

ETSI TS 101 804-3 V1.1.1 (2002-02)

Technical Specification

**Telecommunications and Internet Protocol
Harmonization Over Networks (TIPHON) Release 3;
Technology compliance specifications;
Part 3: H.225.0 conformance test specifications;
Abstract Test Suite (ATS) and PIXIT proforma specification
for Terminal, Gatekeeper and Gateway**



Reference

DTS/TIPHON-06016-3

Keywords

ATS, gatekeeper, gateway, H.323, IP, PIXIT,
supplementary service, terminal, testing, TTCN,
VoIP

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<http://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, send your comment to:

editor@etsi.fr

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2001.
All rights reserved.

Contents

Intellectual Property Rights	5
Foreword.....	5
1 Scope	6
2 References	6
3 Definitions and abbreviations.....	7
3.1 Definitions	7
3.2 Abbreviations	7
4 Abstract Test Method	8
5 ATS conventions	8
5.1 Version of TTCN used	8
6 ATS to TP map.....	8
7 PCTR conformance	8
8 PIXIT conformance	9
9 ATS conformance	9
Annex A (normative): Protocol Conformance Test Report (PCTR) proforma.....	10
A.1 Identification summary.....	10
A.1.1 Protocol conformance test report.....	10
A.1.2 IUT identification	10
A.1.3 Testing environment.....	11
A.1.4 Limits and reservations	11
A.1.5 Comments.....	11
A.2 IUT conformance status	11
A.3 Static conformance summary	11
A.4 Dynamic conformance summary.....	12
A.5 Static conformance review report.....	12
A.6 Test campaign report.....	13
A.7 Observations.....	21
Annex B (normative): Partial PIXIT proforma	22
B.1 Identification summary.....	22
B.2 Abstract test suite summary	22
B.3 Test laboratory.....	22
B.4 Client (of the test laboratory)	23
B.5 System Under Test (SUT).....	23
B.6 Protocol information.....	24
B.6.1 Protocol identification	24
B.6.2 Configuration to be tested	24
B.6.3 Parameters for RAS testing	24
B.6.3.1 IP port and address information.....	24
B.6.3.2 Addresses and identifiers	25
B.6.3.3 Bandwidth information	26
B.6.3.4 RAS timers.....	26

B.6.3.5	RAS configuration details.....	27
B.6.4	Parameters for basic call control testing.....	27
B.6.4.1	IP port and address information.....	27
B.6.4.2	Basic call control configuration details.....	27
B.6.4.3	Information element values.....	28
B.6.4.4	UUIE parameter values.....	28
B.6.5	Test management timers	29
Annex C (normative):	Abstract Test Suite (ATS)	30
C.1	The TTCN Graphical form (TTCN.GR)	30
C.2	The TTCN Machine Processable form (TTCN.MP).....	30
Annex D (informative):	Bibliography	31
History		32

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://webapp.etsi.org/IPR/home.asp>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This Technical Specification (TS) has been produced by ETSI Project Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON).

The present document is part 3 of a multi-part deliverable covering the H225.0 protocol for Terminal, Gatekeeper and Gateway as identified below:

- Part 1: "Revision/update of H.225.0 Protocol Implementation Conformance Statement (PICS) proforma specification for Terminal, Gatekeeper and Gateway";
- Part 2: "H.225.0 conformance test specifications; Test Suite Structure and Test Purposes (TSS&TP) specification for Terminal, Gatekeeper and Gateway";
- Part 3: "H.225.0 conformance test specifications; Abstract Test Suite (ATS) and PIXIT proforma specification for Terminal, Gatekeeper and Gateway".**

1 Scope

The present document specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma for the H225.0 protocol for Terminal, Gatekeeper and Gateway.

The objective of the present document is to provide conformance tests that give a greater probability of inter-operability. The ATS & PIXIT specification covers the procedures described in ITU-T Recommendation H.323 [3] and ITU-T Recommendation H.225.0 [4].

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [6], ISO/IEC 9646-2 [7] and ISO/IEC 9646-3 [8]) is used as basis for the test methodology.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

- [1] ETSI TS 101 804-1: "Telecommunications and Internet protocol Harmonization Over Networks (TIPHON) Release 3; Release PICS; Revision/Update of H.225.0 PICS for Terminal, Gatekeeper and Gateway".
- [2] ETSI TS 101 804-2: "Telecommunications and Internet protocol Harmonization Over Networks (TIPHON) Release 3; Technology Compliance Specifications; H.225.0 Conformance Test Specifications; Test Suite Structure and Test Purposes (TSS&TP) for Terminal, Gatekeeper and Gateway".
- [3] ITU-T Recommendation H.323 (2000): "Framework and wire-protocol for multiplexed call signalling transport".
- [4] ITU-T Recommendation H.225.0 (2000): "Call signalling protocols and media stream packetization for packet-based multimedia communication systems".
- [5] ITU-T Recommendation Q.931: "ISDN user-network interface layer 3 specification for basic call control".
- [6] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [7] ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".
- [8] ISO/IEC 9646-3: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".
- [9] ISO/IEC 9646-4: "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 4: Test realization".
- [10] ISO/IEC 9646-5: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 5: Requirements on test laboratories and clients for the conformance assessment process".
- [11] ETSI TR 101 666: "Information technology; Open Systems Interconnection Conformance testing methodology and framework; The Tree and Tabular Combined Notation (TTCN) (Ed. 2++)".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions defined in ITU-T Recommendation H.323 [3], in ITU-T Recommendation H.225.0 [4], ISO/IEC 9646-1 [6], ISO/IEC 9646-2 [7] and ISO/IEC 9646-3 [8], and the following apply:

Basic Call Control (BCC): signalling protocol associated with the DSS1 - ISDN Basic Call control procedures of ITU-T Recommendation Q.931

inopportune: test purpose covering a signalling procedure where an inopportune message (type of message not expected in the IUT current state) is sent to the IUT

syntactically invalid: test purpose covering a signalling procedure where a valid (expected in the current status of the IUT) but not correctly encoded (unknown or incorrect parameter values) message is sent to the IUT, which shall react correctly and eventually reject the message

valid: test purpose covering a signalling procedure where all the messages sent to or received from the IUT are valid (expected in the current status of the IUT) and correctly encoded

