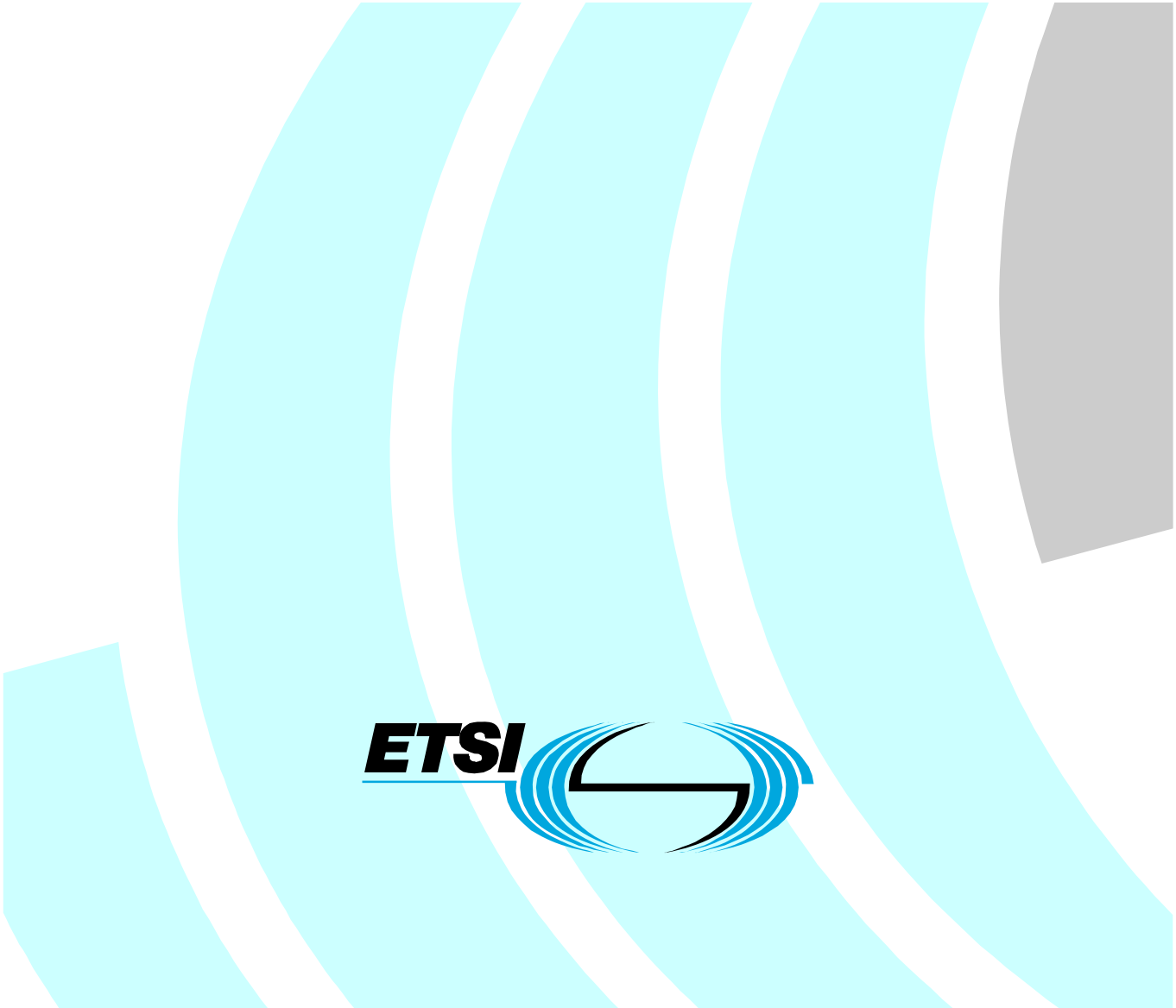
ETSI TS 186 007-2 V3.1.1 (2011-08)

Technical Specification

**Technical Committee for IMS Network Testing (INT);
Communication HOLD (HOLD) using IP Multimedia (IM)
Core Network (CN) subsystem;
Conformance Testing;
Part 2: Test Suite Structure and Test Purposes (TSS&TP)**



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Contents

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee IMS Network Testing (INT).

