

**Integrated Services Digital Network (ISDN);
Generic functional protocol for the support
of supplementary services;
Digital Subscriber Signalling System No. one (DSS1) protocol;
Part 6: Abstract Test Suite (ATS) and partial Protocol
Implementation eXtra Information for Testing (PIXIT)
proforma specification for the network**



Reference

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Contents

Intellectual Property Rights	5
Foreword.....	5
1 Scope	6
2 References	6
3 Definitions and abbreviations.....	7
3.1 Definitions	7
3.2 Abbreviations	7
4 Abstract Test Method (ATM).....	8
4.1 Description of ATM used.....	8
4.2 Functional protocol – separate message category	8
4.3 Point-to-point (bearer independent) connection-oriented transport mechanism for general signalling.....	9
5 Untestable test purposes	9
6 ATS conventions	9
6.1 Version of TTCN used	9
6.2 Use of ASN.1	9
6.2.1 Situations where ASN.1 is used.....	9
6.3 Conventions for variables and parameters.....	10
7 ATS to TP map.....	11
8 PCTR conformance	11
9 PIXIT conformance	11
10 ATS conformance	11
11 Configurations required in testing.....	12
Annex A (normative): Protocol Conformance Test Report (PCTR) proforma.....	13
A.1 Identification summary.....	13
A.1.1 Protocol conformance test report.....	13
A.1.2 IUT identification	13
A.1.3 Testing environment.....	14
A.1.4 Limits and reservations	14
A.1.5 Comments.....	14
A.2 IUT conformance status	14
A.3 Static conformance summary	14
A.4 Dynamic conformance summary.....	15
A.5 Static conformance review report.....	15
A.6 Test campaign report.....	16
A.7 Observations.....	18
Annex B (normative): Partial PIXIT proforma	19
B.1 Identification summary.....	19
B.2 Abstract test suite summary	19
B.3 Test laboratory.....	19
B.4 Client (of the test laboratory)	20

B.5	System Under Test (SUT)	20
B.6	Protocol information.....	21
B.6.1	Protocol identification	21
B.6.2	Parameter values	21
B.6.3	Actions Required to provoke the IUT	21
B.6.4	Options supported by the IUT	22
B.6.5	Timer values.....	22
B.7	Basic call PIXIT items	23
B.7.1	Parameter values - information element codings.....	23
Annex C (normative): Abstract Test Suite (ATS)		24
C.1	The TTCN Graphical form (TTCN.GR)	24
C.2	The TTCN Machine Processable form (TTCN.MP).....	24
Annex D (informative): Bibliography.....		25
History		26

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN), and is now submitted for the ETSI standards One-step Approval Procedure.

The present document is part 6 of a multi-part deliverable covering the Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol, as identified below:

- Part 1: "Protocol specification";
- Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";
- Part 3: "Test Suite Structure and Test Purposes (TSS&TP) specification for the user";
- Part 4: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the user";
- Part 5: "Test Suite Structure and Test Purposes (TSS&TP) specification for the network";
- Part 6: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network".**

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1 Scope

The present document specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma for the Network side of the T reference point or coincident S and T reference point (as defined in ITU-T Recommendation I.411 [1]) of implementations conforming to the stage three standard for the generic functional protocol for the support of supplementary services for the pan-European Integrated Services Digital Network (ISDN) by means of the Digital Subscriber Signalling System No. one (DSS1) protocol, EN 300 196-1 [1].

EN 300 196-5 [3] specifies the Test Suite Structure and Test Purposes (TSS&TP) related to this ATS and partial PIXIT proforma. Other parts specify the TSS&TP and the ATS and partial PIXIT proforma for the User side of the T reference point or coincident S and T reference point of implementations conforming to EN 300 196-1 [1].

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, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, subsequent revisions do apply.

- [1] ETSI EN 300 196-1 (V1.3.2): "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [2] ETSI EN 300 196-2 (V1.3.2): "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".
- [3] ETSI EN 300 196-5 (V1.2.1): "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 5: Test Suite Structure and Test Purposes (TSS&TP) specification for the network".
- [4] ETSI EN 300 403-3 (V1.4.1): "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 3: Protocol Implementation Conformance Statement (PICS) proforma specification".
- [5] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework; Part 1: General concepts".
- [6] ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework; Part 2: Abstract Test Suite specification".
- [7] ISO/IEC 9646-3: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework; Part 3: The Tree and Tabular Combined Notation (TTCN)".
- [8] ISO/IEC 9646-4: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework; Part 4: Test realization".
- [9] 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".
- [10] ITU-T Recommendation I.411 (1993): "ISDN user-network interfaces - Reference configurations".

