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Technical Specification

**Methods for Testing and Specification (MTS);
Conformance Test Specification for ITU-T H.248.1;
Part 3: Abstract Test Suite (ATS) and partial Protocol
Implementation eXtra Information for Testing (PIXIT) proforma**



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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Methods for Testing and Specification (MTS).

The present document is part 3 of a multi-part deliverable covering Conformance Testing Specification for ITU-T H.248.1, as identified below:

- Part 1: "Protocol Implementation Conformance Statement (PICS) proforma";
- Part 2: "Test Suite Structure and Test Purposes (TSS&TP)";
- Part 3: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma".**

1 Scope

The present document specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma for audiovisual and multimedia systems Infrastructure of audiovisual services - Communication procedures, Gateway control protocol defined in ITU-T Recommendation H.248.1 [1] and its corrigendum [2].

The objective of the present document is to provide conformance tests for ITU-T Recommendation H.248.1 equipment giving a greater probability of inter-operability between different manufacturer's H.248.1 equipments.

The present document covers the procedures described in ITU-T Recommendation H.248.1 [1] and its corrigendum [2].

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [6] and ISO/IEC 9646-2 [7]) as well as the ETSI rules for conformance testing (ETS 300 406 [5]) are used as a basis for the test methodology.

Annex A provides the Tree and Tabular Combined Notation (TTCN) part of the ATS.

Annex B provides the partial Protocol Implementation eXtra Information for Testing (PIXIT) Proforma of the ATS.

Annex C provides the Protocol Conformance Test Report (PCTR) proforma of the ATS.

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.

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

- [1] ITU-T Recommendation H.248.1 (2002): "Gateway control protocol: Version 2".
- [2] ITU-T Recommendation H.248.1 v2 Corrigendum 1 (2004): "Gateway control protocol: Version 2".
- [3] ETSI TS 102 374-1: "Methods for Testing and Specification (MTS); Conformance Test Specification for ITU-T H.248.1; Part 1: Protocol Implementation Conformance Statement (PICS) proforma".
- [4] ETSI TS 102 374-2: "Methods for Testing and Specification (MTS); Conformance Test Specification for ITU-T H.248.1; Part 2: Test Suite Structure and Test Purposes (TSS&TP)".
- [5] ETSI ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [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] ISO/IEC 9646-6: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 6: Protocol profile test specification".
- [12] ISO/IEC 9646-7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ITU-T Recommendation H.248.1 [1] ISO/IEC 9646-1 [6] and ISO/IEC 9646-2 [7] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations defined in ISO/IEC 9646-1 [6], ISO/IEC 9646-6 [11], ISO/IEC 9646-7 [12] and the following apply:

AC	Audit Capabilities command
AD	ADd command
AM	Administration and Maintenance
ASP	Abstract Service Primitive
ATM	Abstract Test Method
ATS	Abstract Test Suite
AV	Audit Value command
BI	Invalid Behaviour
BO	Inopportune Behaviour
BV	Valid Behaviour
IUT	Implementation Under Test
LT	Lower Tester
MD	MoDify command
MG	Media Gateway
MGC	Media Gateway Controller
MO	MOve command
MOT	Means Of Testing
MTC	Main Test Component
NO	NOtify command
PCO	Point of Control and Observation
PCTR	Protocol Conformance Test Report
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
PTC	Parallel Test Component
SC	Service Change command
SU	SUbstract command
SUT	System Under Test
TC	Test Cases
TP	Test Purpose
TR	TRansport
TSS	Test Suite Structure
TTCN	Tree and Tabular Combined Notation
UT	Upper Tester

4 Abstract Test Method (ATM)

This clause describes the ATM used to test ITU-T Recommendation H.248.1 [1].

4.1 Network architecture

The IUT to be tested can be one of the following: Media Gateway or Media Gateway Controller (see figure 1).

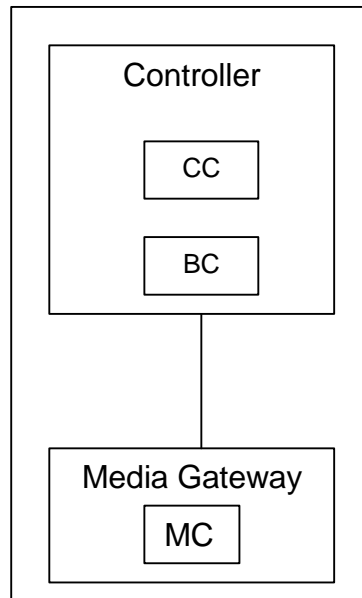


Figure 1: H.248 architecture

4.2 Protocol architecture

The Implementation Under Test (IUT) for which this test case specification consists of the H.248 protocol (see figure 2).

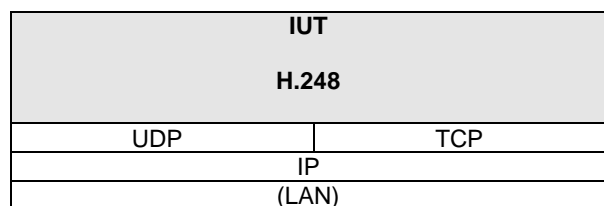


Figure 2: TIPHON protocol architecture

4.3 Test architecture

It is possible to specify an ATS based on a Single party (remote) test method for such an IUT when acting as an end entity. However, it is considered that an ATS based on such an approach is of limited use as the only way to specify IUT generated PDUs is to use the "implicit send" statement. Many users of such an ATS would replace the "implicit send" statements with descriptions of the behaviour at other interfaces.

An ATS based on a multi-party test method is considered to be more useful as it is closer to the way a real test suite would be constructed. Such a test method specifies behaviour at multiple network interfaces. One very important limitation here is that tests are focussed on one particular interface. Hence the test system is made up of a Main Test Component (MTC) plus one or more Parallel Test Components (PTC), see figure 4.