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ATS	Abstract Test Suite
BCC	Basic Call Control
DGK	Destination GateKeeper
DSS1	Digital Signalling System 1
GDR	Gatekeeper Discovery Request
GK	GateKeeper
GRQ	Gatekeeper ReQuest
I	Inopportune
IP	Internet Protocol
ISDN	Integrated Services Digital Network
IUT	Implementation Under Test
MOT	Mean Of Testing
MTC	Main Test Component
PCTR	Protocol Conformance Testing Report
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
PTC	Parallel Test Component
RAS	Registration, Admission and Status
REG	REGistration
RRQ	Register ReQuest
S	Syntactically invalid
STA	STatus
SUT	System Under Test
TCP	Transmission Control Protocol
TE	TErминаl
TP	Test Purpose
TSS	Test Suite Structure
TTCN	Testing and Test Control Notation
UDP	User Datagram Protocol
URQ	Unregistration ReQuest
UUIE	User-User Information Element
V	Valid

4 Abstract Test Method

The remote test method is applied for this ATS.

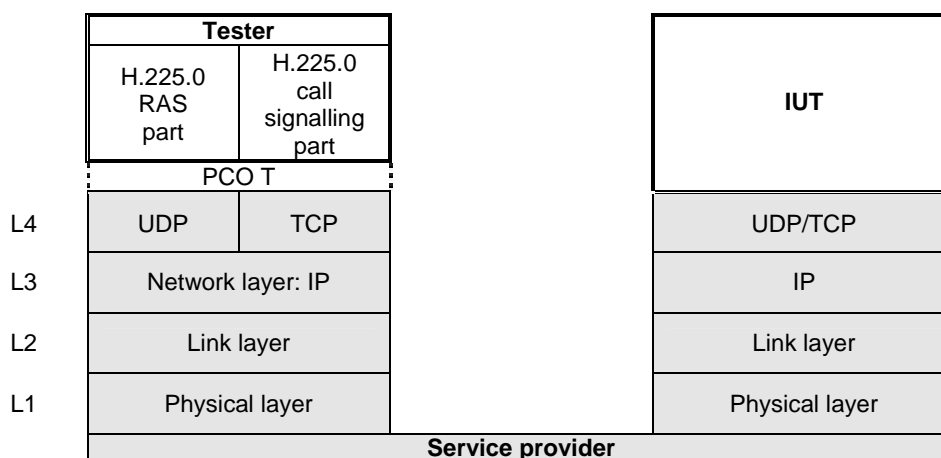


Figure 1: Remote test method with PCO T

A Point of Control and Observation (PCO) resides between the layer 4 and the tester, which executes the signalling procedures corresponding to the test case dynamic behaviour. This PCO is named "T" because it is located above the transport layer. The L PCO is used to control and observe the behaviour of the Implementation Under Test (IUT) using the layers of the Service provider.

5 ATS conventions

5.1 Version of TTCN used

The version of TTCN used is that defined in TR 101 666 [11].

6 ATS to TP map

The identifiers used for the TPs are reused as test case names. Thus there is a straightforward one-to-one mapping.

7 PCTR conformance

A test laboratory, when requested by a client to produce a PCTR, is required, as specified in ISO/IEC 9646-5 [10], to produce a PCTR conformant with the PCTR template given in annex B of ISO/IEC 9646-5 [10].

Furthermore, a test laboratory, offering testing for the ATS specification contained in annex C, when requested by a client to produce a PCTR, is required to produce a PCTR conformant with the PCTR proforma contained in annex A.

A PCTR which conforms to this PCTR proforma specification shall preserve the content and ordering of the clauses contained in annex A. Clause A.6 of the PCTR may contain additional columns. If included, these shall be placed to the right of the existing columns. Text in italics may be retained by the test laboratory.

8 PIXIT conformance

A test realizer, producing an executable test suite for the ATS specification contained in annex C, is required, as specified in ISO/IEC 9646-4 [9], to produce an augmented partial PIXIT proforma conformant with this partial PIXIT proforma specification.

An augmented partial PIXIT proforma which conforms to this partial PIXIT proforma specification shall, as a minimum, have contents which are technically equivalent to annex B. The augmented partial PIXIT proforma may contain additional questions that need to be answered in order to prepare the Means Of Testing (MOT) for a particular IUT.

A test laboratory, offering testing for the ATS specification contained in annex C, is required, as specified in ISO/IEC 9646-5 [10], to further augment the augmented partial PIXIT proforma to produce a PIXIT proforma conformant with this partial PIXIT proforma specification.

A PIXIT proforma which conforms to this partial PIXIT proforma specification shall, as a minimum, have contents which are technically equivalent to annex B. The PIXIT proforma may contain additional questions that need to be answered in order to prepare the test laboratory for a particular IUT.

9 ATS conformance

The test realizer, producing MOT and ETS for this ATS specification, shall comply with the requirements of ISO/IEC 9646-4 [9]. In particular, these concern the realization of an ETS based on each ATS. The test realizer shall provide a statement of conformance of the MOT to this ATS specification.

An ETS which conforms to this ATS specification shall contain test groups and test cases which are technically equivalent to those contained in the ATS in annex C. All sequences of test events comprising an abstract test case shall be capable of being realized in the executable test case. Any further checking which the test system might be capable of performing is outside the scope of this ATS specification and shall not contribute to the verdict assignment for each test case.

Test laboratories running conformance test services using this ATS shall comply with ISO/IEC 9646-5 [10].

A test laboratory which claims to conform to this ATS specification shall use an MOT which conforms to this ATS.