- [11] ITU-T Recommendation X.690 (1997): "Information technology – ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)".
- [12] ITU-T Recommendation X.209 (1988): "Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1)".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

Abstract Test Suite (ATS): See ISO/IEC 9646-1 [5].

Implementation Under Test (IUT): See ISO/IEC 9646-1 [5].

Lower Tester (LT): See ISO/IEC 9646-1 [5].

Point Of Control And Observation (PCO): See ISO/IEC 9646-1 [5].

Protocol Implementation Conformance Statement (PICS): See ISO/IEC 9646-1 [5].

PICS proforma: See ISO/IEC 9646-1 [5].

Protocol Implementation Extra Information For Testing (PIXIT): See ISO/IEC 9646-1 [5].

PIXIT proforma: See ISO/IEC 9646-1 [5].

System Under Test (SUT): See ISO/IEC 9646-1 [5].

Upper Tester (UT): See ISO/IEC 9646-1 [5].

3.2 Abbreviations

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

ATM	Abstract Test Method
ATS	Abstract Test Suite
BER	Basic Encoding Rules
CM	Co-ordination Message
ExTS	Executable Test Suite
IUT	Implementation Under Test
LT	Lower Tester
MOT	Means Of Testing
MTC	Main Test Component
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
SUT	System Under Test
TP	Test Purpose
TTCN	Tree and Tabular Combined Notation
UT	Upper Tester

4 Abstract Test Method (ATM)

4.1 Description of ATM used

The requirement for testing the network IUT is to focus on the behaviour of the network IUT at the user-network interface where a T reference point or coincident S and T reference point applies. Thus the IUT is the network DSS1 protocol entity at a particular user-network interface and is not the whole network.

In practice the behaviour at a single user-network interface does not occur in isolation, but depends on the activity at other user-network interfaces. Therefore a multi-party test method is used.

The general configuration used is shown in figure 1. In this ATS the PTCs act as slaves to the MTC; all active behaviour at the PTCs is initiated by CMs sent by the MTC and all verdicts are assigned by the MTC. Not all components are used in every test case.