The present document is part 2 of a multi-part deliverable covering Communication Hold (HOLD) as identified below:

Part 1: "Protocol Implementation Conformance Statement (PICS)";

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 specification".

1 Scope

The present document specifies the Test Suite Structure and Test Purposes (TSS&TP) of the Communication HOLD service, based on stage one and two of the ISDN HOLD supplementary services.

A further part of the present document specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma based on the present document.

Within the TISPAN NGN Release 1 Next Generation Network (NGN) the stage 3 description is specified using the IP-Multimedia Call Control Protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP).

2 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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2.1 Normative references

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

[1] ETSI TS 124 610: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Communication HOLD (HOLD) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.610 version 8.3.0 Release 8)".

[2] ETSI TS 186 007-1: "Telecommunications and Internet Converged Services and Protocols for Advanced Networking (TISPAN); Communication HOLD (CH); Part 1: Protocol Implementation Conformance Statement (PICS)".

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

2.2 Informative references

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.

Not applicable.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions given in TS 124 610 [1] and the following apply:

Abstract Test Suite (ATS): Refer to ISO/IEC 9646-1 [3].

Implementation Under Test (IUT): Refer to ISO/IEC 9646-1 [3].

PICS proforma: Refer to ISO/IEC 9646-1 [3].

point of control and observation: Refer to ISO/IEC 9646-1 [3].

Protocol Implementation Conformance Statement (PICS): Refer to ISO/IEC 9646-1 [3].

System Under Test (SUT): Refer to ISO/IEC 9646-1 [3].

Test Purpose (TP): Refer to ISO/IEC 9646-1 [3].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TS 124 610 [1] and the following apply:

TSS Test Suite Structure

4 Test Suite Structure (TSS)

ServedUser		
	WithUPDATE	**CH_U01_xxx**
	WithoutUPDATE	**CH_U02_xxx**

Figure 1: Test suite structure

4.1 Configuration

The scope of the present document is to test the signalling and procedural aspects of the stage 3 requirements as described in TS 124 610 [1]. The stage 3 description describes the requirements for several network entities and also the requirments regarding for terminal devices. Therefore several interfaces (reference points) are addressed to satisfy the test of the different entities.

Therefore to test the appropriate entities the configurations below are applicable.

4.1.1 Testing of the AS

The AS entity is responsible for performing and managing services. The ISC interface is the appropriate access point for testing.

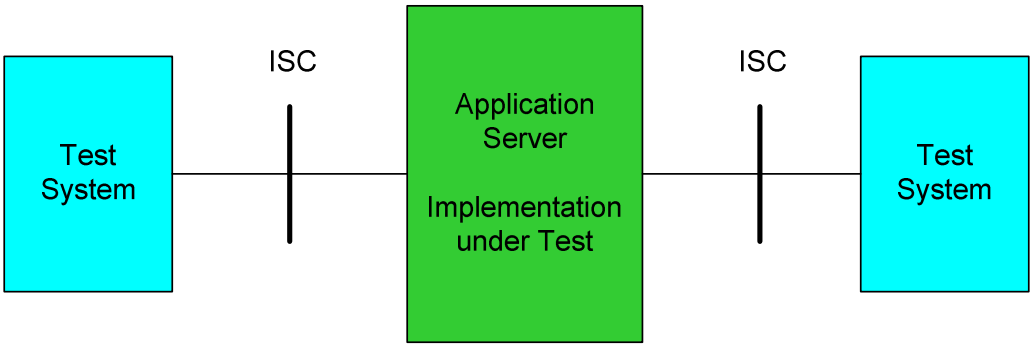

Figure 2: Applicable interface to test AS functionalities

If the ISC interface is not accessible it is also possible to perform the tesst of the AS using any NNI (Mw, Mg, Mx) interface (see figure 3). In case only the Gm interface is accessible this interface can be used instead for testing, but the verification of all requirements may not be possible.