Annex A (normative): Protocol Conformance Test Report (PCTR) proforma

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document may freely reproduce the PCTR proforma in this annex so that it can be used for its intended purposes and may further publish the completed PCTR.
--

A.1 Identification summary

A.1.1 Protocol conformance test report

PCTR number:	
PCTR date:	
Corresponding SCTR number:	
Corresponding SCTR date:	
Test laboratory identification:	
Test laboratory manager:	
Signature:	

A.1.2 IUT identification

Name:	
Version:	
Protocol specification:	ITU-T Recommendation H.225
PICS:	
Previous PCTRs (if any):	

A.1.3 Testing environment

PIXIT reference number:	
ATS specification:	TS 101 804-3
Abstract test method:	Multi-party test method (see ISO/IEC 9646-2)
Means of testing identification:	
Dates of testing:	
Conformance log reference(s):	
Retention date for log reference(s):	

A.1.4 Limits and reservations

Additional information relevant to the technical contents or further use of the test report, or to the rights and obligations of the test laboratory and the client, may be given here. Such information may include restriction on the publication of the report.

.....

.....

.....

.....

A.1.5 Comments

Additional comments may be given by either the client or the test laboratory on any of the contents of the PCTR, for example, to note disagreement between the two parties.

.....

.....

.....

.....

A.2 IUT conformance status

This IUT has/has not been shown by conformance assessment to be non-conforming to the specified protocol specification.

Strike the appropriate words in this sentence. If the PICS for this IUT is consistent with the static conformance requirements (as specified in clause A.3 of the present document) and there are no "FAIL" verdicts to be recorded (in clause A.6) strike the words "has", otherwise strike the words "has not".

A.3 Static conformance summary

The PICS for this IUT is/is not consistent with the static conformance requirements in the specified protocol.

Strike the appropriate words in this sentence.

A.4 Dynamic conformance summary

The test campaign did/did not reveal errors in the IUT.

Strike the appropriate words in this sentence. If there are no "FAIL" verdicts to be recorded (in clause A.6 of the present document) strike the word "did", otherwise strike the words "did not".

Summary of the results of groups of tests:

.....
.....
.....
.....

A.5 Static conformance review report

If clause A.3 indicates non-conformance, this clause itemizes the mismatches between the PICS and the static conformance requirements of the specified protocol specification.

.....
.....
.....
.....
.....
.....