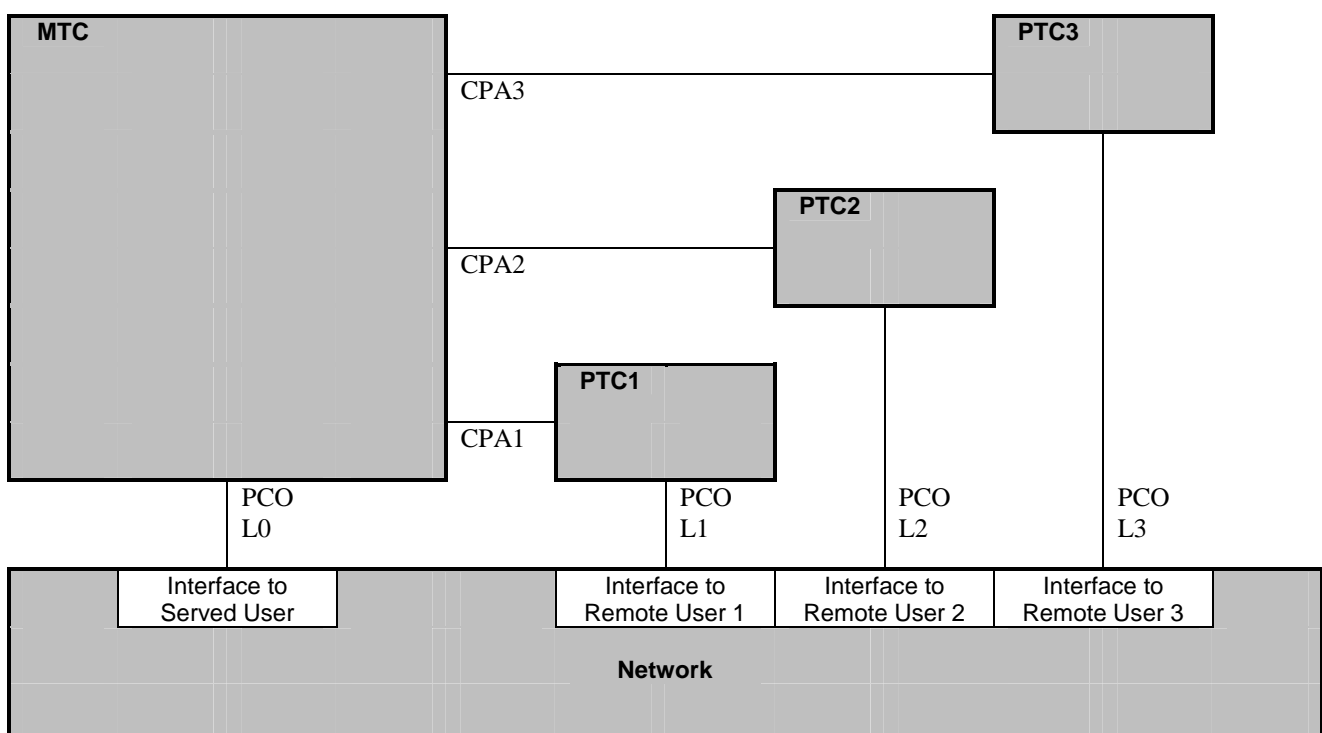


Figure 1: Multi-party test method

In general the correlation of messages between the served and remote user interfaces (which is part of the functionality of the supplementary service rather than the protocol) is not tested. If a message is expected at the MTC as a result of an action at a remote user and is not received this usually leads to an inconclusive verdict.

4.2 Functional protocol – separate message category

For these test cases the IUT (the network interface of a served user) is connected to the MTC. Depending on the test case one to three PTCs are used. The verdict depends only on the behaviour observed at the PCO between the IUT and the MTC. The PTC(s) are used only to provoke the IUT to send messages to the MTC or to handle behaviour at the remote user interface(s) as a result of activity at the IUT interface.

Only basic call functionality is required at the network interfaces associated with the PTCs.

PTC2 and PTC3 are only used in certain test cases concerning busy B-channels.

4.3 Point-to-point (bearer independent) connection-oriented transport mechanism for general signalling

For these test cases the IUT (the network interface of a served user) is connected to the MTC. Depending on the test case zero or one PTC is used. The verdict depends only on the behaviour observed at the PCO between the IUT and the MTC. The PTC is used only to provoke the IUT to send messages to the MTC or to handle behaviour at the remote user interface(s) as a result of activity at the IUT interface.

Support of the Point-to-point (bearer independent) connection-oriented transport mechanism for general signalling is required at the network interface associated with PTC1.

5 Untestable test purposes

Only clauses 6.2.2 and 6.2.3.2.3.2.3 of EN 300 196-5 [3] contain testable test purposes. All other test purposes are too generic and parameterized. These test purposes rather provide a general example for the behaviour that should be tested in the ATSS for supplementary services which use the generic functional protocol.

Some of the tests contained in clause 6.2.2 of EN 300 196-5 [3] are also untestable due to the fact that the call state in which the test should be performed is unstable. These are:

GFP_N7_01_002,	GFP_N7_02_002,	GFP_N7_03_002,	GFP_N7_04_002,	GFP_N7_05_002,
GFP_N7_06_004,	GFP_N7_06_010,	GFP_N7_06_016,	GFP_N7_07_004,	GFP_N7_07_010,
GFP_N7_07_017,	GFP_N7_07_018,	GFP_N7_07_020,	GFP_N7_07_027,	GFP_N7_08_004,
GFP_N7_08_010,	GFP_N7_08_016,	GFP_N7_09_004,	GFP_N7_09_010,	GFP_N7_09_017,
GFP_N7_09_018,	GFP_N7_09_019,	GFP_N7_09_020,	GFP_N7_09_022,	GFP_N7_09_026,
GFP_N7_09_032,	GFP_N7_09_038,	GFP_N7_10_004,	GFP_N7_10_004,	GFP_N7_10_004.

6 ATS conventions

6.1 Version of TTCN used

The version of TTCN used is that defined in ISO/IEC 9646-3 [7].

6.2 Use of ASN.1

6.2.1 Situations where ASN.1 is used

ASN.1 has been used for two major reasons. First, types defined in ASN.1 can model problems that "pure" TTCN cannot. For instance, data structures modelling ordered or unordered sequences of data are preferably defined in ASN.1. Second, ASN.1 provides a better restriction mechanism for type definitions by using sub-type definitions.