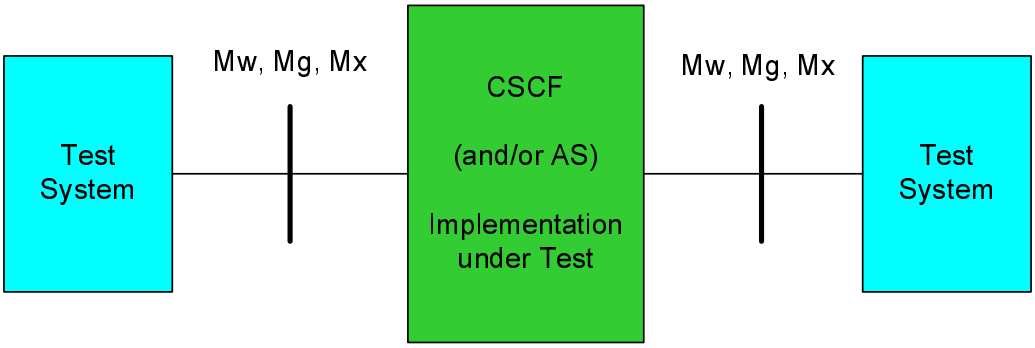

Figure 3: Applicable interfaces for tests using a (generic) NNI interface

4.1.2 Testing of the UE

There are special clauses in the protocol standard describing the procedures that apply at the originating and terminating user equipment. Therefore the test configuration below has been chosen.

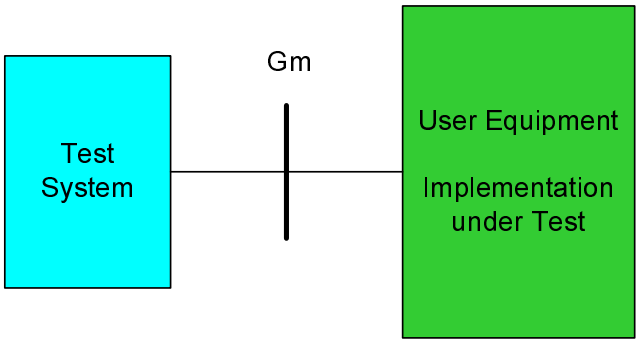

Figure 4: Applicable configuration to test UE functionalities

5 Test Purposes (TP)

5.1 Introduction

For each test requirement a TP is defined.

5.1.1 TP naming convention

TPs are numbered, starting at 001, within each group. Groups are organized according to the TSS. Additional references are added to identify the actual test suite and whether it applies to the network or the user (see table 1).

Table 1: TP identifier naming convention scheme

Identifier: **<ss>_<iut><group>_<nnn>**				
<ss>	=	supplementary service:	e.g. "CH"	
<iut>	=	type of IUT:	U N	User Network
<group>	=	group	2 digit field representing group reference according to TSS	
<nnn>	=	sequential number	(001-999)	

5.1.2 Test strategy

As the base standard TS 124 610 [1] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the PICS specification TS 186 007-1 [2].

5.2 User TPs for HOLD

All PICS items referred to in this clause are as specified in TS 186 007-1 [2] unless indicated otherwise by another numbered reference.

