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**Integrated Services Digital Network (ISDN);  
Signalling System No.7;  
ISDN User Part (ISUP) version 2;  
Part 36: Abstract Test Suite (ATS) and partial Protocol  
Implementation eXtra Information for Testing (PIXIT) proforma  
specification for supplementary services**

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## Foreword

This draft European Telecommunication Standard (ETS) has been produced by the Signalling Protocols and Switching (SPS) Technical Committee of the European Telecommunications Standards Institute (ETSI), and is now submitted for the Public Enquiry phase of the ETSI standards approval procedure.

This ETS is part 36 of a multi-part standard covering the ISDN User Part (ISUP) version 2 for the international interface, as described below:

- Part 1: "Basic services";
- Part 2: "ISDN supplementary services";
- Part 3: "Calling Line Identification Presentation (CLIP) supplementary service";
- Part 4: "Calling Line Identification Restriction (CLIR) supplementary service";
- Part 5: "Connected Line Identification Presentation (COLP) supplementary service";
- Part 6: "Connected Line Identification Restriction (COLR) supplementary service";
- Part 7: "Terminal Portability (TP) supplementary service";
- Part 8: "User-to-User Signalling (UUS) supplementary service";
- Part 9: "Closed User Group (CUG) supplementary service";
- Part 10: "Subaddressing (SUB) supplementary service";
- Part 11: "Malicious Call Identification (MCID) supplementary service";
- Part 12: "Conference call, add-on (CONF) supplementary service";
- Part 14: "Explicit Call Transfer (ECT) supplementary service";
- Part 15: "Diversion supplementary services";
- Part 16: "Call Hold (HOLD) supplementary service";
- Part 17: "Call Waiting (CW) supplementary service";
- Part 18: "Completion of Calls to Busy Subscriber (CCBS) supplementary service";
- Part 19: "Three-Party (3PTY) supplementary service";
- Part 31: "Protocol Implementation Conformance Statement (PICS) proforma specification for basic services";
- Part 32: "Test Suite Structure and Test Purposes (TSS&TP) specification for basic services";
- Part 33: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for basic services";
- Part 34: "PICS proforma specification for supplementary services";
- Part 35: "TSS&TP specification for supplementary services";
- Part 36: "ATS and partial PIXIT proforma specification for supplementary services".**

NOTE: Part 13 has been withdrawn.  
Parts 20 to 30 are spare for future supplementary services.

<b>Proposed transposition dates</b>	
Date of latest announcement of this ETS (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

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## 1 Scope

This thirty-sixth part of ETS 300 356 provides the conformance test specification for the ISDN User Part (ISUP) version 2 supplementary services defined in ETS 300 356-2 [2] to ETS 300 356-19 [18] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-1 [23].

This ETS contains the Abstract Test Suite (ATS) for ISUP version 2 supplementary services, written in Tree and Tabular Combined Notation (TTCN) as specified in ISO/IEC 9646-3 [25]. It is based on ETS 300 356-35 [20] which specifies the Test Suite Structure and Test Purposes (TSS&TP).

This ETS applies only to exchanges having implemented the ISUP version 2 protocol specifications [2-18]. It is applicable for conformance testing of all types of exchanges as specified in the ISUP version 2 protocol specifications [2-18]. This ETS does not deal with compatibility testing.

The main text part of this ETS presents the requirements regarding the chosen test method and the conventions used within the ATS.

The annexes contain the ATS for ISUP version 2 supplementary services (available on electronic media), the partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma and the Protocol Conformance Test Report (PCTR) proforma.

## 2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] ETS 300 356-1 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 1: Basic services [ITU-T Recommendations Q.761 to Q.764 (1993), modified]".
- [2] ETS 300 356-2 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 2: ISDN supplementary services [ITU-T Recommendation Q.730 (1993), modified]".
- [3] ETS 300 356-3 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 3: Calling Line Identification Presentation (CLIP) supplementary service [ITU-T Recommendation Q.731, clause 3 (1993), modified]".
- [4] ETS 300 356-4 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 4: Calling Line Identification Restriction (CLIR) supplementary service [ITU-T Recommendation Q.731, clause 4 (1993), modified]".
- [5] ETS 300 356-5 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 5: Connected Line Identification Presentation (COLP) supplementary service [ITU-T Recommendation Q.731, clause 5 (1993), modified]".
- [6] ETS 300 356-6 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 6: Connected Line Identification Restriction (COLR) supplementary service [ITU-T Recommendation Q.731, clause 6 (1993), modified]".

- [7] ETS 300 356-7 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 7: Terminal Portability (TP) supplementary service [ITU-T Recommendation Q.733, clause 4 (1993), modified]".
- [8] ETS 300 356-8 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 8: User-to-User Signalling (UUS) supplementary service [ITU-T Recommendation Q.737, clause 1 (1993), modified]".
- [9] ETS 300 356-9 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 9: Closed User Group (CUG) supplementary service [ITU-T Recommendation Q.735, clause 1 (1993), modified]".
- [10] ETS 300 356-10 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 10: Subaddressing (SUB) supplementary service [CCITT Recommendation Q.731, section 8 (1992), modified]".
- [11] ETS 300 356-11 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 11: Malicious Call Identification (MCID) supplementary service".
- [12] ETS 300 356-12 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 12: Conference call, add-on (CONF) supplementary service [ITU-T Recommendation Q.734, clause 1 (1993), modified]".
- [13] ETS 300 356-14 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 14: Explicit Call Transfer (ECT) supplementary service".
- [14] ETS 300 356-15 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 15: Diversion supplementary services [ITU-T Recommendation Q.732, clauses 2 to 5 (1993), modified]".
- [15] ETS 300 356-16 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 16: Call Hold (HOLD) supplementary service [ITU-T Recommendation Q.733, clause 2 (1993), modified]".
- [16] ETS 300 356-17 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 17: Call Waiting (CW) supplementary service [CCITT Recommendation Q.733, section 1 (1992), modified]".
- [17] ETS 300 356-18 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 18: Completion of Calls to Busy Subscriber (CCBS) supplementary service".
- [18] ETS 300 356-19 (1995): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 19: Three party (3PTY) supplementary service [ITU-T Recommendation Q.734, clause 2 (1993), modified]".
- [19] ETS 300 356-34: "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 34: Protocol Implementation Conformance Statement (PICS) proforma specification for supplementary services".



- [20] ETS 300 356-35: "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 35: Test Suite Structure and Test Purposes (TSS&TP) specification for supplementary services".
- [21] ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [22] ETR 141: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; The Tree and Tabular Combined Notation (TTCN) style guide".
- [23] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [24] ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".
- [25] ISO/IEC 9646-3: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".
- [26] 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".

### 3 Definitions and abbreviations

#### 3.1 Definitions

For the purposes of this ETS, the following definitions apply:

- terms defined in the ISUP version 2 reference specifications [1-18];
- terms defined in ISO/IEC 9646-1 [23] and in ISO/IEC 9646-3 [25].

In particular, the following terms apply:

**Abstract Test Case (ATC):** A complete and independent specification of the actions required to achieve a specific test purpose, defined at the level of abstraction of a particular Abstract Test Method, starting in a stable testing state and ending in a stable testing state (see ISO/IEC 9646-1 [23], subclause 3.3.3).

**Abstract Test Method (ATM):** The description of how an IUT is to be tested, given at an appropriate level of abstraction to make the description independent of any particular realization of a Means of Testing, but with enough detail to enable abstract test cases to be specified for this method (see ISO/IEC 9646-1 [23], subclause 3.3.5).

**Abstract Test Suite (ATS):** A test suite composed of abstract test cases (see ISO/IEC 9646-1 [23], subclause 3.3.6).

**Implementation Under Test (IUT):** An implementation of one or more OSI protocols in an adjacent user/provider relationship, being part of a real open system which is to be studied by testing (see ISO/IEC 9646-1 [23], subclause 3.3.43).

**Means Of Testing (MOT):** The combination of equipment and procedures that can perform the derivation, selection, parametrization and execution of test cases, in conformance with a reference standardized ATS, and can produce a conformance log (see ISO/IEC 9646-1 [23], subclause 3.3.54).

**Point of Control and Observation (PCO):** A point within a testing environment where the occurrence of test events is to be controlled and observed, as defined in an abstract test method (see ISO/IEC 9646-1 [23], subclause 3.3.64).

**pre-test condition:** A setting or state in the IUT which cannot be achieved by providing stimulus from the test environment.