For ASN.1 used in this ATS, two variations of encoding rules are used. One is the commonly known Basic Encoding Rules (BER) as specified in ITU-T Recommendation X.209 [12] and ITU-T Recommendation X.690 [11]. In the second case the encoding is according to ISDN, i.e. the ASN.1 data types are a representation of structures contained within the ISDN specification (basic call, Generic functional protocol or individual supplementary service). For example, if octets of an information element are specified in ASN.1 as a SEQUENCE then this should be encoded in an Executable Test Suite (ExTS) as any other ISDN information element specified using tabular TTCN. This ISDN encoding variation is the default encoding rule for this ATS. This means that all ASN.1 constraint tables are encoded using ISDN (non-BER) encoding unless stated otherwise. BER encoding should never be applied to an ASN.1 constraint where BER encoding has not been specified.

For BER encoding, an indication is given in the comments field of the table header. For this ATS such indications appear in the ASN.1 type definitions tables only. In the table header comment field, the notation "ASN1_Encoding: BER" is used. BER coding according to ITU-T Recommendation X.690 [11] shall be used for any type with this notation.

Note that within BER, there are a number of variations for the encoding of lengths of fields. According to EN 300 196-1 [1], an IUT should be able to interpret all length forms within BER for received PDUs. When sending PDUs containing BER encoding, EN 300 196-1 [1] gives guidelines but makes no restrictions on the length forms within BER which an IUT may apply.

Table 1: ASN.1 type constraint declaration showing use of encoding variation

ASN.1 Type Constraint Declaration	
Constraint Name :	Beg3PTYinv
ASN.1 Type :	Component
Derivation Path :	
Comments :	ASN1_Encoding: BER Receive component: Begin3PTY invoke component
Description	
begin3PTY_Components	
begin3PTY_InvokeComp	
{ invokeID ? ,	
operation_value localValue 4 }	
Detailed comments :	

6.3 Conventions for variables and parameters

Table 2

MTCA		
call reference	CREF1	(to PTC1)
B channel (basic)	bch_num1	
channel nr (primary)	CH_NUM1	
call reference	CREF2	(to PTC2)
B channel (basic)	bch_num2	
channel nr (primary)	CH_NUM2	
call reference	CREF3	(to PTC3)
B channel (basic)	bch_num3	
channel nr (primary)	CH_NUM3	
PCO L0	IPN0, LIPN0	
PTC1		
call reference	P1CREF	
B channel (basic)	P1_bch_num	
channel nr (primary)	P1_CH_NUM	
PCO L1	IPN1, LIPN1	
PTC2		
call reference	P2CREF	
B channel (basic)	P2_bch_num	
channel nr (primary)	P2_CH_NUM	
PCO L2	IPN2, LIPN2	
PTC3		
call reference	P3CREF	
B channel (basic)	P3_bch_num	
channel nr (primary)	P3_CH_NUM	
PCO L3	IPN3, LIPN3	

7 ATS to TP map

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

8 PCTR conformance

A test laboratory, when requested by a client to produce a PCTR, is required, as specified in ISO/IEC 9646-5 [9], to produce a PCTR conformant with the PCTR template given in annex B of ISO/IEC 9646-5 [9].

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.

9 PIXIT conformance

A test realizer, producing an executable test suite for the ATS specification contained in annex C, is required, as specified in ISO/IEC 9646-4 [8], to produce an augmented partial PIXIT proforma conformant with this partial PIXIT proforma specification.

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

A test laboratory, offering testing for the ATS specification contained in annex C, is required, as specified in ISO/IEC 9646-5 [9], 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.

10 ATS conformance

The test realizer, producing MOT and ExTS for this ATS specification, shall comply with the requirements of ISO/IEC 9646-4 [8]. In particular, these concern the realization of an 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 [9].

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

11 Configurations required in testing

Some test cases require the IUT to be configured in special ways. These test cases and the special configurations are indicated in table 3 below. Except where indicated otherwise these special configurations should not be used for other test cases.