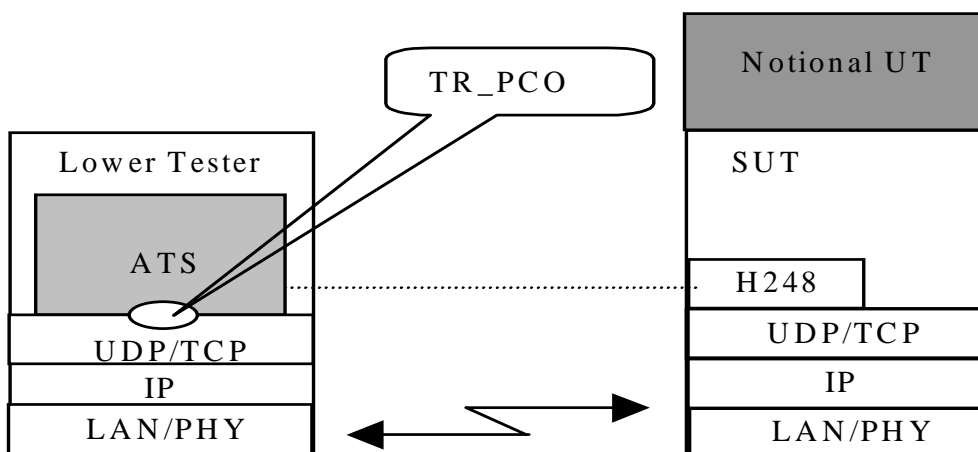


Figure 3: Test architecture

A single-party testing concept is used, which consists of the following abstract testing functions:

- Lower Tester:** A Lower Tester (LT) is located in the remote test system. It controls and observes the behaviour of the IUT.
- ATS:** The Abstract Test Suite (ATS), defined in the present document, and located in the remote test system.
- CHN_PCO:** A Point of Control and Observation (PCO) located at a virtual SAP corresponding to the H.248.1 port over the TCP/IP or UDP/IP protocol. All test events at the PCO are specified in terms of Abstract Service Primitives (ASP) containing complete PDU.
- Notional UT:** No explicit Upper Tester (UT) exists in the system under test. Nevertheless, some specific actions to cover implicit send events and to obtain feedback information are necessary for the need of the test procedures. A black box covering these requirements is used in the SUT as a notional U. This notional UT is considered as part of the test system.

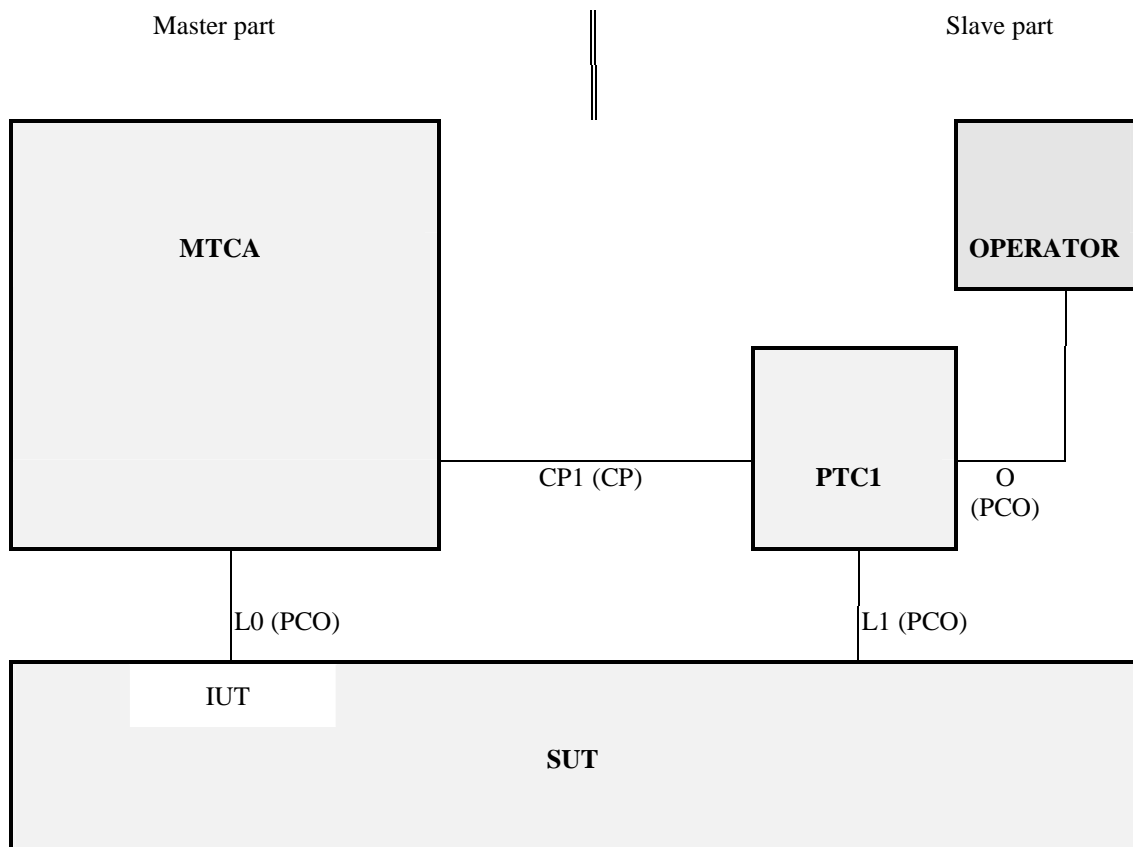


Figure 4: Multi-party test method

In a master/slave arrangement, the MTC is considered to be the master while the PTCs are the slaves. The "slave" testers are only an explicit description of how to deal with the remote interfaces during the testing process, i.e. "how to make the IUT send the required message".

This means, in particular, that the verdict will only be assigned from the protocol aspects observed on the interface under test (i.e. by the "master" tester), as it would be observed by a terminal connected to this interface. A failure in the correlation between the protocol at the different interfaces to which the different testers are connected, i.e. in the mechanism of the functional service itself, will not cause a FAIL verdict. For instance, if the IUT fails to send a message on the tested interface after another interface has received the proper stimulus, the verdict will be INCONCLUSIVE.

The MTC **MTCA** has two functions in this configuration. Firstly, it has the MTC function of controlling the one PTC. Thus it is responsible for starting the PTC and afterwards coordinates activities by exchanging Coordination Messages (CM) with the PTCs. Secondly it is responsible for the behaviour of the Lower Tester (LT) at TR_PCO.

4.4 Primitives at TR_PCO

The primitive `rcv_pdu` (*port_number*, *PDU_message*) is used to receive H.248 messages from the IUT. The *port_number* value shall be obtained by using primitives at TT_PCO at the beginning of the test case.