**Protocol Implementation Conformance Statement (PICS):** A statement made by the supplier of a protocol claimed to conform to a given specification, stating which capabilities have been implemented (see ISO/IEC 9646-1 [23], subclauses 3.3.39 and 3.3.80).

**PICS proforma:** A document, in the form of a questionnaire, which when completed for an implementation or system becomes the PICS.

**Protocol Implementation eXtra Information for Testing (PIXIT):** A statement made by a supplier or implementor of an IUT (protocol) which contains or references all of the information related to the IUT and its testing environment, which will enable the test laboratory to run an appropriate test suite against the IUT (see ISO/IEC 9646-1 [23], subclauses 3.3.41 and 3.3.81).

**PIXIT proforma:** A document, in the form of a questionnaire, which when completed for the IUT becomes the PIXIT.

**System Under Test (SUT):** The real open system in which the IUT resides (see ISO/IEC 9646-1 [23], subclause 3.3.103).

**user:** He access protocol entity at the User side of the user-network interface where a T reference point or coincident S and T reference point applies.

### 3.2 Abbreviations

For the purposes of this ETS, the following abbreviations apply:

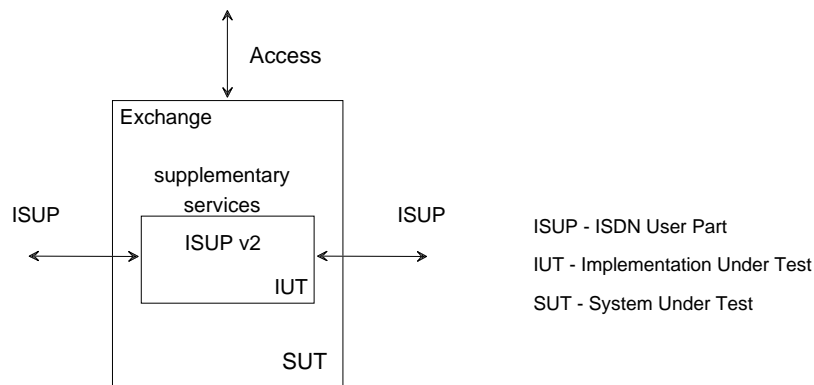
3PTY	Three-Party
ASE	Application Service Entity
ASP	Abstract Service Primitive
ATC	Abstract Test Case
ATM	Abstract Test Method
ATS	Abstract Test Suite
CCBS	Completion of Calls to Busy Subscriber
CDIV	Call Diversion
CFB	Call Forwarding Busy
CFNR	Call Forwarding No Reply
CFU	Call Forwarding Unconditional
CIC	Circuit Identification Code
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
CntrlE	Controlling Exchange
COLP	Connected Line Identification Presentation
COLR	Connected Line Identification Restriction
CONF	Conference call, add-on
CUG	Closed User Group
CW	Call Waiting
DLE	Destination Local Exchange
DSS1	Digital Subscriber Signalling System No. one
ECT	Explicit Call Transfer
HOLD	Call Hold
IncIE	Incoming International Exchange
IntermE	Intermediate Exchange
ISC	International Switching Centre
ISDN	Integrated Services Digital Network
ISUP	ISDN User Part
ITE	International Transit Exchange
IUT	Implementation Under Test
IWorkE	Interworking Exchange
LAPD	Link Access Protocol for the D-channel
LT	Lower Tester
MCID	Malicious Call Identification

MOT	Means Of Testing
MTC	Main Test Component
MTP	Message Transfer Part
NNI	Network-Network Interface
NTE	National Transit Exchange
OLE	Originating Local Exchange
OutIE	Outgoing International Exchange
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
SCS	System Conformance Statement
SP	Signalling Point
SPC	Signalling Point Code
SS7	Signalling System No.7
SUB	Subaddressing
SUT	System Under Test
TCP	Test Co-ordination Procedures
TSS&TP	Test Suite Structure and Test Purposes
TTCN	Tree and Tabular Combined Notation
UNI	User-network interface
UUS	User-to-User Signalling
UUSn	UUS service n (n = 1..3)

## 4 Implementation under test and test methods

### 4.1 Identification of the system and implementation under test

The System Under Test (SUT) is an exchange. The Implementation Under Test (IUT) is the ISUP version 2 implementation in this exchange, mainly the part responsible for the supplementary services functionality, as shown in figure 1.

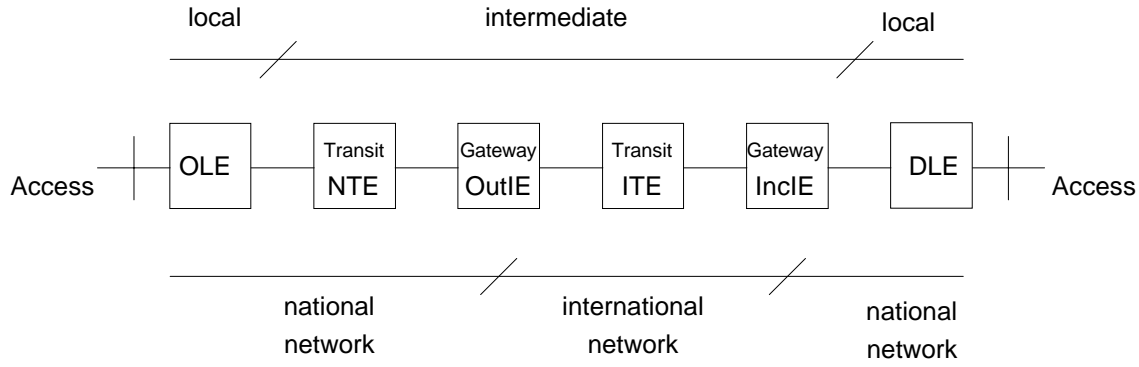


**Figure 1: Exchange as SUT**

The ISUP signalling protocol can be observed on the SS7 link on the Network-Network Interface (NNI). The effects of signalling procedures of ISUP can be observed on the circuits controlled by the ISUP on the NNI.

The ISUP implementation will in some exchanges have to interwork with the Access signalling system on the User-Network Interface (UNI) and involve call handling in order to establish end-to-end connections.

From ETS 300 356-1 [1], several types of exchanges (or roles) can be identified (see figure 2).



OLE - Originating Local Exchange  
 NTE - National Transit Exchange  
 OutIE - Outgoing International Exchange  
 ITE - International Transit Exchange  
 IncIE - Incoming International Exchange  
 DLE - Destination Local Exchange

**Figure 2: Roles of exchanges**

The exchanges can be divided in two main groups according to their functionality: local exchanges, where calls originate and terminate, and intermediate exchanges, with transit functionality. Local exchanges are national, i.e. belong to a national network. Intermediate exchanges are national or international. The international intermediate exchanges which permit access to the international network are the gateway exchanges (incoming and outgoing), also called International Switching Centres (ISCs). A particularity for some supplementary services, e.g. call diversion services, is that a local exchange is not only originator/terminator of the call but also mediator between two far-end local exchanges.

The roles of the exchanges are summarized in table 1.

**Table 1: Roles of exchanges**

	Local exchange	Intermediate exchange	
		National	International
Originating Local Exchange	OLE		
Transit Exchange		NTE	ITE
Incoming/Gateway Exchange			IncIE
Outgoing/Gateway Exchange			OutIE
Destination Local Exchange	DLE		

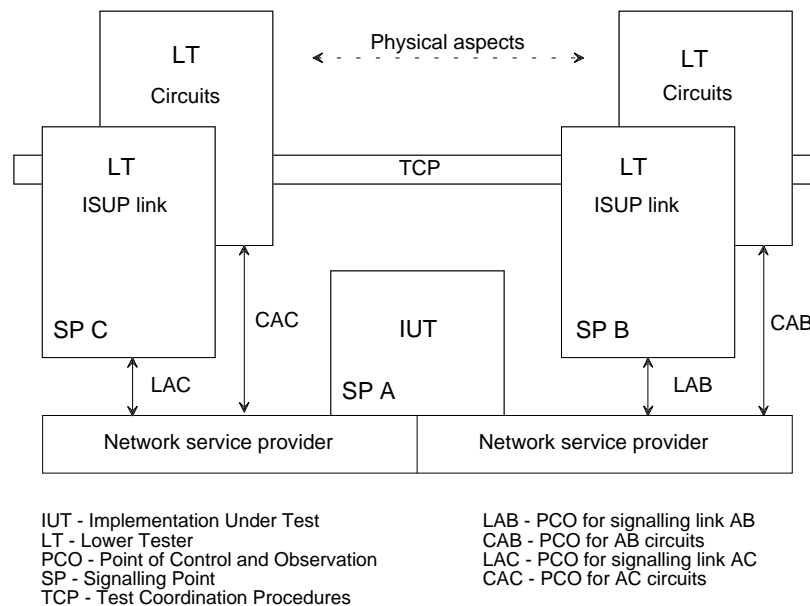
**4.2 ATM and testing configuration for ISUP version 2**

The Abstract Test Method (ATM) chosen for the ISUP version 2 supplementary services testing specification is the distributed multi-party test method. The ATM is defined at an appropriate level of abstraction so that the test cases may be specified appropriately, without adding restrictions to the IUT. The testing architectures are described in the following subclauses.