Table 3: Special configurations

Configuration	PIXIT reference	Test Suite Parameter	Test cases
Hold not permitted (as a responding entity)	2.3	PX_HOLD_NOT	GFP_N7_07_24 - 26 GFP_N7_07_28 - 29
Retrieve not permitted (as a responding entity)	2.4	PX_RET_NOT	GFP_N7_09_35 - 37 GFP_N7_09_39 - 40

NOTE: Certain items in the GFP PICS (EN 300 196-2 [2]) assume that the ability of an implementation to act as a initiating or as a responding entity is a global characteristic. When this assumption is incorrect and the IUT can act as an initiating entity for the HOLD/RETRIEVE procedures and a responding entity for some other part of GFP, some test cases in the GFP_N07_03, GFP_N07_04, GFP_N07_07 and GFP_N07_09 groups can be selected that are not applicable to the IUT. Users of this ATS are therefore recommended to check that TPs in these groups are only selected if the behaviour being tested is actually supported by the IUT.

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

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

A.1 Identification summary

A.1.1 Protocol conformance test report

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

A.1.2 IUT identification

Name:	
Version:	
Protocol specification:	EN 300 196-1
PICS:	
Previous PCTRs (if any):	

A.1.3 Testing environment

PIXIT reference number:	
ATS specification:	EN 300 196-6
Abstract test method:	Multi-party test method (see ISO/IEC 9646-2)
Means of testing identification:	
Dates of testing:	
Conformance log reference(s):	
Retention date for log reference(s):	

A.1.4 Limits and reservations

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

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.....

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A.1.5 Comments

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

.....

.....

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.....

A.2 IUT conformance status

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

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

A.3 Static conformance summary

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

Strike the appropriate words in this sentence.

A.4 Dynamic conformance summary

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

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

Summary of the results of groups of tests:

.....

.....

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A.5 Static conformance review report

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

.....

.....

.....

.....

.....

A.6 Test campaign report

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
GFP_N7_01_001				
GFP_N7_01_003				
GFP_N7_01_004				
GFP_N7_02_001				
GFP_N7_02_003				
GFP_N7_02_004				
GFP_N7_03_001				
GFP_N7_03_003				
GFP_N7_03_004				
GFP_N7_04_001				
GFP_N7_04_003				
GFP_N7_04_004				
GFP_N7_05_001				
GFP_N7_05_003				
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GFP_N7_07_015				
GFP_N7_07_016				
GFP_N7_07_019				
GFP_N7_07_021				
GFP_N7_07_022				
GFP_N7_07_023				
GFP_N7_07_024				
GFP_N7_07_025				
GFP_N7_07_026				
GFP_N7_07_028				
GFP_N7_07_029				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
GFP_N7_08_001				
GFP_N7_08_002				
GFP_N7_08_003				
GFP_N7_08_005				
GFP_N7_08_006				
GFP_N7_08_007				
GFP_N7_08_008				
GFP_N7_08_009				
GFP_N7_08_011				
GFP_N7_08_012				
GFP_N7_08_013				
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GFP_N7_09_024				
GFP_N7_09_025				
GFP_N7_09_027				
GFP_N7_09_028				
GFP_N7_09_029				
GFP_N7_09_030				
GFP_N7_09_031				
GFP_N7_09_033				
GFP_N7_09_034				
GFP_N7_09_035				
GFP_N7_09_036				
GFP_N7_09_037				
GFP_N7_09_039				
GFP_N7_09_040				
GFP_N7_10_001				
GFP_N7_10_002				
GFP_N7_10_003				
GFP_N7_10_005				
GFP_N7_10_006				

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.

B.1 Identification summary

PIXIT number:

.....

Test laboratory name:

.....

Date of issue:

.....

Issued to:

.....

B.2 Abstract test suite summary

Protocol specification: EN 300 196-1

ATS specification: EN 300 196-6

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

B.3 Test laboratory

Test laboratory identification:

.....

Accreditation status of the test service:

.....

Accreditation reference:

.....

Test laboratory manager:

.....

Test laboratory contact:

.....

Means of testing:

.....

Test laboratory instructions for completion:

.....

B.4 Client (of the test laboratory)

Client identification:

.....

Client test manager:

.....

Client contact:

.....

Test facilities required:

.....

B.5 System Under Test (SUT)

Name:

.....

Version:

.....

SCS reference:

.....

Machine configuration:

.....

Operating system identification:

.....

IUT identification:

.....

PICS (all layers):

.....

.....

Limitations of the SUT:

.....

Environmental conditions:

.....

B.6 Protocol information

B.6.1 Protocol identification

Specification reference: EN 300 196-1

Protocol version:

PICS reference:

NOTE: The PICS reference should reference a completed PICS which is conformant with the PICS proforma contained in EN 300 196-2.