A.6 Test campaign report

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
RAS testing - terminal				
RAS_TE_GDR_001				
RAS_TE_GDR_002				
RAS_TE_GDR_003				
RAS_TE_GDR_004				
RAS_TE_GDR_005				
RAS_TE_GDR_006				
RAS_TE_GDR_007				
RAS_TE_GDR_008				
RAS_TE_GDR_009				
RAS_TE_GDR_010				
RAS_TE_REG_001				
RAS_TE_REG_002				
RAS_TE_REG_003				
RAS_TE_REG_004				
RAS_TE_REG_005				
RAS_TE_REG_006				
RAS_TE_REG_007				
RAS_TE_REG_008				
RAS_TE_REG_009				
RAS_TE_REG_010				
RAS_TE_REG_011				
RAS_TE_REG_012				
RAS_TE_REG_013				
RAS_TE_REG_014				
RAS_TE_REG_015				
RAS_TE_REG_016				
RAS_TE_ADM_001				
RAS_TE_ADM_002				
RAS_TE_ADM_003				
RAS_TE_ADM_004				
RAS_TE_ADM_005				
RAS_TE_ADM_006				
RAS_TE_ADM_007				
RAS_TE_ADM_008				
RAS_TE_ADM_009				
RAS_TE_ADM_010				
RAS_TE_ADM_011				
RAS_TE_ADM_012				
RAS_TE_ADM_013				
RAS_TE_ADM_014				
RAS_TE_ADM_015				
RAS_TE_ADM_016				
RAS_TE_LOC_001				
RAS_TE_LOC_002				
RAS_TE_LOC_003				
RAS_TE_LOC_004				
RAS_TE_LOC_005				
RAS_TE_LOC_006				
RAS_TE_LOC_007				
RAS_TE_LOC_008				
RAS_TE_LOC_009				
RAS_TE_BND_001				
RAS_TE_BND_002				
RAS_TE_BND_003				
RAS_TE_BND_004				
RAS_TE_BND_005				
RAS_TE_BND_006				
RAS_TE_BND_007				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
RAS_TE_BND_008				
RAS_TE_BND_009				
RAS_TE_URG_001				
RAS_TE_URG_002				
RAS_TE_URG_003				
RAS_TE_URG_004				
RAS_TE_URG_005				
RAS_TE_URG_006				
RAS_TE_URG_007				
RAS_TE_URG_008				
RAS_TE_URG_009				
RAS_TE_URG_010				
RAS_TE_DIS_001				
RAS_TE_DIS_002				
RAS_TE_DIS_003				
RAS_TE_DIS_004				
RAS_TE_DIS_005				
RAS_TE_DIS_006				
RAS_TE_DIS_007				
RAS_TE_DIS_008				
RAS_TE_DIS_009				
RAS_TE_STA_001				
RAS_TE_STA_002				
RAS_TE_STA_003				
RAS_TE_STA_004				
RAS_TE_STA_005				
RAS_TE_STA_006				
RAS_TE_STA_007				
RAS_TE_STA_008				
RAS_TE_STA_009				
RAS_TE_RIP_001				
RAS_TE_RIP_002				
RAS_TE_RIP_003				
RAS_TE_RIP_004				
RAS_TE_RIP_005				
RAS_TE_RIP_006				
RAS_TE_RIP_007				
RAS_TE_RIP_008				
RAS_TE_RIP_009				
RAS_TE_RIP_010				
RAS_TE_RIP_011				
RAS_TE_RIP_012				
RAS_TE_RIP_013				
RAS_TE_RIP_014				
RAS_TE_RIP_015				
RAS_TE_RIP_016				
RAS_TE_RIP_017				
RAS_TE_RIP_018				
RAS_TE_RIP_019				
RAS_TE_RIP_020				
RAS_TE_RIP_021				
RAS_TE_RIP_022				
RAS_TE_RIP_023				
RAS_TE_RIP_024				
RAS_TE_RIP_025				
RAS_TE_RIP_026				
RAS_TE_RIP_027				
RAS_TE_RIP_028				
RAS_TE_RIP_029				
RAS_TE_RIP_030				
RAS_TE_RIP_031				
RAS_TE_RIP_032				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
RAS testing - gatekeeper				
RAS_GK_GDR_001				
RAS_GK_GDR_002				
RAS_GK_GDR_003				
RAS_GK_GDR_004				
RAS_GK_GDR_005				
RAS_GK_GDR_006				
RAS_GK_GDR_007				
RAS_GK_GDR_008				
RAS_GK_REG_001				
RAS_GK_REG_002				
RAS_GK_REG_003				
RAS_GK_REG_004				
RAS_GK_REG_005				
RAS_GK_REG_006				
RAS_GK_REG_007				
RAS_GK_REG_008				
RAS_GK_REG_009				
RAS_GK_REG_010				
RAS_GK_REG_011				
RAS_GK_REG_012				
RAS_GK_REG_013				
RAS_GK_REG_016				
RAS_GK_ADM_001				
RAS_GK_ADM_002				
RAS_GK_ADM_003				
RAS_GK_ADM_004				
RAS_GK_ADM_005				
RAS_GK_ADM_006				
RAS_GK_ADM_007				
RAS_GK_LOC_001				
RAS_GK_LOC_002				
RAS_GK_LOC_003				
RAS_GK_LOC_004				
RAS_GK_LOC_005				
RAS_GK_LOC_006				
RAS_GK_LOC_007				
RAS_GK_LOC_008				
RAS_GK_LOC_009				
RAS_GK_LOC_010				
RAS_GK_BND_001				
RAS_GK_BND_002				
RAS_GK_BND_003				
RAS_GK_BND_004				
RAS_GK_BND_005				
RAS_GK_BND_006				
RAS_GK_BND_007				
RAS_GK_URG_001				
RAS_GK_URG_002				
RAS_GK_URG_003				
RAS_GK_URG_004				
RAS_GK_URG_005				
RAS_GK_URG_006				
RAS_GK_URG_007				
RAS_GK_URG_008				
RAS_GK_URG_009				
RAS_GK_DIS_001				
RAS_GK_DIS_002				
RAS_GK_DIS_003				
RAS_GK_DIS_004				
RAS_GK_DIS_005				
RAS_GK_DIS_006				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
RAS_GK_STA_001				
RAS_GK_STA_002				
RAS_GK_STA_003				
RAS_GK_STA_004				
RAS_GK_RIP_001				
RAS_GK_RIP_002				
RAS_GK_RIP_003				
RAS_GK_RIP_004				
RAS_GK_RIP_005				
RAS_GK_RIP_006				
RAS_GK_RIP_007				
RAS_GK_RIP_008				
RAS_GK_RIP_009				
RAS_GK_RIP_010				
RAS_GK_RIP_011				
RAS_GK_RIP_012				
Basic call testing - terminal				
BCC_TE_PHA_V_01				
BCC_TE_PHA_V_02				
BCC_TE_PHA_V_03				
BCC_TE_PHA_V_04				
BCC_TE_PHA_V_05				
BCC_TE_PHA_V_06				
BCC_TE_PHA_V_07				
BCC_TE_PHA_V_08				
BCC_TE_PHA_V_09				
BCC_TE_PHA_V_10				
BCC_TE_PHA_V_11				
BCC_TE_PHA_V_12				
BCC_TE_PHA_V_13				
BCC_TE_PHA_V_14				
BCC_TE_PHA_V_15				
BCC_TE_PHA_V_16				
BCC_TE_PHA_V_17				
BCC_TE_PHA_V_18				
BCC_TE_PHA_V_19				
BCC_TE_PHA_V_20				
BCC_TE_PHA_V_21				
BCC_TE_PHA_V_22				
BCC_TE_PHA_V_23				
BCC_TE_PHA_V_24				
BCC_TE_PHA_V_25				
BCC_TE_PHA_V_26				
BCC_TE_PHA_V_27				
BCC_TE_PHA_V_28				
BCC_TE_PHA_V_29				
BCC_TE_PHA_V_30				
BCC_TE_PHA_V_31				
BCC_TE_PHA_V_32				
BCC_TE_PHA_V_33				
BCC_TE_PHA_V_34				
BCC_TE_PHA_V_35				
BCC_TE_PHA_I_01				
BCC_TE_PHA_I_02				
BCC_TE_PHA_I_03				
BCC_TE_PHA_I_04				
BCC_TE_PHA_I_05				
BCC_TE_PHA_I_06				
BCC_TE_PHA_I_07				
BCC_TE_PHA_I_08				
BCC_TE_PHA_I_09				
BCC_TE_PHA_I_10				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
BCC_TE_PHA_I_11				
BCC_TE_PHA_I_12				
BCC_TE_PHA_I_13				
BCC_TE_PHA_I_14				
BCC_TE_PHA_I_15				
BCC_TE_PHA_I_16				
BCC_TE_PHA_I_17				
BCC_TE_PHA_I_18				
BCC_TE_PHA_I_19				
BCC_TE_PHA_I_20				
BCC_TE_PHA_I_21				
BCC_TE_PHA_I_22				
BCC_TE_PHA_I_23				
BCC_TE_PHA_I_24				
BCC_TE_PHA_I_25				
BCC_TE_PHA_I_26				
BCC_TE_PHA_I_27				
BCC_TE_PHA_I_28				