The primitive `snd_pdu` (*port_number*, *PDU_message*) is used to transmit H.248 messages to the IUT. The *channel_number* value shall be obtained by using primitives at TT_PCO at the beginning of the test case.

5 Untestable Test Purposes (TP)

There are no untestable test purposes.

6 ATS conventions

The ATS conventions are intended to give a better understanding of the ATS but they also describe the conventions made for the development of the ATS. These conventions shall be considered during any later maintenance or further development of the ATS.

The ATS conventions contain two clauses, the naming conventions and the implementation conventions. The naming conventions describe the structure of the naming of all ATS elements. The implementation conventions describe the functional structure of the ATS.

To define the ATS, the guidelines of the document ETS 300 406 [5] was considered.

6.1 Naming conventions

6.1.1 Declarations part

This clause describes the naming conventions chosen for the elements of the ATS declarations part.

6.1.1.1 General

The following general rules apply for the name given in the declarations part. All type definitions (simple type definitions, structured type definitions, ASP type definitions and PDU type definitions) shall be written according to the ASN.1 definitions.

6.1.1.2 Test Suite Operations definition

The Test Suite Operation identifiers are composed of substrings beginning with the standard prefix "TSO_". An underscore character ("_") separates each substring.

EXAMPLE: TSO_substring

6.1.1.3 Test Suite Parameter declarations

The Test Suite Parameter identifiers are composed of substrings beginning with the standard prefix "TSP_". An underscore character ("_") separates each substring.

EXAMPLE 1: TSP_t_wait

If the test suite parameter references a Protocol Implementation Conformance Statement (PICS) item, the letter "C" is added to the standard prefix.

EXAMPLE 2: TSPC_MG

If the test suite parameter references a PIXIT item, the letter "X" is added to the standard prefix.

EXAMPLE 3: TSPX_TS_PORT

6.1.1.4 Test Case Selection expression definition

The Test Case Selection expression identifiers are composed of substrings in uppercase letters, beginning with the prefix "TCS_". An underscore character ("_") separates each substring.

6.1.1.5 Test Suite Constant declarations

The Test Suite Constant identifiers are composed of substrings beginning with the prefix "TSC_". An underscore character ("_") separates each substring.

If the test suite constant represents a system parameter, the complete name defined in the protocol standard is used.

6.1.1.6 Test Suite Variable declarations

The Test Suite Variable identifiers are composed of substrings in lowercase letters, except for the prefix "TSV_". An underscore character ("_") separates each substring.

Complete names as defined in the protocol standard are used.

6.1.1.7 Test Case Variable declarations

The Test Case Variable identifiers are composed of substrings beginning with the prefix "TCV_". An underscore character ("_") separates each substring.

6.1.1.8 Timer declarations

Two types of timers can be identified:

1) Standardized:

- Those defined in the protocol standard, e.g. LONG_TIMER. They use exactly the same name as in the standard.

As there is a tolerance margin accepted for these timers, three values are needed:

- The maximum value allowed, which will use the suffix "_max";
- The minimum value allowed, which will use the suffix "_min";
- The value actually implemented, with no suffix;

EXAMPLE 1: LONG_TIMER_max, LONG_TIMER_min, and LONG_TIMER.

2) Not standardized:

- Those not defined in the protocol standard, i.e. for execution use, e.g. a timer waiting for a response. These timers begin with the prefix "T_", followed by a string in uppercase letters.

EXAMPLE 2: T_ACK represents a timer for controlling the response time of the IUT.

6.1.1.9 ASP type definitions

The general conventions in clause 6.1.1.1 apply.

The identifier of an ASP type uses the same name as the name defined in the protocol standard.

6.1.1.10 PDU type definitions

The general conventions in clause 6.1.1.1 apply.

The PDU type identifier shall identify the related structure or type as defined in the protocol standard.

6.1.1.11 CM type definitions

The CM types are defined as the ASP types without sub-fields.

6.1.1.12 Alias definitions

Alias definitions are not used.

6.1.2 Constraints part

This clause describes the naming conventions chosen for the elements of the ATS constraints part.

6.1.2.1 General

Constraints are started in general with lowercase letters, except for the constraints for the H.248.1 Descriptors that start with upper cases.

6.1.3 Dynamic part

This clause describes the naming conventions used for the elements of the ATS dynamic part.

6.1.3.1 General

All test cases shall be listed in the order in which they appear in the Test Suite Structure (TSS) and TP document.

6.1.3.2 Test Case (TC) identifier

The identifier of the test case is built in the same way as for the test purpose described in TS 102 374-2 [4], with the exception that "TP" is replaced by "TC". The identifier of a TC is built according to table 1.

Table 1: TC naming convention

Identifier:	TC_<iut>_<gp>_<type>_<nn>		
<iut>	= IUT type	MG	Media Gateway
		MGC	Media Gateway Controller
<gp>	= group of procedures	AD	Procedures using ADd command (AD)
		MD	Procedures using MoDify command (MD)
		SU	Procedures using SUbtract command (SU)
		MO	Procedures using MOve command (MO)
		AV	Procedures using Audit Value command (AV)
		AC	Procedures using Audit Capabilities command (AC)
		NO	Procedures using NOtify command (NO)
		SC	Procedures using Service Change command (SC)
		AM	Administration and Maintenance procedures (AM)
		TR	TRansport related procedures (TR)
type	= Type of testing	BV	Valid Behaviour tests
		BI	Invalid Behaviour tests
		BO	Inopportune Behaviour tests
<nn>	= sequential number	(01 to 99)	Test Case Number

EXAMPLE: TP identifier: TP/MG/AD/BV-10
TC identifier: TC_MG_AD_BV_10.

6.1.3.3 Test step identifier

The test step identifier is built of substrings in lowercase letters, preceded by a string of uppercase letters. Underscore characters join the substrings. The first substring indicates the main function of the test step; e.g. PR for preamble, PO for postamble, LTS for local tree and STP for general test step. The second substring indicates the purpose of the step.

EXAMPLE: PO_general.

6.1.3.4 Default identifier

The default identifiers begin with the prefix "DF_", followed by a string in uppercase letters.

6.1.3.5 Label identifier

The identifiers in the label column are built according to table 2.