The ATS is written in concurrent TTCN.

#### 4.2.1 Intermediate exchanges

The configuration proposed for testing intermediate exchanges is shown in figure 3. In order to test the protocol and functionality of transit and gateway exchanges one needs to consider the incoming and outgoing side of the SUT.



**Figure 3: ISUP test method for intermediate exchanges**

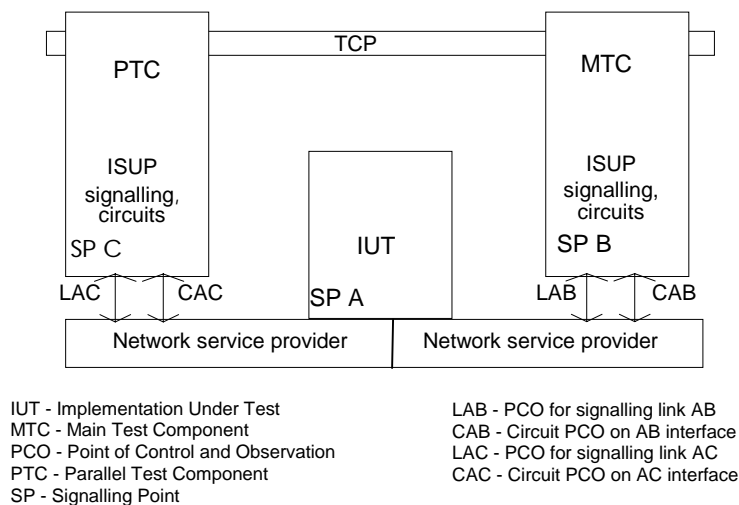
The IUT is observed and controlled from two ISUP links with associated circuits. The Points of Control and Observation (PCO) are labelled LAB and CAB on one side, and LAC and CAC on the other.

The LAB and LAC PCOs are used by the Lower Testers (LT) for controlling the ISUP signalling link, whereas the CAB and CAC PCOs are used by the lower testers for observing circuit related events, such as connectivity, echo control check, alerting tone, etc.

The ISUP PDUs to be sent and observed on the LAB PCO side allow for PDU constraints to be specified and coded down to the bit-level.

NOTE: The underlying network service provider is the Message Transfer Part (MTP) protocol as specified in ITU-T Recommendations Q.701-Q.707/ETS 300 008.

Figure 4 shows the actual used configuration for intermediate exchanges, with a Main Test Component (MTC), responsible for the A-B interface and a slave Parallel Testing Component (PTC), responsible for the C-A interface.



**Figure 4: ISUP test configuration for intermediate exchanges**

The Test Co-ordination Procedures (TCP) allow for communication between the testers. The test components are mostly implicitly co-ordinated (asynchronously); the TCPs are only used when it is necessary to obtain the verdict from the parallel test component.

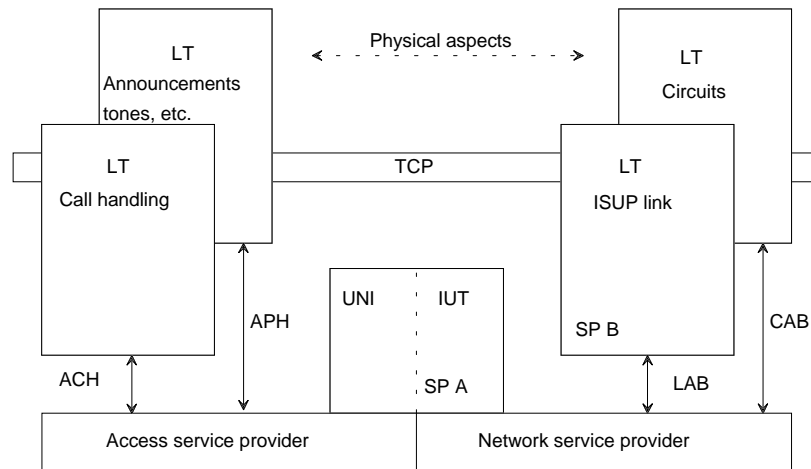
#### 4.2.2 Local exchanges

When testing a local exchange as specified in the reference standard, it is difficult, if not impossible, to observe only ISUP PDUs, if functionality such as connectivity, tones and announcements etc. associated with protocol events is to be considered and used to assign verdicts. The reference standard often refers to actions or events initiated by or to be observed by the calling or called user.

A Point of Control of Observation (PCO) from ISUP (the IUT) to the access side is needed, e.g. for stimulating the local exchange to originate a call (send an IAM). Another PCO is needed to check connectivity or generated tones by the local exchange.

There is no exposed interface from ISUP (the IUT) towards the access side. For practical testing purposes the natural choice is the access interface. It is therefore reasonable to make use of the access interface (e.g. the user access interface DSS1) as a PCO and to use existing naming conventions for the Abstract Service Primitives (ASPs) to be used on this PCO.

Figure 5 presents a multi-party testing configuration for local exchanges. In this figure each tester has a single PCO. The PCO for the access uses the underlying access service provider (e.g. LAPD, in case of DSS1) for observing access events and stimulating the ISUP via the access. The ISUP implementation (IUT) cannot be tested without involving the User-Network Interface (UNI).



IUT - Implementation Under Test  
 LT - Lower Tester  
 TCP - Test Coordination Procedures  
 SP - Signalling Point  
 UNI - User-network interface  
 LAB - PCO for AB signalling link  
 CAB - Circuit PCO on AB interface  
 ACH - Access signalling PCO - (D-channel)  
 APH - Access physical circuit PCO - (B-channel)

**Figure 5: ISUP test method for originating / destination exchanges**

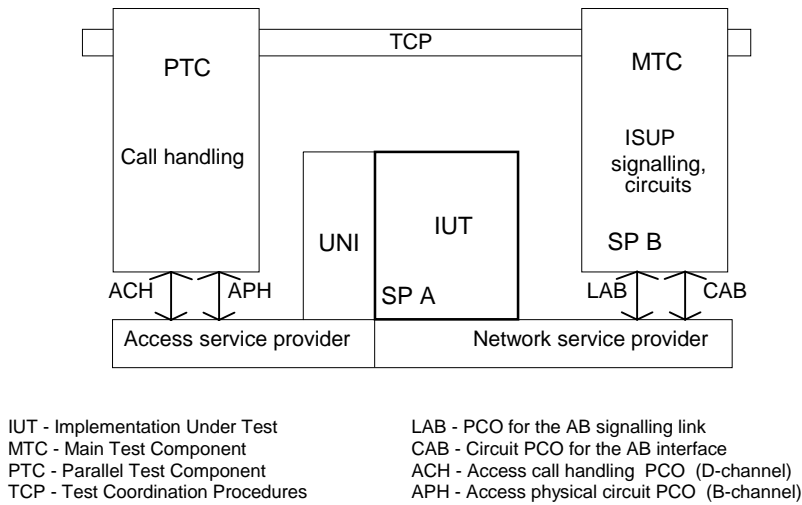
On the right side there are two PCOs as in the test configuration presented in the previous subclause. The LAB PCO is used by the LT controlling the ISUP signalling link, whereas the CAB PCO is used by another LT controlling the traffic channels (for observing circuit related events, such as connectivity, alerting tone, etc.).

The ISUP PDUs to be sent and observed on the LAB PCO side allow for PDU constraints to be specified and coded down to the bit-level.

On the access side there are two PCOs and two LTs similar to the ones on network side. The ACH PCO is used to observe and control the Call Handling events, whereas the APH is used to control and observe physical aspects (e.g. tones and announcements).