BCC_TE_PHA_I_29				
BCC_TE_PHA_I_30				
BCC_TE_PHA_I_31				
BCC_TE_PHA_I_32				
BCC_TE_PHA_I_33				
BCC_TE_PHA_I_34				
BCC_TE_PHA_I_35				
BCC_TE_PHA_S_01				
BCC_TE_PHA_S_02				
BCC_TE_PHA_S_03				
BCC_TE_PHA_S_04				
BCC_TE_PHA_S_05				
BCC_TE_PHA_S_06				
BCC_TE_PHA_S_07				
BCC_TE_PHA_S_08				
BCC_TE_PHA_S_09				
BCC_TE_PHA_S_10				
BCC_TE_PHA_S_11				
BCC_TE_PHA_S_12				
BCC_TE_PHA_S_13				
BCC_TE_PHA_S_14				
BCC_TE_PHA_S_15				
BCC_TE_PHA_S_16				
BCC_TE_PHA_S_17				
BCC_TE_PHA_S_18				
BCC_TE_PHA_S_19				
BCC_TE_PHA_S_20				
BCC_TE_PHE_V_01I				
BCC_TE_PHE_V_01O				
BCC_TE_PHE_V_02I				
BCC_TE_PHE_V_02O				
BCC_TE_PHE_V_03I				
BCC_TE_PHE_V_03O				
BCC_TE_PHE_I_01				
BCC_TE_PHE_I_02				
BCC_TE_PHE_S_01				
BCC_TE_PHE_S_02				
BCC_TE_PHE_S_03				
BCC_TE_PHE_S_04				
BCC_TE_PHE_S_05				
BCC_TE_PHE_S_06				
BCC_TE_PHE_S_07				
BCC_TE_PHE_S_08				
BCC_TE_PHE_S_09				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
BCC_TE_PHE_S_10				
BCC_TE_PHE_S_11				
BCC_TE_PHE_S_12				
BCC_TE_PHE_S_13				
Basic call testing - gatekeeper				
BCC_GK_PHA_V_01				
BCC_GK_PHA_V_02				
BCC_GK_PHA_V_03				
BCC_GK_PHA_V_04				
BCC_GK_PHA_V_05				
BCC_GK_PHA_V_06				
BCC_GK_PHA_V_07				
BCC_GK_PHA_V_08				
BCC_GK_PHA_V_09				
BCC_GK_PHA_V_10				
BCC_GK_PHA_V_11				
BCC_GK_PHA_V_12				
BCC_GK_PHA_V_13				
BCC_GK_PHA_V_14				
BCC_GK_PHA_V_15				
BCC_GK_PHA_V_16				
BCC_GK_PHA_V_17				
BCC_GK_PHA_V_18				
BCC_GK_PHA_V_19				
BCC_GK_PHA_V_20				
BCC_GK_PHA_V_21				
BCC_GK_PHA_V_22				
BCC_GK_PHA_V_23				
BCC_GK_PHA_V_24				
BCC_GK_PHA_V_25				
BCC_GK_PHA_V_26				
BCC_GK_PHA_V_27				
BCC_GK_PHA_V_28				
BCC_GK_PHA_I_01				
BCC_GK_PHA_I_02				
BCC_GK_PHA_I_03				
BCC_GK_PHA_I_04				
BCC_GK_PHA_I_05				
BCC_GK_PHA_I_06				
BCC_GK_PHA_I_07				
BCC_GK_PHA_I_08				
BCC_GK_PHA_I_09				
BCC_GK_PHA_I_10				
BCC_GK_PHA_I_11				
BCC_GK_PHA_I_12				
BCC_GK_PHA_I_13				
BCC_GK_PHA_I_14				
BCC_GK_PHA_I_15				
BCC_GK_PHA_I_16				
BCC_GK_PHA_I_17				
BCC_GK_PHA_I_18				
BCC_GK_PHA_I_19				
BCC_GK_PHA_I_20				
BCC_GK_PHA_I_21				
BCC_GK_PHA_I_22				
BCC_GK_PHA_I_23				
BCC_GK_PHA_I_24				
BCC_GK_PHA_I_25				
BCC_GK_PHA_I_26				
BCC_GK_PHA_I_27				
BCC_GK_PHA_I_28				
BCC_GK_PHA_I_29				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
BCC_GK_PHA_I_30				
BCC_GK_PHA_I_31				
BCC_GK_PHA_I_32				
BCC_GK_PHA_I_33				
BCC_GK_PHA_I_34				
BCC_GK_PHA_I_35				
BCC_GK_PHA_I_36				
BCC_GK_PHA_I_37				
BCC_GK_PHA_S_01				
BCC_GK_PHA_S_02				
BCC_GK_PHA_S_03				
BCC_GK_PHA_S_04				
BCC_GK_PHA_S_05				
BCC_GK_PHA_S_06				
BCC_GK_PHA_S_07				
BCC_GK_PHA_S_08				
BCC_GK_PHA_S_09				
BCC_GK_PHA_S_10				
BCC_GK_PHA_S_11				
BCC_GK_PHA_S_12				
BCC_GK_PHA_S_13				
BCC_GK_PHA_S_14				
BCC_GK_PHA_S_15				
BCC_GK_PHA_S_16				
BCC_GK_PHA_S_17				
BCC_GK_PHA_S_18				
BCC_GK_PHA_S_19				
BCC_GK_PHA_S_20				
BCC_GK_PHE_V_01				
BCC_GK_PHE_V_02				
BCC_GK_PHE_V_03				
BCC_GK_PHE_V_04				
BCC_GK_PHE_I_01				
BCC_GK_PHE_I_02				
BCC_GK_PHE_S_01				
BCC_GK_PHE_S_02				
BCC_GK_PHE_S_03				
BCC_GK_PHE_S_04				
BCC_GK_PHE_S_05				
BCC_GK_PHE_S_06				
BCC_GK_PHE_S_07				
BCC_GK_PHE_S_08				
BCC_GK_PHE_S_09				
BCC_GK_PHE_S_10				
BCC_GK_PHE_S_11				
BCC_GK_PHE_S_12				
BCC_GK_PHE_S_13				
Basic call testing - destination gatekeeper				
BCC_DGK_PHA_V_01				
BCC_DGK_PHA_V_02				
BCC_DGK_PHA_V_03				
BCC_DGK_PHA_V_04				
BCC_DGK_PHA_V_05				
BCC_DGK_PHA_V_06				
BCC_DGK_PHA_V_07				
BCC_DGK_PHA_V_08				
BCC_DGK_PHA_V_09				
BCC_DGK_PHA_V_10				
BCC_DGK_PHA_V_11				
BCC_DGK_PHA_V_12				
BCC_DGK_PHA_V_13				
BCC_DGK_PHA_V_14				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
BCC_DGK_PHA_V_15				
BCC_DGK_PHA_V_16				
BCC_DGK_PHA_V_17				
BCC_DGK_PHA_V_18				
BCC_DGK_PHA_V_19				
BCC_DGK_PHA_V_20				
BCC_DGK_PHA_V_21				
BCC_DGK_PHA_I_01				
BCC_DGK_PHA_I_02				
BCC_DGK_PHA_I_03				
BCC_DGK_PHA_I_04				
BCC_DGK_PHA_I_05				
BCC_DGK_PHA_I_06				
BCC_DGK_PHA_I_07				
BCC_DGK_PHA_I_08				
BCC_DGK_PHA_I_09				
BCC_DGK_PHA_I_10				
BCC_DGK_PHA_I_11				
BCC_DGK_PHA_I_12				
BCC_DGK_PHA_I_13				
BCC_DGK_PHA_I_14				
BCC_DGK_PHA_I_15				
BCC_DGK_PHA_I_16				
BCC_DGK_PHA_I_17				
BCC_DGK_PHA_I_18				
BCC_DGK_PHA_I_19				
BCC_DGK_PHA_I_20				
BCC_DGK_PHA_I_21				
BCC_DGK_PHA_I_22				
BCC_DGK_PHA_I_23				
BCC_DGK_PHA_I_24				
BCC_DGK_PHA_I_25				
BCC_DGK_PHA_I_26				
BCC_DGK_PHA_I_27				
BCC_DGK_PHA_I_28				
BCC_DGK_PHA_I_29				
BCC_DGK_PHA_I_30				
BCC_DGK_PHA_I_31				
BCC_DGK_PHA_I_32				
BCC_DGK_PHA_I_33				
BCC_DGK_PHA_I_34				
BCC_DGK_PHA_I_35				
BCC_DGK_PHA_I_36				
BCC_DGK_PHA_I_37				
BCC_DGK_PHA_S_01				
BCC_DGK_PHA_S_02				
BCC_DGK_PHA_S_03				
BCC_DGK_PHA_S_04				
BCC_DGK_PHA_S_05				
BCC_DGK_PHA_S_06				
BCC_DGK_PHA_S_07				
BCC_DGK_PHA_S_08				
BCC_DGK_PHA_S_09				
BCC_DGK_PHA_S_10				
BCC_DGK_PHA_S_11				
BCC_DGK_PHA_S_12				
BCC_DGK_PHA_S_13				
BCC_DGK_PHA_S_14				
BCC_DGK_PHA_S_15				
BCC_DGK_PHA_S_16				
BCC_DGK_PHA_S_17				
BCC_DGK_PHA_S_18				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
BCC_DGK_PHA_S_19				
BCC_DGK_PHA_S_20				
BCC_DGK_PHE_V_01				
BCC_DGK_PHE_V_02				
BCC_DGK_PHE_V_03				
BCC_DGK_PHE_V_04				
BCC_DGK_PHE_I_01				
BCC_DGK_PHE_I_02				
BCC_DGK_PHE_S_01				
BCC_DGK_PHE_S_02				
BCC_DGK_PHE_S_03				
BCC_DGK_PHE_S_04				
BCC_DGK_PHE_S_05				
BCC_DGK_PHE_S_06				
BCC_DGK_PHE_S_07				
BCC_DGK_PHE_S_08				
BCC_DGK_PHE_S_09				
BCC_DGK_PHE_S_10				
BCC_DGK_PHE_S_11				
BCC_DGK_PHE_S_12				
BCC_DGK_PHE_S_13				