Table 2: Naming convention for verdict assignment identifier

Identifier:	<Table><nn>		
	<Table> = type of table	TB	Test Body
		CS	Check State test step
		DF	DeFault
		PO	POstamble
		PR	PReamble
		TS	TestStep
	<nn> = sequential number	(00 to 99)	Label number

6.1.3.6 ATS abbreviations

These abbreviations are used to shorten identifier names:

addr	address
cac	audit capabilities command request
cadd	add command request
cav	audit value command request
cmod	modify command request
Cmov	move command request
Cnot	notify command request
Csc	service change command request
Csub	subtract command request
msg	message
LC_Descr	Local Control descriptor
L_Descr	Local Descriptor
R_Descr	Remote Descriptor
Stat_Descr	Statistic Descriptor
rac	audit capabilities command reply
radd	add command reply
rav	audit value command reply
rmod	modify command reply
rmov	move command reply
rnot	notify command reply
rsc	service change command reply
rsub	subtract command reply
trq	transaction request
tre	transaction reply
tpe	transaction pending
tack	transaction acknowledge
tid	transaction ID

6.2 Implementation conventions

6.2.1 Declaration part

The comment line of single element TTCN tables (e.g. test suite constants) is used to give a reference where the format and content of the element is described in the relevant protocol standards. Any particularity of the element format or content is described in the comment line.

The comment line in the header of multi element TTCN tables (e.g. ASP) is used to reference to the protocol standard.

The detailed comments are used to describe any particularity of the table.

In the ASP and PDU declarations the comment column is further used to give information about the parameter/field value, in particular if the parameter/field contains a fixed spare value.

6.2.2 Constraint part

The ASPs and PDUs are defined in a way that all relevant parameters/fields are parameterized. That improves the transparency of the constraints in the dynamic part, as all values, which are relevant for the test, are always present.

Generally no modified constraints are used. This allows an easier reuse and adaptation of constraints if they are reused in other test specifications.

The comment line of a constraint always contains a reference to the relevant protocol standard.

The detailed comment footer is used to describe any particularity of the table.

6.2.3 Dynamic part

All events, which are defined as a conformance requirement by the TP, cause a preliminary verdict PASS if the requirement is met.

All invalid events are handled in the default tree. Only FAIL or INCONC verdicts are assigned in the default tree.

The preamble, the test body and the postamble may have different default trees, which allows a specific verdict handling, e.g. only INCONC verdicts are assigned in the preamble.

All verdict assignments are labelled. According to ISO/IEC 9646-3 [8], clause E.2, labels should be written to the conformance log. This allows, for example, to identify where the test failed. To allow an exact identification of the table, in which the verdict was assigned, the convention described in clause 6.1.3.5 is applied.

TP, which are listed in the untestable TP list in clause 5, are not considered in the ATS, thus these TC identifiers are missing in the ATS and the numbering of the TC is not always continuous.

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 of the present document.

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 Abstract Test Suite (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 Implementation Under Test (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 a Means Of Testing (MOT) and Executable Test Suite (ExTS) for this Abstract Test Suite (ATS) specification, shall comply with the requirements of ISO/IEC 9646-4 [9]. In particular, these concern the realization of an Executable Test Suite (ExTS) based on each ATS. The test realizer shall provide a statement of conformance of the MOT to this ATS specification.

An ExTS 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): 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.

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

The TTCN.GR representation of this ATS is contained in an Adobe Portable Document Format™ file (H248.PDF) contained in archive ts_10237403v010101p0.ZIP) which accompanies the present document.

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

The TTCN.MP representation corresponding to this ATS is contained in an ASCII file (H248.MP contained in archive ts_10237403v010101p0.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 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 PIXIT proforma in this annex so that it can be used for its intended purposes and may further publish the completed PIXIT.

The PIXIT proforma is based on ISO/IEC 9646-6 [11]. Any needed additional information can be found in this international standard document.

B.1 Identification summary

Table B.1

PIXIT Number:	
Test Laboratory Name:	
Date of Issue:	
Issued to:	

B.2 ATS summary

Table B.2

Protocol Specification:	ITU-T Recommendation H.248.1 [1]: "Gateway control protocol: Version 2" and its Corrigendum 1 [2]
Protocol to be tested:	Gateway control protocol
ATS Specification:	TS 102 374-3
Abstract Test Method:	TS 102 374-3, clause 4

B.3 Test laboratory

Table B.3

Test Laboratory Identification:	
Test Laboratory Manager:	
Means of Testing:	
SAP Address:	

B.4 Client identification

Table B.4

Client Identification:	
Client Test manager:	
Test Facilities required:	

B.5 SUT

Table B.5

Name:	
Version:	
SCS Number:	
Machine configuration:	
Operating System Identification:	
IUT Identification:	
PICS Reference for IUT:	
Limitations of the SUT:	
Environmental Conditions:	

B.6 Protocol layer information

B.6.1 Protocol identification

Table B.6

Name:	ITU-T Recommendation H.248.1 [1]
Version:	Version 2
PICS References:	TS 102 374-1 [3]

B.6.2 IUT information

B.6.2.1 General address parameters

Table B.7: General IUT parameters

Name/Type	Comments	Value
TSPX_TS_PORT	The port number of Test System for H.248 protocol (the default is 2945)	
TSPX_TS_ADDR	IP address of the Test System	
TSPX_TS_PORT_ALT	Alternative IP port for Test System when acting as a secondary MGC	
TSPX_TS_ADDR_ALT	Alternative IP address for Test System when acting as a secondary MGC	
TSPX_SUT_PORT	The port number of the SUT for H.248 protocol (the default is 2945)	
TSPX_SUT_ADDR	The IP address of the SUT	
TSPX_MId_IUT	Name/Address of the IUT as used in the H.248 message	
TSPX_MId_tester	Name/Address of the Test System as used in the H.248 message	
TSPX_MGC_Id_ALT	Name/Address of the tester as used in the H.248 message when acting as a secondary MGC	
TSPX_TID_CHOOSE1	Termination ID with CHOOSE wildcard for both, ephemeral and physical Terminations	
TSPX_TID_ALL	Termination ID with ALL wildcard, which addresses all ephemeral and all physical Terminations	