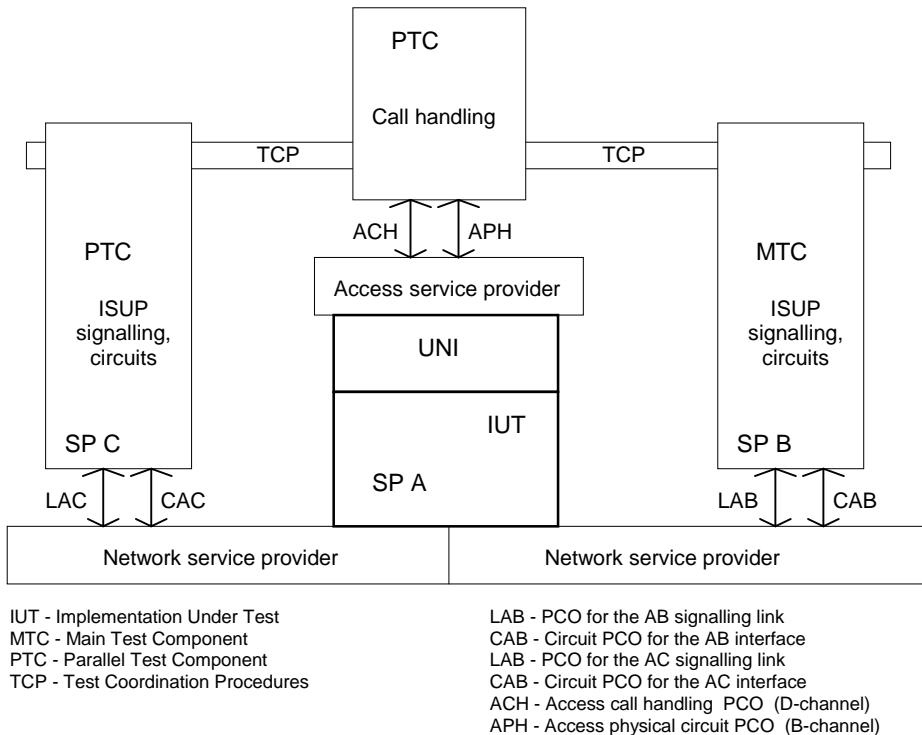
The access PDUs to be sent and observed on the ACH PCO are chosen at an appropriate level of abstraction. For the access ASPs DSS1-like primitive names have been used, whereas access PDU constraints have not been coded to the bit level. The access aspects cannot be left out for local exchanges, widening in this respect to some extent the scope of the ISUP testing.

Figure 6 shows the actual used configuration for local exchanges, with a Master Testing Component (MTC), responsible for the A-B interface and a slave Parallel Testing Component (PTC), responsible for the UNI access interface. The maintenance PCO is integrated in the MTC, for simplifying reasons.



**Figure 6: ISUP test configuration for local exchanges**

There are test cases for local exchanges for some supplementary services where a mixed configuration is used. This configuration is presented in figure 7 and it may be deduced from the configurations presented in figures 4 and 6.



**Figure 7: ISUP mixed test configuration for local exchanges**

In this configuration the main test component located on the right side supervises two parallel test components: one ISUP PTC and one access PTC. The local exchange in this case is the exchange serving the user who activated the supplementary service.



### 4.2.3 Master-slave aspects in the test configuration

Figures 4, 6 and 7 show the logical test components of the adopted test configuration. The main test component is located on the right side of the IUT, whereas on the left side there are different parallel test components: ISUP (figure 4), access (figure 6) or both (figure 7).

The ATS is written so that the appropriate configuration is chosen - depending on the exchange's role to be tested.

The right side main test component may be international or national ISUP and is configurable so that any two of these may be run, based on the answers given to PIXIT questions.

The left side parallel test component may be of any kind: it may be international or national ISUP, an access signalling system or a non-ISUP user part. At test execution exactly one of these configurations will be chosen, based on the information provided in the PICS and PIXIT.

For the gateway exchanges it is assumed by default that the call is set up from the left PTC to the right MTC. So for outgoing international exchange the national network is located on the left side and the international network on the right side. For incoming international exchanges the international network is located on the left side and the national network on the right side.

The message flow in the test cases is designed in such a way that the verdict is assigned based on observing the behaviour on the right side. The left side will in this case mainly act as a slave stimulus/acceptor. There are, however, test cases where the expected behaviour of both sides is needed to assign the verdict.

## 5 Conventions used within the ATS

The abbreviations are consistently used within the ATS written in TTCN and are useful for understanding and/or maintaining the coding detail level.

### 5.1 Test suite parameters, constants and variables

Most test suite parameters are named using the pattern: TSP\_Xxx

Most test suite variables are named using the pattern: TSV\_Xxx

All test suite constants are named using the pattern: TSC\_Xxx

### 5.2 Test case variables

Most test case variables are named using the pattern: TCV\_Xxx

### 5.3 ASP constraints

The naming scheme for ASP constraints is: PDU\_XY\_more\_specific

where PDU indicates the PDU type included, XY indicates the direction and more specific (if any) describes the constraint with abbreviated naming convention.

EXAMPLE: IAM\_BA\_CgPN (IAM sent from SP B to SP A, with a calling party number included).

## 5.4 Timers

All timers are named using the pattern: Tname[\_min or \_max]

EXAMPLE: T7\_min (waiting for ACM timer);  
TCFNR\_max (call forwarding on no reply timer).

## 5.5 Test suite operations

Most names for test suite operations follow the scheme: TSO\_TestSuiteOperationName

The TSO functions are specified using the syntax of C programming language or pseudo code.

## 5.6 Aliases

Aliases are extensively used instead of cumbersome names for ASP primitives (like MTP TRANSFER\_IND).

They are named using the scheme:

S\_XXX for the sending of an ISUP message XXX which resolves to the MTP TRANSFER\_REQ primitive

R\_XXX for the receipt of an ISUP message XXX which is resolved to the MTP TRANSFER\_IND primitive

## 5.7 Test case and step identifiers

The general naming convention for the test cases is: ISS{[\_TC]}\_X\_N\_n{[\_n]}{[\_a]}

where:

- TC** designates ASE specific test cases (optional, used only for CCBS);
- X** is either **V** - valid stimulus or **I** - inopportune stimulus;
- N** is the sequence number of the supplementary service;
- 1<sup>st</sup> n** is a sequence number used within the supplementary service;
- 2<sup>nd</sup> n** is an additional used number (optional, for UUS only); and
- a** is a lowercase letter to distinguish between tests in case of variants deriving from the same test purpose.

The general naming convention for the dispatcher test steps is: SS\_N\_n\_{a}

where N and n are the same as the test case to which they relate.

Some generic steps with appropriate names, e.g. to complete the call-set-up (+S\_ACM\_etc\_BA, +R\_ACM\_etc\_AC) are also used.

## 5.8 Constraints

The constraints visible on the test case level are all ASP constraints. The ASPs are chained to PDU constraints every time an ISUP message is involved. This allows for a higher level of abstraction on the test case level and hides the information in the ASP constraint part. In order to reduce the number of constraints, a technique where a default constraint is manipulated/modified on the send line is used. This also has the advantage of increasing readability. In the case of access ASPs, no further PDU constraints are defined.

## 5.9 Dynamic behaviour

The general scheme of running a test case can be described shortly as follows:

Firstly, the control is given to the main test component, which starts executing. This main test component controls and observes the IUT on the AB signalling link.

Secondly after possibly initializing some data the main test component creates the corresponding parallel test component. This component is the slave process and it is located in a separate test step. It is dispatched using a parameter derived from the role of the exchange to be tested. For each test case the concurrent "slave" parallel test component(s), either ISUP, or access, or both is (are) created. For example if the test configuration requires only an ISUP tester on the left side, then the ISUP parallel test component is created, and so on.

The main (right) and the parallel (left) test components will then co-operate, most of the time asynchronously driven by the received messages, until the test purpose is achieved and the verdict is set.

The behaviour description is kept on an abstract level, hiding whenever it is possible programming details in the underlying test steps. Test steps are used whenever this saves code without decreasing the readability of the test case. Often functionally related test steps are grouped together using local trees.

The comment fields are extensively used. The message sequence chart for the chosen testing configuration is provided at test case level to quickly give an overview of the expected behaviour.

## 5.10 Pre-test conditions

For each test it is assumed that the circuits are unblocked from both sides and idle. If a particular test case needs special pre-test conditions, these are presented in description part of that test case.

## **Annex A (normative):      ATS for ISUP version 2 supplementary services**

This ATS has been produced using the Tree and Tabular Combined Notation (TTCN) according to ISO/IEC 9646-3 [25].

