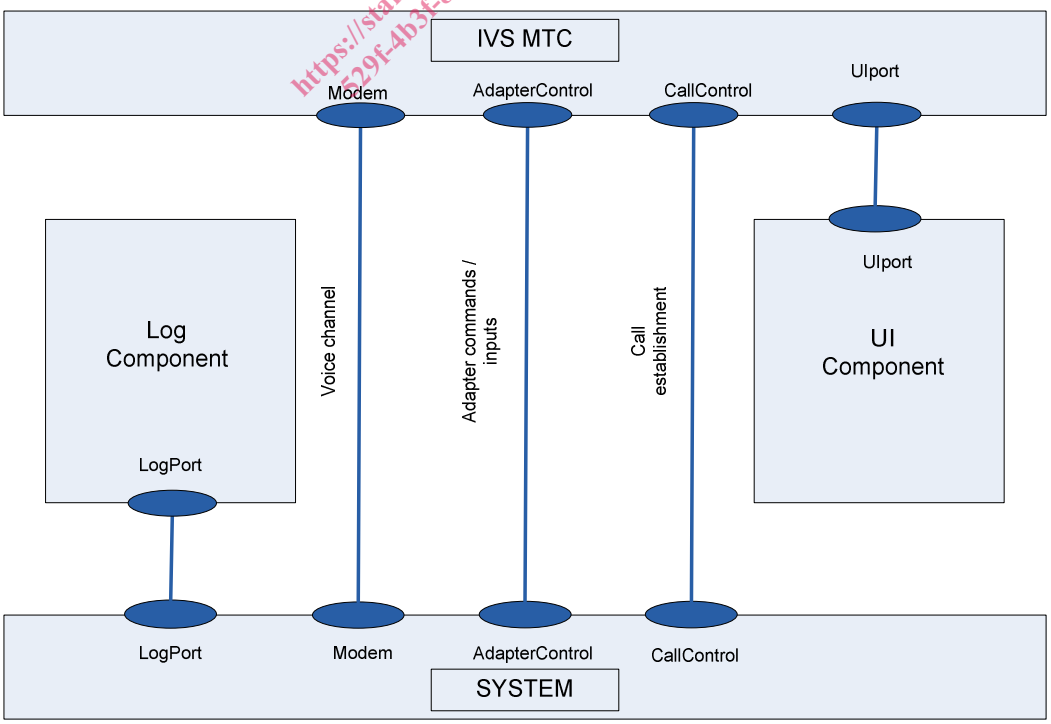

Figure 4

4.3 Ports

The UIPort handles the interaction with the operator by providing a means to display information about required operator actions as well as a way of capturing input from the operator.

Table 1: UIPort

UIPort	
in	ShowMessageBox, MessageBoxSelection
out	ShowMessageBox, MessageBoxSelection

The LogMessagePort is intended for debugging information from the adaptation. Debug messages are processed by the log component to separate them from the main body of the test case and also to provide an efficient means of filtering them out.

Table 2: LogMessagePort

LogMessagePort	
in	LogMessage
out	-

Table 3: ModemPort

ModemPort	
in	ModemEvent, LogMessage
out	SetConfigCmd, InbandRequestMsdCmd, InbandSendAlAckCmd

Table 4: CallControlPort

CallControlPort	
in	CallEvent
out	CallAcceptCmd, CallHangUpCmd, CallRejectBusyCmd, CallCreateCmd, CallCancelCmd

Table 5: AdapterControlPort

AdapterControlPort	
in	AdapterEvent
out	SetConfigCmd

4.4 Messages

4.4.1 In Messages

Table 6: ModemEvent

ModemEvent
Port: ModemPort
InbandMsdReceivedEvent, InbandLlAckSentEvent, InbandLlAckReceivedEvent, InbandAlAckSentEvent, InbandAlAckReceivedEvent, InbandSendSignalReceivedEvent, InbandNackSentEvent, InbandNackReceivedEvent, CallVoiceConnectionEstablishedEvent, InbandStartSignalReceivedEvent, TimerExpiredEvent.