B.6.2.2 Parameters for ephemeral terminations

Table B.8: Parameters for ephemeral terminations

Name/Type	Comments	Value
TSPX_TID_CHOOSE_EPH	Termination ID with CHOOSE wildcard only for ephemeral Terminations	
TSPX_TID_EPH_1	Termination ID which shall be chosen by a tester (acting as a MG) after an ADD command request with wildcard CHOOSE for an ephemeral Termination has been received	
TSPX_TID_EPH_2	Termination ID which shall be chosen by a tester (acting as a MG) after a 2 nd ADD command request with wildcard CHOOSE for an ephemeral Termination has been received	
TSPX_TID_EPH_3	Termination ID which shall be chosen by a tester (acting as a MG) after a 3 rd ADD command request with wildcard CHOOSE for an ephemeral Termination has been received	
TSPX_TID_EPH_4	Termination ID which shall be chosen by a tester (acting as a MG) after a 4 th ADD command request with wildcard CHOOSE for an ephemeral Termination has been received	
TSPX_TID_ALL_EPH	Termination ID with ALL wildcard which addresses all ephemeral Terminations	
TSPX_TID_ALL_EPH_2	Termination ID with ALL wildcard which addresses only the ephemeral Terminations TSPX_TID_EPH_1 and TSPX_TID_EPH_2	
TSPX_TID_ALL_EPH_23	Termination ID with ALL wildcard which addresses only the ephemeral Terminations TSPX_TID_EPH_2 in Context CID1 and TSPX_TID_EPH_3 in Context CID2	

B.6.2.3 Parameters for physical terminations

Table B.9: Parameters for physical terminations

Name/Type	Comments	Value
TSPX_TID1	Physical Termination ID (referenced as physical Termination TID1 in the TPs)	
TSPX_TID2	Physical Termination ID (referenced as physical Termination TID2 in the TPs)	
TSPX_TID3	Physical Termination ID (referenced as physical Termination TID3 in the TPs)	
TSPX_TID4	Physical Termination ID (referenced as physical Termination TID4 in the TPs)	
TSPX_TID_CHOOSE_PHY	Termination ID with wildcard CHOOSE only for physical Terminations	
TSPX_TID_ALL_PHY_2	Termination ID with ALL wildcard which addresses the physical Terminations TID1 and TID2 (see TPs)	

B.6.2.4 Parameters for descriptors

Table B.10: Parameters for descriptors

Name/Type	Comments	Value
TSPX_ADD_MEDIA_DESC_EPH	Valid MediaDescriptor value for EPHeMeral Terminations when sent within an ADD command request	
TSPX_ADD_MEDIA_DESC_PHY	Valid MediaDescriptor value for PHYsical Terminations when sent within an ADD command request	
TSPX_MOD_MEDIA_DESC_EPH	Valid MediaDescriptor value for PHYsical Terminations when sent within an ADD command request	
TSPX_MOD_MEDIA_DESC_PHY	Valid MediaDescriptor value for PHYsical Terminations when sent within an MODIFY command request	
TSPX_MOD_MEDIA_DESC_ROOT	Valid MediaDescriptor value for the ROOT Termination when sent within an MODIFY command request	
TSPX_AV_AUDIT_DESC_EPH	Valid AuditDescriptor value for EPHeMeral Terminations when sent within an AUDIT VALUE/AUDIT CAPABILITIES command request	
TSPX_AV_AUDIT_DESC_PHY	Valid AuditDescriptor value for PHYsical Terminations when sent within an AUDIT VALUE/AUDIT CAPABILITIES command request	
TSPX_AV_AUDIT_DESC_ROOT	Valid AuditDescriptor value for the ROOT Termination when sent within an AUDIT VALUE/AUDIT CAPABILITIES command request	
TSPX_AV_AUDIT_DESC_ROOT_MEDIA	Valid AuditDescriptor value for the ROOT Termination when sent within an AUDIT VALUE/AUDIT CAPABILITIES command request with audioToken set to "mediaToken"	
TSPX_AV_AUDIT_DESC_EPH_MEDIA	Valid AuditDescriptor value for EPHeMeral Terminations when sent within an AUDIT VALUE/AUDIT CAPABILITIES command request with audioToken set to "mediaToken"	
TSPX_AV_AUDIT_DESC_PHY_MEDIA	Valid AuditDescriptor value for PHYsical Terminations when sent within an AUDIT VALUE/AUDIT CAPABILITIES command request with audioToken set to "mediaToken"	
TSPX_MEDIA_DESC_ROOT_AV	Valid MediaDescriptor value for the ROOT Termination sent in an AUDIT VALUE command reply after receipt of an AUDIT VALUE command request with auditToken set to "mediaToken"	
TSPX_MEDIA_DESC_PHY_AV	Valid MediaDescriptor value for a PHYsical Terminations sent in an AUDIT VALUE command reply after receipt of an AUDIT VALUE command request with auditToken set to "mediaToken"	
TSPX_MEDIA_DESC_EPH_AV	Valid MediaDescriptor value for an EPHeMeral Terminations sent in an AUDIT VALUE command reply after receipt of an AUDIT VALUE command request with auditToken set to "mediaToken"	

Name/Type	Comments	Value
TSPX_MEDIA_DESC_ROOT_AC	Valid MediaDescriptor value for the ROOT Termination sent in an AUDIT CAPABILITIES command reply after receipt of an AUDIT CAPABILITIES command request with auditToken set to "mediaToken"	
TSPX_MEDIA_DESC_PHY_AC	Valid MediaDescriptor value for a PHYSical Terminations sent in an AUDIT CAPABILITIES command reply after receipt of an AUDIT CAPABILITIES command request with auditToken set to "mediaToken"	
TSPX_MEDIA_DESC_EPH_AC	Valid MediaDescriptor value for an EPHEmeral Terminations sent in an AUDIT CAPABILITIES command reply after receipt of an AUDIT CAPABILITIES command request with auditToken set to "mediaToken"	
TSPX_EVENTS_DESC_EPH	Events Descriptor for an EPHEmeral Termination	
TSPX_EVENTS_DESC_PHY	Events Descriptor for a PHYsical Termination	
TSPX_EVENTS_DESC_ROOT	Events Descriptor for the ROOT Termination	
TSPX_OBSERVED_EVENTS_DESC_EPH	ObservedEvents Descriptor for an EPHEmeral Termination sent after detecting the event defined in TSPX_EVENTS_DESC_EPH	
TSPX_OBSERVED_EVENTS_DESC_PHY	ObservedEvents Descriptor for an PHYsical Termination sent after detecting the event defined in TSPX_EVENTS_DESC_PHY	
TSPX_OBSERVED_EVENTS_DESC_ROOT	ObservedEvents Descriptor for the ROOT Termination sent after detecting the event defined in TSPX_EVENTS_DESC_ROOT	