The ATS was developed on a separate TTCN software tool and therefore the TTCN tables are not completely referenced in the contents table. 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 a Postscript file (RSL.PS<sup>1)</sup>) which accompanies this ETS.

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

The TTCN.MP representation corresponding to this ATS is contained in an ASCII file (RSL.MP<sup>1)</sup>) which accompanies this ETS.

NOTE:       According to ISO/IEC 9646-3 [25], in case of a conflict in interpretation of the operational semantics of TTCN.GR and TTCN.MP, the operational semantics of the TTCN.GR representation takes precedence.

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<sup>1)</sup> This file is located in an archive file named 356{ \_EP.LZH. Other file formats are available on request.

**Annex B (normative): Partial PIXIT proforma for ISUP version 2 supplementary services**

Notwithstanding the provisions of the copyright clause related to the text of this ETS, ETSI grants that users of this ETS 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:	ETS 300 356
ATS specification:	ISUP_v2_suppl_services
Abstract test method:	Distributed multi-party test method

**B.3 Test laboratory**

Test laboratory identification:	
Test laboratory manager:	
Test laboratory contact:	
Means of testing:	
Instructions for completion:	

**B.4 Client identification**

Client identification:	
Client test manager:	
Test facilities required:	

## B.5 System Under Test (SUT)

Name:	
Version:	
SCS number:	
Machine configuration:	
Operating system identification:	
IUT identification:	
PICS reference for IUT:	
Limitations of the SUT:	
Environmental conditions:	

## B.6 Ancillary protocols

Protocol name	Version number	PICS reference	PIXIT reference	PCTR reference
MTP				
Access protocol				

## B.7 Protocol information for ISUP

### B.7.1 Protocol identification

Name:	ISDN User Part (ISUP) version 2
Version:	
PICS references:	

NOTE: The PICS reference should reference a completed PICS which is conformant with the PICS proforma contained in ETS 300 356-34.

### B.7.2 IUT information - PIXIT proforma tables

The PIXIT information requested in the following tables is needed to provide the necessary information for the execution of the testing campaign. It is assumed that one exchange role is tested at one time. The answers to some PIXIT questions are related to an individual role. A typical example is the nature of address indicator of the called party number value, which is different in the case of international gateways and national exchanges. That is why if several roles are to be tested, one completed copy of the PIXIT proforma for each role is needed.

### B.7.2.1 General configuration

#### Signalling Point Codes (SPCs)

Two signalling point codes (one incoming and one outgoing) need to be defined for the IUT. For an international intermediate exchange the incoming and outgoing point codes are the same, whereas for an international gateway exchange there are two different signalling point codes because they belong to two separate networks (international and national).

#### Circuit Identification Codes (CICs)

From a formal point of view, in most test cases it is sufficient to use only one CIC per signalling link in order to execute the testing. From a practical point of view the tester could select any CIC within a range of CICs belonging to a route, when initiating a call setup. The tester can, however, use the first CIC in the circuit group, without reducing the generality. The ATS requires the first CIC in the group as an answer to the PIXIT questions 9 and 10 in table B.1.

**Table B.1: General configuration**

Item	Parameter	Parameter Type	Explanation	Value
1	TSP_SPA_R	BIT_14	SS7 Signalling point code of the SUT on the AB interface (right side)	
2	TSP_SPA_L	BIT_14	SS7 Signalling point code of the SUT on the AC interface (left side)	
3	TSP_SPB	BIT_14	SS7 Signalling point code of the tester on the AB interface	
4	TSP_SPC	BIT_14	SS7 Signalling point code of the tester on the AC interface	
5	TSP_NI_R	BIT_2	SS7 Network indicator on the AB interface	
6	TSP_NI_L	BIT_2	SS7 Network indicator on the AC interface	
7	TSP_SLS_R	BIT_4	SS7 Signalling link selection on the AB interface	
8	TSP_SLS_L	BIT_4	SS7 Signalling link selection on the AC interface	
9	TSP_CIC_R	BIT_12	SS7 Circuit identification code on the AB interface	
10	TSP_CIC_L	BIT_12	SS7 Circuit identification code on the AC interface	
11	TSP_NB_CICS	INTEGER	Number of SS7 circuit identification codes on the AB and AC interfaces	

**B.7.2.2 Parameter values**

**Subscriber numbers**

The subscriber numbers have to be specified for each role which is to be tested. All numbers are by default national (significant) numbers, having the nature of address indicator set accordingly. International numbers are built depending on the specific test situation by either using the own network's country code (answer to the PIXIT question B.2/9) or a foreign country code (answer to the PIXIT question B.2/10). The nature of address indicator for these numbers is set to "international".

**Table B.2: Subscriber number parameter values**

Item	Parameter	Parameter Type	Explanation	Value
1	TSP_Nb_A	HEX_N	Subscriber number located at SP A	
2	TSP_Nb_B	HEX_N	Subscriber number located at SP B	
3	TSP_Nb_C	HEX_N	Subscriber number located at SP C	
4	TSP_Nb_D	HEX_N	Subscriber number located at SP D, beyond SP B	
5	TSP_Nb_D2	HEX_N	Another subscriber number located at SP D, beyond SP B	
6	TSP_Nb_D3	HEX_N	Another subscriber number located at SP D, beyond SP B	
7	TSP_Nb_D4	HEX_N	Another subscriber number located at SP D, beyond SP B	
8	TSP_Nb_E	HEX_N	Subscriber number located at SP E, beyond SP C	
9	TSP_ownCC	HEX_N	Country code of the own network	
10	TSP_foreignCC	HEX_N	Country code of a foreign network	
11	TSP_prefix	HEX_N	@ Prefix added to an international number	



Table B.3: Additional number parameter values

Item	Parameter	Parameter Type	Explanation	Value
1	TSP_Nb_A_default	HEX_N	Subscriber number which will be provided as default number by the network for UNI at SP A (IUT)	
2	TSP_Nb_B_default	HEX_N	Subscriber number which will be provided as default number by the network for UNI at SP B	
3	TSP_GenNb_B	HEX_N	Additional subscriber number located at SP B	
4	TSP_Nb_C_avail	HEX_N	Information made available by the network in case of MCID for the UNI at SP C (the only information the gateway has, e.g. trunk number)	
5	TSP_Nb_C_default	HEX_N	Subscriber number which will be provided as default number by the network for UNI at SP C	
6	TSP_Nb_C_incomplete	HEX_N	Subscriber number which will be provided as incomplete number by the network for UNI at SP C	
7	TSP_GenNb_C	HEX_N	Additional subscriber number located at SP C	
8	TSP_Nb_A_MSN	HEX_N	Multiple subscriber number for the subscriber located at SP A	
9	TSP_Nb_B_DDI	HEX_N	Subscriber number located at SP B, with DDI	
10	TSP_Nb_B_MSN	HEX_N	Multiple subscriber number for the subscriber located at SP B	
11	TSP_Nb_C_Non_ISUP	HEX_N	Subscriber number for which the call will be routed to SP C, on a non-ISUP route	
12	TSP_Nb_A_sameCUG_nolA	HEX_N	Subscriber number located at SP A belonging to the same CUG as the calling party at SP B - without incoming access	
13	TSP_Nb_A_sameCUG_IA	HEX_N	Subscriber number located at SP A belonging to the same CUG as the calling party at SP B - with incoming access	
14	TSP_Nb_A_otherCUG_nolA	HEX_N	Subscriber number located at SP A belonging to a different CUG as the calling party at SP B - without incoming access	
15	TSP_Nb_A_otherCUG_IA	HEX_N	Subscriber number located at SP A belonging to a different CUG as the calling party at SP B - with incoming access	

Table B.4: Other supplementary services parameter values

Item	Parameter	Parameter Type	Explanation	Value
1	TSP_sub_address_length	OCT_1	Length of the sub-address	
2	TSP_Sub_A	OCT_N	Sub-address of UNI at SP A (IUT)	
3	TSP_Sub_B	OCT_N	Sub-address of UNI at SP B (right side)	
4	TSP_Sub_C	OCT_N	Sub-address of UNI at SP C (left side)	
5	TSP_Sub_D	OCT_N	Sub-address of UNI at SP D (beyond right side SP B)	
6	TSP_Sub_E	OCT_N	Sub-address of UNI at SP E (beyond left side SP C)	
7	TSP_CUGIC_Ntwld	HEX_4	Network identity of the Closed user group interlock code	
8	TSP_CUGIC_Ntwld_int	HEX_4	International Network identity of the Closed user group interlock code	
9	TSP_CUGIC_BinCode	HEX_4	Binary code of the Closed user group interlock code	
10	TSP_CUGIC_BinCode_int	HEX_4	International Binary code of the Closed user group interlock code	
11	TSP_CTRef	OCT_1	Call transfer reference	