5.2.1 Served user

5.2.1.1 Communication Hold with support for UPDATE

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_001	4.5.2.1	PICS 1/2
Test purpose: *Session hold. UPDATE method is used. Individual media streams are affected. The media stream was previously set to sendrecv.* Ensure that the IUT to hold an individual media stream of the communication session, sends an UPDATE request containing an sdp body with an attribute line indicating 'a= sendonly'.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendrecv' • Individual media streams			
Comments:			
User Equipment		**Test Equipment**	
UPDATE(**sendonly**)	➔		

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_002	4.5.2.1	PICS 1/2
Test purpose: *Session hold. UPDATE method is used. Individual media streams are affected. The media stream was previously set to recvonly.* Ensure that the IUT to hold an individual media stream of the communication session, sends an UPDATE request containing an sdp body with an attribute line indicating 'a=inactive'.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'recvonly' • Individual media streams			
Comments:			
User Equipment		**Test Equipment**	
UPDATE(**inactive**)	➔		

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_003	4.5.2.1	PICS 1/2
Test purpose: *Session resume. UPDATE method is used. Individual media streams are affected. The media stream was previously set to sendonly.* Ensure that the IUT to resume an individual media stream of the communication session, sends an UPDATE request containing an sdp body with an attribute line indicating 'a=sendrecv' or without attribute line.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendonly' • Individual media streams			
Comments: **User Equipment** **Test Equipment** UPDATE(**sendrecv** or empty) ➔			

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_004	4.5.2.1	PICS 1/2
Test purpose: *Session resume. UPDATE method is used. Individual media streams are affected. The media stream was previously set to inactive.* Ensure that the IUT to resume an individual media stream of the communication session, sends an UPDATE request containing an sdp body with an attribute line indicating 'a=recvonly'.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'inactive' • Individual media streams			
Comments: **User Equipment** **Test Equipment** UPDATE(**sendonly**) ➔			

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_005	4.5.2.1	PICS 1/2
Test purpose: *Session hold. UPDATE method is used. All media streams are affected. The media stream were previously set to sendrecv.* Ensure that the IUT to hold all media streams of the communication session, sends an UPDATE request containing an sdp body with a session level direction attribute line indicating 'a=sendonly'.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • All media streams were previously set to 'sendrecv' • Individual media streams			
Comments: **User Equipment** **Test Equipment** UPDATE(**sendonly**) ➔			

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_006	4.5.2.1	PICS 1/2
Test purpose: *Session hold. UPDATE method is used. All media streams are affected. The media stream were previously set to recvonly.* Ensure that the IUT to hold all media streams of the communication session, sends an UPDATE request containing an sdp body with a session level direction attribute line indicating 'a=inactive'.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • All media streams were previously set to 'recvonly' • Individual media streams			
Comments: **User Equipment** **Test Equipment** UPDATE(**inactive**) ➔			

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_007	4.5.2.1	PICS 1/2
Test purpose: *Session resume. UPDATE method is used. All media streams are affected. The media stream were previously set to sendonly.* Ensure that the IUT to resume all media streams of the communication session, sends an UPDATE request containing an sdp body with a session level direction attribute line indicating 'a=sendrecv' or without attribute line.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • All media streams were previously set to 'sendonly' • Individual media streams			
Comments: **User Equipment** **Test Equipment** UPDATE(**sendrecv** or empty) ➔			

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_008	4.5.2.1	PICS 1/2
Test purpose: *Session resume. UPDATE method is used. All media streams are affected. The media streams were previously set to inactive.* Ensure that the IUT to resume all media streams of the communication session, sends an UPDATE request containing an sdp body with a session level direction attribute line indicating 'a=recvonly'.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • All media streams were previously set to 'inactive' • Individual media streams			
Comments: **User Equipment** **Test Equipment** UPDATE(**sendonly**) ➔			

5.2.1.2 Communication Hold without support for UPDATE

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithoutUPDATE	CH_U02_001	4.5.2.1	
Test purpose: *Session hold. UPDATE method is not used. Individual media streams are affected. The media stream was previously set to sendrecv.* Ensure that the IUT to hold an individual media stream of the communication session, sends a ReINVITE request containing an sdp body with an attribute line indicating 'a=sendonly'.			

Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendrecv' • Individual media streams
Comments: **User Equipment** **Test Equipment** ReINVITE(**sendonly**) ➔

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithoutUPDATE	CH_U02_002	4.5.2.1	
Test purpose: *Session hold. UPDATE method is not used. Individual media streams are affected. The media stream was previously set to recvonly.* Ensure that the IUT to hold an individual media stream of the communication session, sends a ReINVITE request containing an sdp body with an attribute line indicating 'a=inactive'.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'recvonly' • Individual media streams			
Comments: **User Equipment** **Test Equipment** ReINVITE(**inactive**) ➔			

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithoutUPDATE	CH_U02_003	4.5.2.1	
Test purpose: *Session resume. UPDATE method is not used. Individual media streams are affected. The media stream was previously set to sendonly.* Ensure that the IUT to resume an individual media stream of the communication session, sends a ReINVITE request containing an sdp body with an attribute line indicating 'a=sendrecv' or without attribute line.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendonly' • Individual media streams			
Comments: **User Equipment** **Test Equipment** ReINVITE(**sendrecv** or empty) ➔			

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithoutUPDATE	CH_U02_004	4.5.2.1	
Test purpose: *Session resume. UPDATE method is not used. Individual media streams are affected. The media stream was previously set to inactive.* Ensure that the IUT to resume an individual media stream of the communication session, sends a ReINVITE request containing an sdp body with an attribute line indicating 'a=recvonly'.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'inactive' • Individual media streams			
Comments: **User Equipment** **Test Equipment** ReINVITE(**sendonly**) ➔			

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithoutUPDATE	CH_U02_005	4.5.2.1	
Test purpose: *Session hold. UPDATE method is not used. All media streams are affected. The media stream were previously set to sendrecv.* Ensure that the IUT to hold all media streams of the communication session, sends a ReINVITE request containing an sdp body with a session level direction attribute line indicating 'a=sendonly'.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • All media streams were previously set to 'sendrecv' • Individual media streams			
Comments: **User Equipment** **Test Equipment** ReINVITE(**sendonly**) ➔			

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithoutUPDATE	CH_U02_006	4.5.2.1	
Test purpose: *Session hold. UPDATE method is not used. All media streams are affected. The media stream were previously set to recvonly.* Ensure that the IUT to hold all media streams of the communication session, sends a ReINVITE request containing an sdp body with a session level direction attribute line indicating 'a=inactive'.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • All media streams were previously set to 'recvonly' • Individual media streams			
Comments: **User Equipment** **Test Equipment** ReINVITE(**inactive**) ➔			

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithoutUPDATE	CH_U02_007	4.5.2.1	
Test purpose: *Session resume. UPDATE method is not used. All media streams are affected. The media stream were previously set to sendonly.* Ensure that the IUT to resume all media streams of the communication session, sends a ReINVITE request containing an sdp body with a session level direction attribute line indicating 'a=sendrecv' or without attribute line.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • All media streams were previously set to 'sendonly' • Individual media streams			
Comments: **User Equipment** **Test Equipment** ReINVITE(**sendrecv** or empty) ➔			

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_008	4.5.2.1	
Test purpose: *Session resume. UPDATE method is not used. All media streams are affected. The media streams were previously set to inactive.* Ensure that the IUT to resume all media streams of the communication session, sends a ReINVITE request containing an sdp body with a session level direction attribute line indicating 'a=recvonly'.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • All media streams were previously set to 'inactive' • Individual media streams			
Comments: **User Equipment** → **Test Equipment** ReINVITE(**sendonly**) →			

6 Compliance

An ATS which complies with the present document shall:

a) consist of a set of test cases corresponding to the set or to a subset of the TPs specified in clause 5;

b) use a TSS which is an appropriate subset of the whole of the TSS specified in clause 4;

c) use the same naming conventions for the test groups and test cases;

d) maintain the relationship specified in clause 5 between the test groups and TPs and the entries in the PICS proforma to be used for test case deselection.

In the case of a) or b) above, a subset shall be used only where a particular Abstract Test Method (ATM) makes some TPs untestable. All testable TPs from clause 5 shall be included in a compliant ATS.

History

Document history		
V1.1.1	July 2006	Publication
V3.1.1	August 2011	Publication