B.6.2 Parameter values

Table B.1: Parameter values

Item	Question	Supported? (Y/N)	Allowed values	Value
1.1	Does the IUT support Basic Access?		N/A	N/A
1.2	Does the IUT support Basic Access point-to-point?		N/A	N/A
1.3	What length of Call Reference value is used?	N/A	1, 2	

B.6.3 Actions Required to provoke the IUT

Table B.2: Actions Required to provoke the IUT

Item	Action: What actions, if possible, have to be taken to provoke the IUT to ...	Supported? (Y/N)	Stimulus (action taken)
2.1	send a HOLD message?		
2.2	send a RETRIEVE message?		
2.3	make the Hold function not permitted?		
2.4	make the Retrieve function not permitted?		
2.5	make no channels available when one call is Held and a Retrieve action is being attempted for it?		

B.6.4 Options supported by the IUT

Table B.3: Options supported by the IUT

Item	Action: Does the IUT ...	Supported? (Y/N)	Stimulus (action taken)
3.1	remain stable in the Hold Indication auxiliary state?		
3.2	remain stable in the Retrieve Indication auxiliary state?		

B.6.5 Timer values

Table B.4: Timer values

Item	Timer values: Give a value for the timer that is used to ...	Supported (Y/N)	Value (in seconds)
4.1	wait for the test operator to perform an implicit send action or to wait for a PTC to react (TWAIT) (see note)	N/A	
4.2	wait for the IUT to respond to a stimulus sent by the tester (TAC) (see note)	N/A	
4.3	control that the IUT does not respond to a stimulus sent by the tester (TNOAC) (see note)	N/A	
4.4	wait for CONNECT ACKNOWLEDGE (T313)		
NOTE:	The IUT provider may fill in a value range rather than a fixed value for the test management timers. During test execution the test laboratory will choose specific values for the timers dependant on the means of testing used. These specific values may even be beyond the range given by the IUT provider, if this is necessary for achieving satisfactory test results.		

B.7 Basic call PIXIT items

B.7.1 Parameter values - information element codings

Table B.5: Codings of information elements

Item	Information element: provide, if possible, ...	Supported? (Y/N)	Value
N1.1	a coding of a Bearer Capability information element, which the IUT is compatible with, for the purpose of accepting received SETUP messages and which may be used in SETUP messages to be transmitted		
N1.2	a coding of a High layer compatibility information element, which the IUT is compatible with, for the purpose of accepting received SETUP messages and which may be used in SETUP messages to be transmitted		
N1.3	a coding of a Low layer compatibility information element, which the IUT is compatible with, for the purpose of accepting received SETUP messages and which may be used in SETUP messages to be transmitted		
N1.4	a Called party number information element, which the IUT is compatible with, for ...		
N1.4.1	served user access		
N1.4.2	first remote user access		
N1.4.3	second remote user access		
N1.4.4	third remote user access		
N1.5	preferred channel number to be used for the purpose of accepting received SETUP messages, for ... (see note 1)		
N1.5.1	single call at served user side		
N1.5.2	second call at served user side		
N1.5.3	first call at remote user side		
N1.5.4	second call at remote user side		
N1.5.5	third call at remote user side		
NOTE 1: Items N1.5.1 to N1.5.5 are applicable for primary rate access only.			
NOTE 2: As this is a general table used for all supplementary services, all items N1.4.1 to N1.4.4, and N1.5.1 to N1.5.5 (if primary rate access is supported), are not always required, but should be supplied if possible.			

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

This ATS has been produced using the Tree and Tabular Combined Notation (TTCN) according to ISO/IEC 9646-3 [7].

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

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

The TTCN.GR representation of this ATS is contained in an Adobe Portable Document Format™ file (GFP_N13.PDF contained in archive en_30019606v010201o0.zip) which accompanies the present document.

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

The TTCN.MP representation corresponding to this ATS is contained in an ASCII file (GFP_N13.MP contained in archive en_30019606v010201o0.zip) which accompanies the present document.

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

Annex D (informative): Bibliography

- ETSI EN 300 403-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification [ITU-T Recommendation Q.931 (1993), modified]".
- ETSI EN 301 813-1: "Integrated Services Digital Network (ISDN) and Broadband Integrated Services Digital Network (B-ISDN); Generic Addressing and Transport (GAT) protocol; Part 1: Protocol specification [ITU-T Recommendation Q.860 (2000), modified]".

History

Document history		
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