## B.7.2.3 Timer values

Table B.5: Timer values

Item	Parameter	Parameter Type	Explanation	Value
1	TSP_T_WAIT	INTEGER	Wait for some event timer (max 30 s)	
2	TSP_T_GUARD	INTEGER	Guard timer for the test case (min 30 s)	
3	TSP_tol	INTEGER	Tolerance for ISUP timers (in percent)	
4	TSP_T_LOCAL	INTEGER	Internal timer for testing CCBS-T8 timer (1 s)	

B.7.2.4 Other information

Table B.6: Other information

Item	Parameter	Parameter Type	Explanation	Value
1	TSP_maxB_channel	INTEGER	Maximum number of B channels at the access side (needed for call waiting)	
2	TSP_Orig_ISDN_access	BIT_1	Use of ISDN access at origination ('1'B) or non-ISDN access ('0'B) in the Forward call indicators	
3	TSP_Dest_ISDN_access	BIT_1	Use of ISDN access at termination ('1'B) or non-ISDN access ('0'B) in the Backward call indicators	
4	TSP_international_call	BOOLEAN	Set up an international call (TRUE) or a national call (FALSE) - used in the International/national call indicator in the Forward call indicators	
5	TSP_international_CdPN	BOOLEAN	Use an international (TRUE) or a national significant number (FALSE) Called party number	
6	TSP_PDC	INTEGER	Propagation delay for incoming and outgoing routes	
7	TSP_PDC_X	INTEGER	Propagation delay on the incoming route (in ms)	
8	TSP_PDC_D	INTEGER	Propagation delay on the outgoing route (in ms)	

**Annex C (normative): Protocol Conformance Test Report (PCTR) proforma for ISUP version 2 supplementary services**

Notwithstanding the provisions of the copyright clause related to the text of this ETS, ETSI grants that users of this ETS 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.

**C.1 Identification summary**

**C.1.1 Protocol conformance test report**

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

**C.1.2 IUT identification**

Name:	
Version:	
Protocol specification:	ETS 300 356
PICS:	
Previous PCTR (if any)	

**C.1.3 Testing environment**

PIXIT number:	
ATS specification:	ETS 300 356-36
Abstract test method:	Distributed multi-party test method
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 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.*

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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.*

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

**C.2 IUT conformance status**

This IUT has / has not been shown by conformance assessment to be conforming to the referenced 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 word "has not", otherwise strike the words "has".*

**C.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.*

**C.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 6 of this report) strike the word "did". otherwise strike the words "did not".*

Summary of the results of groups of test:

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

### C.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.

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

### C.6 Test campaign report

Table C.1: Test campaign report - CLIP

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
CLIP/ISS_V_1_1				
CLIP/ISS_V_1_2				
CLIP/ISS_V_1_3				
CLIP/ISS_V_1_4				
CLIP/ISS_V_1_5				
CLIP/ISS_V_1_6				
CLIP/ISS_V_1_7				
CLIP/ISS_V_1_8				
CLIP/ISS_V_1_9				
CLIP/ISS_V_1_10				
CLIP/ISS_V_1_11				
CLIP/ISS_V_1_12				
CLIP/ISS_V_1_13				
CLIP/ISS_I_1_14				
CLIP/ISS_V_1_15				
CLIP/ISS_V_1_16				
CLIP/ISS_I_1_17				
CLIP/ISS_I_1_18				
CLIP/ISS_V_1_19				

Table C.2: Test campaign report - CLIR

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
CLIR/ISS_V_2_1				
CLIR/ISS_V_2_2				
CLIR/ISS_V_2_3				
CLIR/ISS_V_2_4				
CLIR/ISS_V_2_5				
CLIR/ISS_V_2_6				
CLIR/ISS_V_2_7_a				
CLIR/ISS_V_2_7_b				
CLIR/ISS_V_2_8				
CLIR/ISS_V_2_9				
CLIR/ISS_V_2_10				
CLIR/ISS_V_2_11				

Table C.3: Test campaign report - COLP

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
COLP/ISS_V_3_1				
COLP/ISS_V_3_2_a				
COLP/ISS_V_3_2_b				
COLP/ISS_V_3_2_c				
COLP/ISS_V_3_3_a				
COLP/ISS_V_3_3_b				
COLP/ISS_V_3_4_a				
COLP/ISS_V_3_4_b				
COLP/ISS_I_3_5_a				
COLP/ISS_I_3_5_b				
COLP/ISS_V_3_6_a				
COLP/ISS_V_3_6_b				
COLP/ISS_V_3_7_a				
COLP/ISS_V_3_7_b				
COLP/ISS_V_3_8_a				
COLP/ISS_V_3_8_b				
COLP/ISS_V_3_9_a				
COLP/ISS_V_3_9_b				
COLP/ISS_I_3_10_a				
COLP/ISS_I_3_10_b				
COLP/ISS_I_3_10_c				
COLP/ISS_I_3_10_d				
COLP/ISS_V_3_11_a				
COLP/ISS_V_3_11_b				
COLP/ISS_V_3_12_a				
COLP/ISS_V_3_12_b				
COLP/ISS_V_3_13_a				
COLP/ISS_V_3_13_b				
COLP/ISS_V_3_14_a				
COLP/ISS_V_3_14_b				
COLP/ISS_V_3_15_a				
COLP/ISS_V_3_15_b				
COLP/ISS_V_3_16_a				
COLP/ISS_V_3_16_b				
COLP/ISS_V_3_17_a				
COLP/ISS_V_3_17_b				
COLP/ISS_V_3_18_a				
COLP/ISS_V_3_18_b				

Table C.4: Test campaign report - COLR

COLR/ISS_V_4_1_a				
COLR/ISS_V_4_1_b				
COLR/ISS_I_4_2_a				
COLR/ISS_I_4_2_b				
COLR/ISS_V_4_3_a				
COLR/ISS_V_4_3_b				
COLR/ISS_V_4_4_a				
COLR/ISS_V_4_4_b				
COLR/ISS_V_4_5_a				
COLR/ISS_V_4_5_b				
COLR/ISS_I_4_6_a				
COLR/ISS_I_4_6_b				
COLR/ISS_V_4_7_a				
COLR/ISS_V_4_7_b				
COLR/ISS_V_4_8_a				
COLR/ISS_V_4_8_b				
COLR/ISS_V_4_9_a				
COLR/ISS_V_4_9_b				
COLR/ISS_V_4_10_a				
COLR/ISS_V_4_10_b				
COLR/ISS_V_4_11_a				
COLR/ISS_V_4_11_b				
COLR/ISS_V_4_12_a				
COLR/ISS_V_4_12_b				

Table C.5: Test campaign report - TP

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
TP/ISS_V_5_1				
TP/ISS_V_5_2				
TP/ISS_I_5_3				
TP/ISS_V_5_4_a				
TP/ISS_V_5_4_b				
TP/ISS_V_5_5				
TP/ISS_V_5_6				
TP/ISS_V_5_7				
TP/ISS_V_5_8				
TP/ISS_V_5_10				
TP/ISS_V_5_11				
NO_TP/ISS_I_5_9				



Table C.6.1.1: Test campaign report - UUS1 implicit

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
UUS/UUS1_I/ISS_V_6_1_1				
UUS/UUS1_I/ISS_V_6_1_2_a				
UUS/UUS1_I/ISS_V_6_1_2_b				
UUS/UUS1_I/ISS_I_6_1_3_a				
UUS/UUS1_I/ISS_I_6_1_3_b				
UUS/UUS1_I/ISS_I_6_1_4_a				
UUS/UUS1_I/ISS_I_6_1_4_b				
UUS/UUS1_I/ISS_V_6_1_5_a				
UUS/UUS1_I/ISS_V_6_1_5_b				
UUS/UUS1_I/ISS_I_6_1_6_a				
UUS/UUS1_I/ISS_I_6_1_6_b				