B.6.2.5 MG properties

Table B.11: MG properties

Name/Type	Comments	Value
TSPX_NormalMGExecutionTime	Value for the time interval within the MGC expects a response (in ms)	
TSPX_NormalMGCEExecutionTime	Value for the time interval within the MG expects a response (in ms)	

B.6.2.6 Timers

Table B.12: Timers

Name/Type	Comments	Value
TSPX_TWAIT	Value for timer that controls test events initiated at the IUT by the test operator (value in seconds)	
TSPX_TAC	Value for timer that controls test events initiated by stimuli sent by the tester (value in seconds)	
TSPX_LONG_TIMER	Value for H.248 protocol timer LONG_TIMER (value in seconds)	

Annex C (normative): 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.

The PCTR proforma is based on ISO/IEC 9646-6 [11]. Any needed additional information can be found in the present document.

C.1 Identification summary

C.1.1 Protocol conformance test report

Table C.1

PCTR Number:	
PCTR Date:	
Corresponding SCTR Number:	
Corresponding SCTR Date:	
Test Laboratory Identification:	
Test Laboratory Manager:	
Signature:	

C.1.2 IUT identification

Table C.2

Name:	
Version:	
Protocol specification:	ITU-T Recommendation H.248.1 [1]: "Gateway control protocol: Version 2" and its Corrigendum 1 [2]
PICS:	TS 102 374-1 [3]
Previous PCTR if any:	

C.1.3 Testing environment

Table C.3

PIXIT Number:	
ATS Specification:	
Abstract Test Method:	Remote test method, Embedded variant with notional UT
Means of Testing identification:	
Date of testing:	
Conformance Log reference(s):	
Retention Date for Log reference(s):	

C.1.4 Limits and reservation

Additional information relevant to the technical contents or further use of the test report, or 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.

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C.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.

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C.2 IUT Conformance status

This IUT has or 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 C.3) and there are no "FAIL" verdicts to be recorded (in clause C.6) strike the words "has or", otherwise strike the words "or has not".

C.3 Static conformance summary

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

Strike the appropriate words in this sentence.

C.4 Dynamic conformance summary

The test campaign did or 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 C.6) strike the words "did or" otherwise strike the words "or did not".

Summary of the results of groups of test:

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C.5 Static conformance review report

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

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C.6 Test campaign report for Media Gateway (MG)

Table C.4

ATS Reference	Selected?	Run?	Verdict	Observations (Reference to any observations made in clause C.8)
TC_MG_AD_BV_01	Yes/No	Yes/No		
TC_MG_AD_BV_02	Yes/No	Yes/No		
TC_MG_AD_BV_03	Yes/No	Yes/No		
TC_MG_AD_BV_04	Yes/No	Yes/No		
TC_MG_AD_BV_05	Yes/No	Yes/No		
TC_MG_AD_BV_06	Yes/No	Yes/No		
TC_MG_AD_BV_07	Yes/No	Yes/No		
TC_MG_AD_BI_01	Yes/No	Yes/No		
TC_MG_AD_BI_02	Yes/No	Yes/No		
TC_MG_AD_BI_03	Yes/No	Yes/No		
TC_MG_AD_BI_04	Yes/No	Yes/No		
TC_MG_AD_BI_05	Yes/No	Yes/No		
TC_MG_AD_BI_06	Yes/No	Yes/No		
TC_MG_AD_BI_07	Yes/No	Yes/No		
TC_MG_AD_BI_08	Yes/No	Yes/No		
TC_MG_AD_BI_09	Yes/No	Yes/No		
TC_MG_MD_BV_01	Yes/No	Yes/No		
TC_MG_MD_BV_02	Yes/No	Yes/No		
TC_MG_MD_BV_03	Yes/No	Yes/No		
TC_MG_MD_BV_04	Yes/No	Yes/No		
TC_MG_MD_BV_05	Yes/No	Yes/No		
TC_MG_MD_BV_06	Yes/No	Yes/No		
TC_MG_MD_BV_07	Yes/No	Yes/No		
TC_MG_MD_BI_01	Yes/No	Yes/No		
TC_MG_MD_BI_02	Yes/No	Yes/No		
TC_MG_MD_BI_03	Yes/No	Yes/No		
TC_MG_MD_BI_04	Yes/No	Yes/No		
TC_MG_MD_BI_05	Yes/No	Yes/No		
TC_MG_MD_BI_06	Yes/No	Yes/No		
TC_MG_MD_BI_07	Yes/No	Yes/No		
TC_MG_MD_BI_08	Yes/No	Yes/No		
TC_MG_MD_BI_09	Yes/No	Yes/No		
TC_MG_SU_BV_01	Yes/No	Yes/No		
TC_MG_SU_BV_02	Yes/No	Yes/No		
TC_MG_SU_BV_03	Yes/No	Yes/No		
TC_MG_SU_BV_04	Yes/No	Yes/No		
TC_MG_SU_BV_05	Yes/No	Yes/No		
TC_MG_SU_BV_06	Yes/No	Yes/No		
TC_MG_SU_BI_01	Yes/No	Yes/No		
TC_MG_SU_BI_02	Yes/No	Yes/No		
TC_MG_SU_BI_03	Yes/No	Yes/No		
TC_MG_SU_BI_04	Yes/No	Yes/No		
TC_MG_SU_BI_05	Yes/No	Yes/No		
TC_MG_SU_BI_06	Yes/No	Yes/No		
TC_MG_SU_BI_07	Yes/No	Yes/No		
TC_MG_SU_BI_08	Yes/No	Yes/No		
TC_MG_SU_BI_09	Yes/No	Yes/No		
TC_MG_SU_BI_10	Yes/No	Yes/No		
TC_MG_SU_BI_11	Yes/No	Yes/No		
TC_MG_SU_BI_12	Yes/No	Yes/No		
TC_MG_MO_BV_01	Yes/No	Yes/No		
TC_MG_MO_BV_02	Yes/No	Yes/No		
TC_MG_MO_BV_03	Yes/No	Yes/No		
TC_MG_MO_BV_04	Yes/No	Yes/No		
TC_MG_MO_BI_01	Yes/No	Yes/No		
TC_MG_MO_BI_02	Yes/No	Yes/No		