A.7 Observations

Additional information relevant to the technical content of the PCTR are given here.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Annex B (normative): Partial PIXIT proforma

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document may freely reproduce the partial PIXIT proforma in this annex so that it can be used for its intended purposes and may further publish the completed PIXIT.

B.1 Identification summary

PIXIT number:

.....

Test laboratory name:

.....

Date of issue:

.....

Issued to:

.....

B.2 Abstract test suite summary

Protocol specification: ITU-T Recommendation H.225

ATS specification: TS 101 804-3

Abstract test method: Remote test method (see ISO/IEC 9646-2)

B.3 Test laboratory

Test laboratory identification:

.....

Accreditation status of the test service:

.....

Accreditation reference:

.....

Test laboratory manager:

.....

Test laboratory contact:

.....

Means of testing:

.....

Test laboratory instructions for completion:

.....

B.4 Client (of the test laboratory)

Client identification:

.....

Client test manager:

.....

Client contact:

.....

Test facilities required:

.....

B.5 System Under Test (SUT)

Name:

.....

Version:

.....

SCS reference:

.....

Machine configuration:

.....

Operating system identification:

.....

IUT identification:

.....

PICS (all layers):

.....

Limitations of the SUT:

.....

Environmental conditions:

.....

B.6 Protocol information

NOTE: The types referred to in the tables of this clause are defined in annex H of ITU-T Recommendation H.225.

B.6.1 Protocol identification

Specification reference: ITU-T Recommendation H.225

Protocol version: V4

PICS reference: TS 101 804-1

B.6.2 Configuration to be tested

Table B.1: Configuration to be tested

Item	Configuration Is the access to be tested ...	Supported Y/N
1.1	behaving like a TIPHON compliant terminal?	
1.2	behaving like a TIPHON compliant gatekeeper?	