Table C.6.1.2: Test campaign report - UUS1 explicit

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
UUS/UUS1_E/ISS_V_6_1_7_a				
UUS/UUS1_E/ISS_V_6_1_7_b				
UUS/UUS1_E/ISS_I_6_1_8_a				
UUS/UUS1_E/ISS_I_6_1_8_b				
UUS/UUS1_E/ISS_I_6_1_9_a				
UUS/UUS1_E/ISS_I_6_1_9_b				
UUS/UUS1_E/ISS_I_6_1_10				
UUS/UUS1_E/ISS_V_6_1_11_a				
UUS/UUS1_E/ISS_V_6_1_11_b				
UUS/UUS1_E/ISS_I_6_1_12_a				
UUS/UUS1_E/ISS_I_6_1_12_b				
UUS/UUS1_E/ISS_V_6_1_13_a				
UUS/UUS1_E/ISS_V_6_1_13_b				
UUS/UUS1_E/ISS_I_6_1_14_a				
UUS/UUS1_E/ISS_I_6_1_14_b				
UUS/UUS1_E/ISS_V_6_1_15_a				
UUS/UUS1_E/ISS_V_6_1_15_b				
UUS/UUS1_E/ISS_V_6_1_17_a				
UUS/UUS1_E/ISS_V_6_1_17_b				
UUS/UUS1_E/ISS_V_6_1_18				
UUS/UUS1_E/ISS_V_6_1_19_a				
UUS/UUS1_E/ISS_V_6_1_19_b				
UUS/UUS1_E/ISS_V_6_1_20_a				
UUS/UUS1_E/ISS_V_6_1_20_b				
UUS/UUS1_E/ISS_V_6_1_21				
UUS/UUS1_E/ISS_V_6_1_22				
UUS/UUS1_E/ISS_V_6_1_23				
UUS/NO_UUS1_E/ISS_V_6_1_24				
UUS/NO_UUS1_E/ISS_I_6_1_16_a				
UUS/NO_UUS1_E/ISS_I_6_1_16_b				
UUS/NO_UUS1_E/ISS_I_6_1_16_c				

Table C.6.2: Test campaign report - UUS2

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
UUS/UUS2/ISS_V_6_2_1				
UUS/UUS2/ISS_V_6_2_2_a				
UUS/UUS2/ISS_V_6_2_2_b				
UUS/UUS2/ISS_V_6_2_3				
UUS/UUS2/ISS_V_6_2_6_a				
UUS/UUS2/ISS_V_6_2_6_b				
UUS/UUS2/ISS_V_6_2_7				
UUS/UUS2/ISS_I_6_2_9_a				
UUS/UUS2/ISS_I_6_2_9_b				
UUS/UUS2/ISS_V_6_2_10				
UUS/UUS2/ISS_I_6_2_11				
UUS/UUS2/ISS_I_6_2_13				
UUS/UUS2/ISS_V_6_2_14_a				
UUS/UUS2/ISS_V_6_2_14_b				
UUS/UUS2/ISS_V_6_2_15_a				
UUS/UUS2/ISS_V_6_2_15_b				
UUS/UUS2/ISS_V_6_2_16_a				
UUS/UUS2/ISS_V_6_2_16_b				
UUS/NO_UUS2/ISS_I_6_2_4				
UUS/NO_UUS2/ISS_I_6_2_5				
UUS/NO_UUS2/ISS_I_6_2_8_a				
UUS/NO_UUS2/ISS_I_6_2_8_b				
UUS/NO_UUS2/ISS_I_6_2_12				

Table C.6.3: Test campaign report - UUS3

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
UUS/UUS3/ISS_V_6_3_1				
UUS/UUS3/ISS_V_6_3_2_a				
UUS/UUS3/ISS_V_6_3_2_b				
UUS/UUS3/ISS_V_6_3_3_a				
UUS/UUS3/ISS_V_6_3_3_b				
UUS/UUS3/ISS_V_6_3_4				
UUS/UUS3/ISS_V_6_3_7_a				
UUS/UUS3/ISS_V_6_3_7_b				
UUS/UUS3/ISS_V_6_3_8				
UUS/UUS3/ISS_V_6_3_10_a				
UUS/UUS3/ISS_V_6_3_10_b				
UUS/UUS3/ISS_V_6_3_11				
UUS/UUS3/ISS_I_6_3_12				
UUS/UUS3/ISS_I_6_3_13				
UUS/UUS3/ISS_V_6_3_14				
UUS/UUS3/ISS_V_6_3_15				
UUS/UUS3/ISS_V_6_3_16				
UUS/NO_UUS3/ISS_I_6_3_5				
UUS/NO_UUS3/ISS_I_6_3_6_a				
UUS/NO_UUS3/ISS_I_6_3_6_b				
UUS/NO_UUS3/ISS_I_6_3_6_c				
UUS/NO_UUS3/ISS_I_6_3_9_a				
UUS/NO_UUS3/ISS_I_6_3_9_b				

Table C.7: Test campaign report - CUG

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
CUG/ISS_V_7_1				
CUG/ISS_V_7_2				
CUG/ISS_V_7_3				
CUG/ISS_V_7_6				
CUG/ISS_V_7_7				
CUG/ISS_V_7_8				
CUG/ISS_V_7_9				
CUG/ISS_V_7_10				
CUG/ISS_V_7_11				
CUG/ISS_V_7_12				
CUG/ISS_V_7_13				
CUG/ISS_V_7_14				
CUG/ISS_V_7_15				
CUG/ISS_V_7_16				
CUG/ISS_V_7_17				
CUG/ISS_V_7_18				
CUG/ISS_V_7_19				
CUG/ISS_V_7_20				
CUG/ISS_V_7_21				
CUG/ISS_I_7_22				
CUG/ISS_I_7_23				
NO_CUG/ISS_I_7_4				
NO_CUG/ISS_I_7_5				

Table C.8: Test campaign report - SUB

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
SUB/ISS_V_8_1				
SUB/ISS_V_8_2				
SUB/ISS_V_8_3				
SUB/ISS_I_8_4				
SUB/ISS_V_8_5				

Table C.9: Test campaign report - MCID

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
MCID/ISS_V_9_1				
MCID/ISS_V_9_2				
MCID/ISS_V_9_3				
MCID/ISS_V_9_5_a				
MCID/ISS_V_9_5_b				
MCID/ISS_V_9_6_a				
MCID/ISS_V_9_6_b				
MCID/ISS_V_9_8				
MCID/ISS_I_9_9				
MCID/ISS_V_9_10_a				
MCID/ISS_V_9_10_b				
MCID/ISS_V_9_11				
MCID/ISS_I_9_12_a				
MCID/ISS_I_9_12_b				
MCID/ISS_I_9_13				
MCID/ISS_V_9_14				
MCID/ISS_V_9_15_a				
MCID/ISS_V_9_15_b				
MCID/ISS_V_9_15_c				
MCID/ISS_V_9_15_d				
MCID/ISS_V_9_15_e				
MCID/ISS_V_9_15_f				
MCID/ISS_V_9_16				
MCID/ISS_V_9_17				
MCID/ISS_V_9_18				
NO_MCID/ISS_I_9_4				
NO_MCID/ISS_I_9_7				

Table C.10: Test campaign report - CONF

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
CONF/ISS_V_10_1				
CONF/ISS_V_10_2				
CONF/ISS_V_10_3_a				
CONF/ISS_V_10_3_b				
CONF/ISS_V_10_4				
CONF/ISS_V_10_5				
CONF/ISS_V_10_6				
CONF/ISS_V_10_7				
CONF/ISS_V_10_8				
CONF/ISS_V_10_9				
CONF/ISS_V_10_10				
CONF/ISS_I_10_11				
CONF/ISS_I_10_12				
CONF/ISS_V_10_13_a				
CONF/ISS_V_10_13_b				
CONF/ISS_V_10_14				
CONF/ISS_V_10_15				
CONF/ISS_V_10_16				