ATS Reference	Selected?	Run?	Verdict	Observations (Reference to any observations made in clause C.8)
TC_MG_MO_BI_03	Yes/No	Yes/No		
TC_MG_MO_BI_04	Yes/No	Yes/No		
TC_MG_MO_BI_05	Yes/No	Yes/No		
TC_MG_MO_BI_06	Yes/No	Yes/No		
TC_MG_MO_BI_07	Yes/No	Yes/No		
TC_MG_MO_BI_08	Yes/No	Yes/No		
TC_MG_MO_BI_09	Yes/No	Yes/No		
TC_MG_MO_BI_10	Yes/No	Yes/No		
TC_MG_MO_BI_11	Yes/No	Yes/No		
TC_MG_MO_BI_12	Yes/No	Yes/No		
TC_MG_AV_BV_01	Yes/No	Yes/No		
TC_MG_AV_BV_02	Yes/No	Yes/No		
TC_MG_AV_BV_03	Yes/No	Yes/No		
TC_MG_AV_BV_04	Yes/No	Yes/No		
TC_MG_AV_BV_05	Yes/No	Yes/No		
TC_MG_AV_BV_06	Yes/No	Yes/No		
TC_MG_AV_BV_07	Yes/No	Yes/No		
TC_MG_AV_BV_08	Yes/No	Yes/No		
TC_MG_AV_BI_01	Yes/No	Yes/No		
TC_MG_AV_BI_02	Yes/No	Yes/No		
TC_MG_AV_BI_03	Yes/No	Yes/No		
TC_MG_AV_BI_04	Yes/No	Yes/No		
TC_MG_AV_BI_05	Yes/No	Yes/No		
TC_MG_AV_BI_06	Yes/No	Yes/No		
TC_MG_AV_BI_07	Yes/No	Yes/No		
TC_MG_AV_BI_08	Yes/No	Yes/No		
TC_MG_AC_BV_01	Yes/No	Yes/No		
TC_MG_AC_BV_02	Yes/No	Yes/No		
TC_MG_AC_BV_03	Yes/No	Yes/No		
TC_MG_AC_BV_04	Yes/No	Yes/No		
TC_MG_AC_BV_05	Yes/No	Yes/No		
TC_MG_AC_BV_06	Yes/No	Yes/No		
TC_MG_AC_BV_07	Yes/No	Yes/No		
TC_MG_AC_BV_08	Yes/No	Yes/No		
TC_MG_AC_BI_01	Yes/No	Yes/No		
TC_MG_AC_BI_02	Yes/No	Yes/No		
TC_MG_AC_BI_03	Yes/No	Yes/No		
TC_MG_AC_BI_04	Yes/No	Yes/No		
TC_MG_AC_BI_05	Yes/No	Yes/No		
TC_MG_AC_BI_06	Yes/No	Yes/No		
TC_MG_AC_BI_07	Yes/No	Yes/No		
TC_MG_AC_BI_08	Yes/No	Yes/No		
TC_MG_NO_BV_01	Yes/No	Yes/No		
TC_MG_NO_BV_02	Yes/No	Yes/No		
TC_MG_NO_BV_03	Yes/No	Yes/No		
TC_MG_SC_BV_01	Yes/No	Yes/No		
TC_MG_SC_BV_02	Yes/No	Yes/No		
TC_MG_SC_BV_03	Yes/No	Yes/No		
TC_MG_SC_BV_04	Yes/No	Yes/No		
TC_MG_SC_BV_05	Yes/No	Yes/No		
TC_MG_SC_BV_06	Yes/No	Yes/No		
TC_MG_SC_BV_07	Yes/No	Yes/No		
TC_MG_SC_BV_08	Yes/No	Yes/No		
TC_MG_SC_BV_09	Yes/No	Yes/No		
TC_MG_SC_BV_10	Yes/No	Yes/No		
TC_MG_SC_BV_11	Yes/No	Yes/No		
TC_MG_SC_BV_12	Yes/No	Yes/No		
TC_MG_SC_BV_13	Yes/No	Yes/No		
TC_MG_SC_BV_14	Yes/No	Yes/No		
TC_MG_AM_BV_01	Yes/No	Yes/No		
TC_MG_AM_BV_02	Yes/No	Yes/No		

ATS Reference	Selected?	Run?	Verdict	Observations (Reference to any observations made in clause C.8)
TC_MG_AM_BV_03	Yes/No	Yes/No		
TC_MG_AM_BV_04	Yes/No	Yes/No		
TC_MG_AM_BV_05	Yes/No	Yes/No		
TC_MG_AM_BV_06	Yes/No	Yes/No		
TC_MG_AM_BV_07	Yes/No	Yes/No		
TC_MG_AM_BV_08	Yes/No	Yes/No		
TC_MG_AM_BV_09	Yes/No	Yes/No		
TC_MG_AM_BV_10	Yes/No	Yes/No		
TC_MG_AM_BV_11	Yes/No	Yes/No		
TC_MG_TR_BV_01	Yes/No	Yes/No		
TC_MG_TR_BV_02	Void			
TC_MG_TR_BV_03	Yes/No	Yes/No		
TC_MG_TR_BV_04	Yes/No	Yes/No		
TC_MG_TR_BV_05	Yes/No	Yes/No		
TC_MG_TR_BV_06	Yes/No	Yes/No		

C.7 Test campaign report for Media Gateway Controller (MGC)