B.6.3 Parameters for RAS testing

B.6.3.1 IP port and address information

Table B.2: IP ports and addresses

Item	Give a value for the ...	Type	Value
IP ports/addresses at the tester's access related to the Main Test Component (MTC)			
2.1.1	IP port of the tester for unicast communication.	INTEGER(0 .. 65535)	
2.1.2	IP address of the tester for unicast communication.	OCTETSTRING(SIZE(4))	
2.2.1	IP port (well-known discovery multicast port) of the tester for multicast communication.	INTEGER(0 .. 65535)	
2.2.2	IP address (well-known discovery multicast address) of the tester for multicast communication.	OCTETSTRING(SIZE(4))	
2.3.1	IP port of the tester for basic call control communication.	INTEGER(0 .. 65535)	
2.3.2	IP address of the tester for basic call control communication.	OCTETSTRING(SIZE(4))	
IP ports/addresses at the tester's access related to the Parallel Test Component (PTC)			
2.4.1	IP port of the tester for unicast communication.	INTEGER(0 .. 65535)	
2.4.2	IP address of the tester for unicast communication.	OCTETSTRING(SIZE(4))	
2.5.1	IP port (well-known discovery multicast port) of the tester for multicast communication.	INTEGER(0 .. 65535)	
2.5.2	IP address (well-known discovery multicast address) of the tester for multicast communication.	OCTETSTRING(SIZE(4))	
2.6.1	IP port of the tester for basic call control communication.	INTEGER(0 .. 65535)	
2.6.2	IP address of the tester for basic call control communication.	OCTETSTRING(SIZE(4))	
IP ports/addresses for the IUT			
2.7.1	initial IP port of the IUT for unicast communication.	INTEGER(0 .. 65535)	
2.7.2	initial IP address of the IUT for unicast communication.	OCTETSTRING(SIZE(4))	
2.8.1	IP port (well-known discovery multicast port) of the IUT for multicast communication.	INTEGER(0 .. 65535)	
2.8.2	IP address (well-known discovery multicast address) of the IUT for multicast communication.	OCTETSTRING(SIZE(4))	

Item	Give a value for the ...	Type	Value
IP ports/addresses of the alternative gatekeeper at the tester side			
2.9.1	IP port of the alternative gatekeeper.	INTEGER(0 .. 65535)	
2.9.2	IP address of the alternative gatekeeper.	OCTETSTRING(SIZE(4))	
IP ports/addresses of the alternative gatekeeper at the IUT side			
2.10.1	IP port of the alternative gatekeeper.	INTEGER(0 .. 65535)	
2.10.2	IP address of the alternative gatekeeper.	OCTETSTRING(SIZE(4))	

B.6.3.2 Addresses and identifiers

Table B.3: Addresses and identifiers

Item	Give a value for the ...	Type	Value
Addresses/identifiers at the tester's access related to the MTC			
3.1	gatekeeper identifier of the tester with the IUT in the terminal role.	GatekeeperIdentifier	
3.2	RAS transport address of the tester with the IUT in the terminal role, used for registration and status messages.	TransportAddress	
3.3	RAS transport address of the tester.	TransportAddress	
3.4	alternative gatekeeper identifier of the tester with the IUT in the terminal role.	GatekeeperIdentifier	
3.5	alternative gatekeeper RAS transport address.	TransportAddress	
3.6	RAS transport address of the tester with the IUT in the gatekeeper role.	TransportAddress	
3.7	call signal address of the tester with the IUT in the gatekeeper role.	TransportAddress	
3.8	alternative terminal RAS transport address.	TransportAddress	
3.9	alternative terminal call signal address.	TransportAddress	
3.10	RAS transport address for a terminal not allowed to register with the IUT in the gatekeeper role.	TransportAddress	
3.11	call signal address for a terminal not allowed to register with the IUT in the gatekeeper role.	TransportAddress	
3.12	Endpoint alias that will be sent to the IUT in the gatekeeper role in GRQ or ARQ messages.	AliasAdress	
3.13	endpoint vendor identifier that will be sent to the IUT in the gatekeeper role in RRQ messages.	VendorIdentifier	
3.14	alias for a called address that will be sent to the IUT to cause the sending of a LRQ in unicast mode.	AliasAdress	
3.15	alias for a called address that will be sent to the IUT to cause the sending of a LRQ in multicast mode.	AliasAdress	
3.16	alias for a called address that will be sent to the IUT to cause the sending of a LRQ in any mode.	AliasAdress	
Addresses/identifiers at the tester's access related to the PTC			
3.17	RAS transport address of the tester with the IUT in the gatekeeper role.	TransportAddress	
3.18	call signal address of the tester with the IUT in the gatekeeper role.	TransportAddress	
Addresses/identifiers at the IUT			
3.19	RAS transport address of the IUT.	TransportAddress	
3.20	call signal address of the IUT.	TransportAddress	
3.21	endpoint identifier provided to the IUT in the terminal role.	EndpointIdentifier	
3.22	gatekeeper identifier of the IUT in the gatekeeper role.	GatekeeperIdentifier	

B.6.3.3 Bandwidth information

Table B.4: Bandwidth information

Item	Give a value for the ...	Type	Value
4.1	bandwidth that can be requested in ARG messages from the IUT in the gatekeeper role.	Bandwidth	
4.2	bandwidth that is greater than the bandwidth allowed.	Bandwidth	
4.3	bandwidth that is lower than the bandwidth allowed.	Bandwidth	
4.4	irrFeguency to be sent to the IUT in ACF messages.	INTEGER(1 .. 65535)	

B.6.3.4 RAS timers

Table B.5: RAS timers

Item	RAS Timer Give a value for the timer that is used to wait for...	Value (in seconds)
5.1	the test operator to cause the IUT in the terminal role to send a GRQ message.	
5.2	the test operator to cause the IUT in the terminal role to send a LRQ message.	
5.3	the test operator to cause the IUT in the terminal role to send a BRQ message.	
5.4	the test operator to cause the IUT in the terminal role to send a RRQ message.	
5.5	the test operator to cause the IUT in the terminal role to send a URQ message.	
5.6	the test operator to cause the IUT in the terminal role to send a IRQ message.	
5.7	the IUT to repeat the GRQ message.	
5.8	the IUT to repeat the RRQ message.	
5.9	the IUT to repeat the ARQ message.	
5.10	the IUT to repeat the LRQ message.	
5.11	the IUT to repeat the BRQ message.	
5.12	the IUT to repeat the URQ message.	
5.13	the IUT to repeat the DRQ message.	
5.14	the IUT to repeat the IRR message.	
5.15	the establishment of an incoming call.	