Table C.11: Test campaign report - ECT

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
ECT/ISS_V_11_1_a				
ECT/ISS_V_11_1_b				
ECT/ISS_V_11_2_a				
ECT/ISS_V_11_2_b				
ECT/ISS_V_11_3_a				
ECT/ISS_V_11_3_b				
ECT/ISS_V_11_4_a				
ECT/ISS_V_11_4_b				
ECT/ISS_V_11_5				
ECT/ISS_V_11_6				
ECT/ISS_I_11_7				
ECT/ISS_I_11_8				
ECT/ISS_V_11_9				
ECT/ISS_V_11_10				
ECT/ISS_V_11_11				
ECT/ISS_V_11_12				
ECT/ISS_V_11_13				
ECT/ISS_V_11_14_a				
ECT/ISS_V_11_14_b				
ECT/ISS_V_11_15				
ECT/ISS_V_11_16				
ECT/ISS_V_11_17				
ECT/ISS_V_11_18				
ECT/ISS_V_11_19				
ECT/ISS_V_11_20_a				
ECT/ISS_V_11_20_b				
ECT/ISS_V_11_21_a				
ECT/ISS_V_11_21_b				
ECT/ISS_V_11_22_a				
ECT/ISS_V_11_22_b				
ECT/ISS_V_11_23_a				
ECT/ISS_V_11_23_b				
ECT/ISS_V_11_24				
ECT/ISS_V_11_25				
ECT/ISS_V_11_26_a				
ECT/ISS_V_11_26_b				
ECT/ISS_V_11_27_a				
ECT/ISS_V_11_27_b				
ECT/ISS_V_11_28				
ECT/ISS_V_11_29				
ECT/ISS_V_11_30				
ECT/ISS_V_11_31_a				
ECT/ISS_V_11_31_b				
ECT/ISS_V_11_32				
ECT/ISS_V_11_33_a				
ECT/ISS_V_11_33_b				
ECT/ISS_V_11_34				
ECT/ISS_V_11_35				
ECT/ISS_V_11_36				
ECT/ISS_V_11_37				

Table C.12: Test campaign report - CDIV

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
CDIV/ISS_V_12_1_a				
CDIV/ISS_V_12_1_b				
CDIV/ISS_V_12_1_c				
CDIV/ISS_V_12_2_a				
CDIV/ISS_V_12_2_b				
CDIV/ISS_V_12_2_c				
CDIV/ISS_V_12_2_d				
CDIV/ISS_V_12_3				
CDIV/ISS_V_12_4_a				
CDIV/ISS_V_12_4_b				
CDIV/ISS_V_12_4_c				
CDIV/ISS_V_12_5				
CDIV/ISS_I_12_6				
CDIV/ISS_I_12_7				
CDIV/ISS_I_12_8				
CDIV/ISS_V_12_9_a				
CDIV/ISS_V_12_9_b				
CDIV/ISS_V_12_10				
CDIV/ISS_I_12_11_a				
CDIV/ISS_I_12_11_b				
CDIV/ISS_I_12_11_c				
CDIV/ISS_V_12_12_a				
CDIV/ISS_V_12_12_b				
CDIV/ISS_V_12_12_c				
CDIV/ISS_V_12_13_a				
CDIV/ISS_V_12_13_b				
CDIV/ISS_V_12_14_a				
CDIV/ISS_V_12_14_b				
CDIV/ISS_V_12_15_a				
CDIV/ISS_V_12_15_b				
CDIV/ISS_V_12_15_c				
CDIV/ISS_V_12_16_a				
CDIV/ISS_V_12_16_b				
CDIV/ISS_V_12_17				
CDIV/ISS_V_12_18				
CDIV/ISS_V_12_19				
CDIV/ISS_V_12_20				
CDIV/ISS_V_12_21				
CDIV/ISS_V_12_22				
CDIV/ISS_V_12_23				
CDIV/ISS_V_12_24				
CDIV/ISS_V_12_25				
CDIV/ISS_V_12_26_a				
CDIV/ISS_V_12_26_b				
CDIV/ISS_V_12_26_c				
CDIV/ISS_V_12_27				
CDIV/ISS_V_12_28_a				
CDIV/ISS_V_12_28_b				
CDIV/ISS_V_12_29				
CDIV/ISS_V_12_30				
CDIV/ISS_V_12_31				
CDIV/ISS_V_12_32				
CDIV/ISS_V_12_33				

(continued)

Table C.12 (concluded): Test campaign report - CDIV

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
CDIV/ISS_V_12_34				
CDIV/ISS_V_12_35				
CDIV/ISS_V_12_36				
CDIV/ISS_V_12_37				
CDIV/ISS_V_12_38				
CDIV/ISS_V_12_39				
CDIV/ISS_V_12_40_a				
CDIV/ISS_V_12_40_b				
CDIV/ISS_V_12_40_c				
CDIV/ISS_V_12_40_d				
CDIV/ISS_V_12_40_e				
CDIV/ISS_V_12_41_a				
CDIV/ISS_V_12_41_b				
CDIV/ISS_V_12_42				
CDIV/ISS_V_12_43_a				
CDIV/ISS_V_12_43_b				
CDIV/ISS_V_12_44				
CDIV/ISS_V_12_45				
CDIV/ISS_V_12_46				
CDIV/ISS_V_12_47				
CDIV/ISS_V_12_48				
CDIV/ISS_V_12_49_a				
CDIV/ISS_V_12_49_b				
CDIV/ISS_V_12_49_c				

Table C.13: Test campaign report - HOLD

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
HOLD/ISS_V_13_1				
HOLD/ISS_V_13_2				
HOLD/ISS_V_13_3				
HOLD/ISS_V_13_4				
HOLD/ISS_V_13_5				
HOLD/ISS_V_13_6_a				
HOLD/ISS_V_13_6_b				
HOLD/ISS_V_13_7_a				
HOLD/ISS_V_13_7_b				
HOLD/ISS_V_13_8				
HOLD/ISS_V_13_9				
HOLD/ISS_V_13_10				
HOLD/ISS_V_13_11				
HOLD/ISS_V_13_12				

Table C.14: Test campaign report - CW

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
CW/ISS_V_14_1				
CW/ISS_V_14_2				
CW/ISS_V_14_3				
CW/ISS_V_14_4				
CW/ISS_V_14_5				
CW/ISS_V_14_6				
CW/ISS_V_14_7				
CW/ISS_V_14_8				

Table C.15.1: Test campaign report - CCBS - ISUP part

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
CCBS/ISUP/ISS_V_15_1				
CCBS/ISUP/ISS_V_15_2				
CCBS/ISUP/ISS_V_15_3				
CCBS/ISUP/ISS_V_15_4				
CCBS/ISUP/ISS_V_15_5				
CCBS/ISUP/ISS_V_15_6				
CCBS/ISUP/ISS_V_15_7				
CCBS/ISUP/ISS_V_15_8				
CCBS/ISUP/ISS_V_15_9				
CCBS/ISUP/ISS_V_15_10				
CCBS/ISUP/ISS_V_15_11				
CCBS/ISUP/ISS_V_15_12				
CCBS/ISUP/ISS_V_15_13				
CCBS/ISUP/ISS_V_15_14				
CCBS/ISUP/ISS_V_15_15				
CCBS/ISUP/ISS_V_15_16				



Table C.15.2: Test campaign report - CCBS - ASE part

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
CCBS/ASE/ISS_TC_V_15_1				
CCBS/ASE/ISS_TC_I_15_2				
CCBS/ASE/ISS_TC_V_15_3				
CCBS/ASE/ISS_TC_V_15_4				
CCBS/ASE/ISS_TC_I_15_5				
CCBS/ASE/ISS_TC_V_15_6_a				
CCBS/ASE/ISS_TC_V_15_6_b				
CCBS/ASE/ISS_TC_V_15_7				
CCBS/ASE/ISS_TC_I_15_8				
CCBS/ASE/ISS_TC_V_15_9				
CCBS/ASE/ISS_TC_V_15_10				
CCBS/ASE/ISS_TC_V_15_11				
CCBS/ASE/ISS_TC_V_15_12				
CCBS/ASE/ISS_TC_I_15_13				
CCBS/ASE/ISS_TC_I_15_14				
CCBS/ASE/ISS_TC_I_15_15				
CCBS/ASE/ISS_TC_I_15_16				
CCBS/ASE/ISS_TC_I_15_17				
CCBS/ASE/ISS_TC_I_15_18				
CCBS/ASE/ISS_TC_I_15_19				
CCBS/ASE/ISS_TC_I_15_20				
CCBS/ASE/ISS_TC_I_15_21				

Table C.16: Test campaign report - 3PTY

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict (P/F/I)	Observations (Reference to any observations made in clause C.7)
THREE_PTY/ISS_V_16_1				
THREE_PTY/ISS_V_16_2_a				
THREE_PTY/ISS_V_16_2_b				
THREE_PTY/ISS_V_16_3_a				
THREE_PTY/ISS_V_16_3_b				
THREE_PTY/ISS_V_16_4_a				
THREE_PTY/ISS_V_16_4_b				
THREE_PTY/ISS_V_16_5_a				
THREE_PTY/ISS_V_16_5_b				
THREE_PTY/ISS_V_16_6_a				
THREE_PTY/ISS_V_16_6_b				
THREE_PTY/ISS_V_16_7				
THREE_PTY/ISS_V_16_8				
THREE_PTY/ISS_V_16_9				
THREE_PTY/ISS_V_16_10				



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