Table C.5

ATS Reference	Selected?	Run?	Verdict	Observations (Reference to any observations made in clause C.8)
TC_MGC_AD_BV_01	Yes/No	Yes/No		
TC_MGC_AD_BV_02	Yes/No	Yes/No		
TC_MGC_AD_BV_03	Yes/No	Yes/No		
TC_MGC_AD_BV_04	Yes/No	Yes/No		
TC_MGC_AD_BV_05	Yes/No	Yes/No		
TC_MGC_AD_BV_06	Yes/No	Yes/No		
TC_MGC_AD_BV_07	Yes/No	Yes/No		
TC_MGC_MD_BV_01	Yes/No	Yes/No		
TC_MGC_MD_BV_02	Yes/No	Yes/No		
TC_MGC_MD_BV_03	Yes/No	Yes/No		
TC_MGC_MD_BV_04	Yes/No	Yes/No		
TC_MGC_MD_BV_05	Yes/No	Yes/No		
TC_MGC_MD_BV_06	Yes/No	Yes/No		
TC_MGC_MD_BV_07	Yes/No	Yes/No		
TC_MGC_SU_BV_01	Yes/No	Yes/No		
TC_MGC_SU_BV_02	Yes/No	Yes/No		
TC_MGC_SU_BV_03	Yes/No	Yes/No		
TC_MGC_SU_BV_04	Yes/No	Yes/No		
TC_MGC_SU_BV_05	Yes/No	Yes/No		
TC_MGC_MO_BV_01	Yes/No	Yes/No		
TC_MGC_MO_BV_02	Yes/No	Yes/No		
TC_MGC_MO_BV_03	Yes/No	Yes/No		
TC_MGC_MO_BV_04	Yes/No	Yes/No		
TC_MGC_AV_BV_01	Yes/No	Yes/No		
TC_MGC_AV_BV_02	Yes/No	Yes/No		
TC_MGC_AV_BV_03	Yes/No	Yes/No		
TC_MGC_AV_BV_04	Yes/No	Yes/No		
TC_MGC_AV_BV_05	Yes/No	Yes/No		
TC_MGC_AV_BV_06	Yes/No	Yes/No		
TC_MGC_AV_BV_07	Yes/No	Yes/No		
TC_MGC_AV_BV_08	Yes/No	Yes/No		
TC_MGC_AC_BV_01	Yes/No	Yes/No		
TC_MGC_AC_BV_02	Yes/No	Yes/No		
TC_MGC_AC_BV_03	Yes/No	Yes/No		
TC_MGC_AC_BV_04	Yes/No	Yes/No		
TC_MGC_AC_BV_05	Yes/No	Yes/No		
TC_MGC_AC_BV_06	Yes/No	Yes/No		
TC_MGC_AC_BV_07	Yes/No	Yes/No		
TC_MGC_AC_BV_08	Yes/No	Yes/No		
TC_MGC_NO_BV_01	Yes/No	Yes/No		
TC_MGC_NO_BV_02	Yes/No	Yes/No		
TC_MGC_NO_BV_03	Yes/No	Yes/No		
TC_MGC_NO_BI_01	Yes/No	Yes/No		
TC_MGC_NO_BI_02	Yes/No	Yes/No		
TC_MGC_NO_BI_03	Yes/No	Yes/No		
TC_MGC_NO_BI_04	Yes/No	Yes/No		
TC_MGC_NO_BI_05	Yes/No	Yes/No		
TC_MGC_NO_BI_06	Yes/No	Yes/No		
TC_MGC_NO_BI_07	Yes/No	Yes/No		
TC_MGC_NO_BI_08	Yes/No	Yes/No		
TC_MGC_NO_BI_09	Yes/No	Yes/No		
TC_MGC_NO_BI_10	Yes/No	Yes/No		
TC_MGC_NO_BI_11	Yes/No	Yes/No		
TC_MGC_NO_BI_12	Yes/No	Yes/No		

ATS Reference	Selected?	Run?	Verdict	Observations (Reference to any observations made in clause C.8)
TC_MGC_NO_BI_13	Yes/No	Yes/No		
TC_MGC_NO_BI_14	Yes/No	Yes/No		
TC_MGC_SC_BV_01	Yes/No	Yes/No		
TC_MGC_SC_BV_02	Yes/No	Yes/No		
TC_MGC_SC_BV_03	Yes/No	Yes/No		
TC_MGC_SC_BV_04	Yes/No	Yes/No		
TC_MGC_SC_BV_05	Yes/No	Yes/No		
TC_MGC_SC_BV_06	Yes/No	Yes/No		
TC_MGC_SC_BV_07	Yes/No	Yes/No		
TC_MGC_SC_BV_08	Yes/No	Yes/No		
TC_MGC_SC_BV_09	Yes/No	Yes/No		
TC_MGC_SC_BV_10	Yes/No	Yes/No		
TC_MGC_SC_BV_11	Yes/No	Yes/No		
TC_MGC_SC_BV_12	Yes/No	Yes/No		
TC_MGC_SC_BV_13	Yes/No	Yes/No		
TC_MGC_SC_BV_14	Yes/No	Yes/No		
TC_MGC_SC_BV_15	Yes/No	Yes/No		
TC_MGC_SC_BI_01	Yes/No	Yes/No		
TC_MGC_SC_BI_02	Yes/No	Yes/No		
TC_MGC_SC_BI_03	Yes/No	Yes/No		
TC_MGC_SC_BI_04	Yes/No	Yes/No		
TC_MGC_SC_BI_05	Yes/No	Yes/No		
TC_MGC_SC_BI_06	Yes/No	Yes/No		
TC_MGC_SC_BI_07	Yes/No	Yes/No		
TC_MGC_SC_BI_08	Yes/No	Yes/No		
TC_MGC_SC_BI_09	Yes/No	Yes/No		
TC_MGC_SC_BI_10	Yes/No	Yes/No		
TC_MGC_SC_BI_11	Yes/No	Yes/No		
TC_MGC_SC_BI_12	Yes/No	Yes/No		
TC_MGC_SC_BI_13	Yes/No	Yes/No		
TC_MGC_AM_BV_01	Yes/No	Yes/No		
TC_MGC_AM_BV_02	Yes/No	Yes/No		
TC_MGC_AM_BV_03	Yes/No	Yes/No		
TC_MGC_AM_BV_04	Yes/No	Yes/No		
TC_MGC_AM_BV_05	Yes/No	Yes/No		
TC_MGC_AM_BV_06	Yes/No	Yes/No		
TC_MGC_AM_BV_07	Yes/No	Yes/No		
TC_MGC_AM_BV_08	Yes/No	Yes/No		
TC_MGC_TR_BV_01	Yes/No	Yes/No		
TC_MGC_TR_BV_02	Void			
TC_MGC_TR_BV_03	Yes/No	Yes/No		
TC_MGC_TR_BV_04	Yes/No	Yes/No		
TC_MGC_TR_BV_05	Yes/No	Yes/No		
TC_MGC_TR_BV_06	Yes/No	Yes/No		

C.8 Observations

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

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History

Document history		
V1.1.1	November 2004	Publication