B.6.3.5 RAS configuration details

Table B.6: Configuration details

Item	Configuration details	Supported Y/N
6.1	Is the gatekeeper discovery done manually?	
6.2	Is the GRQ sent in unicast mode?	
6.3	Is the GRQ sent in multicast mode?	
6.4	Is the RRQ sent automatically after the GRQ?	
6.5	Is the LRQ sent in unicast mode?	
6.6	Is the LRQ sent in multicast mode?	
6.7	Can a call be started?	
6.8	Can the BRQ be sent?	
6.9	Can a request to raise the bandwidth be accepted?	
6.10	Can a call be started only by a test operator?	
6.11	Can a call be released only by a test operator?	
6.12	Can only a test operator force the IUT in the terminal role to send a GRQ?	
6.13	Can only a test operator force the IUT in the terminal role to send a LRQ?	
6.14	Can only a test operator force the IUT in the terminal role to send a BRQ?	
6.15	Can only a test operator force the IUT in the terminal role to send a URQ?	
6.16	Can only a test operator force the IUT in the terminal role to send a IRQ?	

NOTE: The above questions refer to actions/adjustment at the IUT that have to be done by the test operator.

B.6.4 Parameters for basic call control testing

B.6.4.1 IP port and address information

Table B.7: IP ports and addresses

Item	Give a value for the ...	Type	Value
7.1.1	IP port of the entity acting as terminal.	INTEGER(0 .. 65535)	
7.1.2	IP address of the entity acting as terminal.	OCTETSTRING(SIZE(4))	
7.2.1	IP port of the entity acting as gatekeeper.	INTEGER(0 .. 65535)	
7.2.2	IP address of the entity acting as gatekeeper.	OCTETSTRING(SIZE(4))	

B.6.4.2 Basic call control configuration details

Table B.8: Configuration details

Item	Configuration details Is the access to be tested ...	Supported Y/N
8.1	stable in the Call Received call/connection state U7 (i.e. CONNECT messages are not sent automatically)?	
8.2	stable in the Incoming Call Proceeding call/connection state U9 (i.e. ALERTING and CONNECT messages are not sent automatically)?	
8.3	configurable to be in an "all channels busy" condition?	

B.6.4.3 Information element values

Table B.9: Information element values

Item	Give a coding of a ...	Value
9.1	bearer capability information element, which the IUT is compatible with, for the purpose of accepting calls.	
9.2	complete Called party number information element to be sent to IUT in terminal role.	
9.3	complete Called party number information element to be sent to IUT in gatekeeper role.	
9.4	erroneous protocol discriminator, coded other than "00001000"B.	
9.5	unrecognized message type.	

B.6.4.4 UUIE parameter values

Table B.10: UUIE parameter values

Item	Give a value for the ...	Type	Value
UUIE header			
10.1	H245Tunneling field.	Boolean	
h323 message parameters			
10.2	preferred call identifier.	CallIdentifier	
10.3	destination address.	AliasAddress	
10.4	destination extra call info.	AliasAddress	
10.5	remote extension address.	AliasAddress	
10.6	source info.	EndpointType	
10.7	E.164 source address.	IA5String	
10.8	H.323 ID source address.	BPMString	
10.9	URL-ID source address.	IA5String	
10.10	transport ID source address.	TransportAddress	
10.11	Email ID source address.	IA5String	
10.12	party number source address.	PartyNumber	
10.13	destination info.	EndpointType	
10.14	E.164 destination address.	IA5String	
10.15	H.323 ID destination address.	BPMString	
10.16	URL-ID destination address.	IA5String	
10.17	transport ID destination address.	TransportAddress	
10.18	Email ID destination address.	IA5String	
10.19	party number destination address.	PartyNumber	
10.20	active MC flag.	BOOLEAN	
10.21	conference ID.	ConferenceIdentifier	
10.22	conference goal.	ConferenceGoal	
10.23	call type.	CallType	
10.24	media wait for connect flag.	BOOLEAN	
10.25	can overlap send flag.	BOOLEAN	
10.26	multiple calls flag.	BOOLEAN	
10.27	maintain connection flag.	BOOLEAN	
10.28	presentation indicator.	PresentationIndicator	
10.29	screening indicator.	ScreeningIndicator	
10.30	facility reason.	FacilityReason	
NOTE: The values shall be accepted when sent to the IUT.			

B.6.5 Test management timers

Table B.11: Timer values

Item	Timer Give a value for the timer that is used ...	Value (in seconds)
11.1	to control the synchronization between the test components for RAS testing (TSYNC).	
11.2	to wait for the test operator to perform an implicit send action (TWAIT).	
11.3	to wait for the IUT to respond to a stimulus sent by the tester (TAC).	
11.4	to control that the IUT does not respond to a stimulus sent by the tester (TNOAC).	
11.5	to control the synchronization between the test components for basic call control testing (MTC_TWAIT > TWAIT!).	
11.6	to guard and ensure that a test case finishes after a defined time (T_GUARD, minimum 30s).	
<p>NOTE: The IUT provider may fill in a value range rather than a fixed value for the test management timers. During test execution the test laboratory will choose specific values for the timers dependant on the means of testing used. These specific values may even be beyond the range given by the IUT provider, if this is necessary for achieving satisfactory test results.</p>		

Annex C (normative): Abstract Test Suite (ATS)

This ATS has been produced using the Tree and Tabular Combined Notation (TTCN) according to ISO/IEC 9646-3 [8].

The ATS was developed on a separate TTCN software tool and therefore the TTCN tables are not completely referenced in the table of contents. The ATS itself contains a test suite overview part which provides additional information and references.

C.1 The TTCN Graphical form (TTCN.GR)

The TTCN.GR representation of this ATS is contained in an Adobe Portable Document Format™ file h225_02.pdf contained in archive ts_10180403v010101p0.zip) which accompanies the present document.

C.2 The TTCN Machine Processable form (TTCN.MP)

The TTCN.MP representation corresponding to this ATS is contained in an ASCII file (h225_02.mp contained in archive ts_10180403v010101p0.zip) which accompanies the present document.

NOTE: Where an ETSI Abstract Test Suite (in TTCN) is published in both .GR and .MP format these two forms shall be considered equivalent. In the event that there appears to be syntactical or semantic differences between the two then the problem shall be resolved and the erroneous format (whichever it is) shall be corrected.

Annex D (informative): Bibliography

ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

History

Document history		
V1.1.1	February 2002	Publication