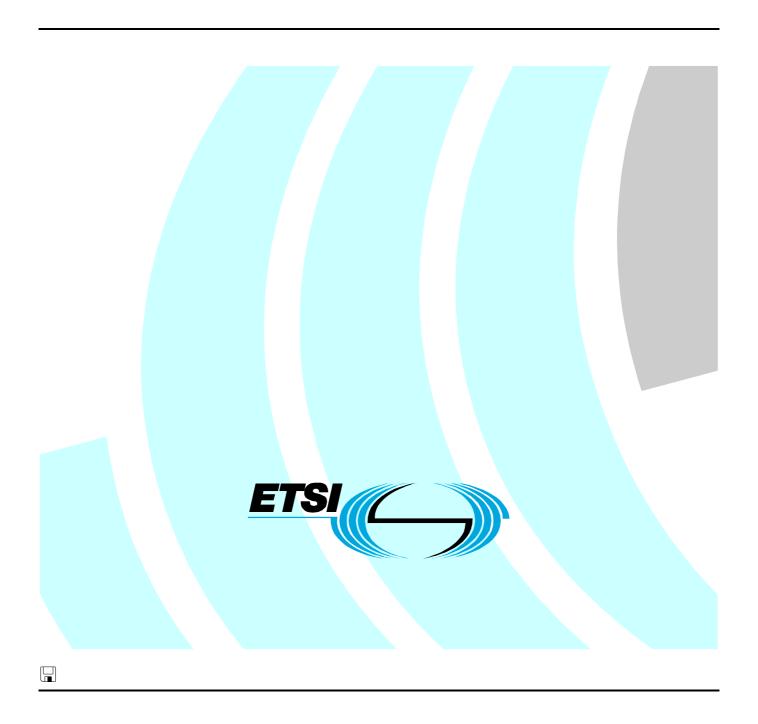# ETSI EN 300 196-4 V1.2.1 (2001-11)

European Standard (Telecommunications series)

Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 4: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the user

ETSI

Reference

REN/SPAN-130135-4

Keywords

ATS, DSS1, ISDN, PIXIT, supplementary service,
testing, user

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Contents

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN).

The present document is part 4 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".

National transposition dates	
Date of adoption of this EN:	9 November 2001
Date of latest announcement of this EN (doa):	28 February 2002
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 August 2002
Date of withdrawal of any conflicting National Standard (dow):	31 August 2002

This second edition contains additional test cases for the point-to-point transport mechanism (connection-oriented) for general signalling.

1   Scope

The present document specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma for the User side of the T reference point or coincident S and T reference point (as defined in ITU-T Recommendation I.411 [10]) 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 300 196-3 [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 Network 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 and/or edition number or version number) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies.

[1]   ETSI 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 300 196-3 (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 3: Test Suite Structure and Test Purposes (TSS&TP) specification for the user".

[4]   Void.

[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
ExTS	Executable Test Suite
IUT	Implementation Under Test
LT	Lower Tester
MOT	Means Of Testing
NCICS	Networked Call Independent Connection-oriented Signalling
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
SUT	System Under Test
TCP	Test Co-ordination Procedures
TP	Test Purpose
TTCN	Tree and Tabular Combined Notation
UT	Upper Tester

4   Abstract Test Method (ATM)

The remote test method is applied for the GFP user ATS. A Point of Control and Observation (PCO) resides at the service access point between layers 2 and 3. This PCO is named "L" (for Lower). The L PCO is used to control and observe the behaviour of the Implementation Under Test (IUT) and test case verdicts are assigned depending on the behaviour observed at this PCO.

A second "informal" PCO, called "O" (for Operator) is used to specify control but not observation above the IUT; events at this PCO are never used to generate test case verdicts. Messages sent by the tester at this PCO explicitly indicate to the operator actions which are to be performed on the SUT. This is regarded as a preferred alternative to the use of the implicit send event.

Figure 1: Remote test method with PCO O for test co-ordination

5   Untestable test purposes

Only clauses 6.2.2 and 6.2.3.2.3.2.5 of EN 300 196-3 [3] contains 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 300 196-3 [3] are also untestable due to the fact that the call state in which the test should be performed is unstable. These are:

GFP_U7_01_003, GFP_U7_02_003, GFP_U7_03_003, GFP_U7_04_003, GFP_U7_05_003, GFP_U7_07_017, GFP_U7_07_022, GFP_U7_09_017, GFP_U7_09_021. GFP_U7_09_021

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 three 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. Third, it is necessary to use ASN.1 to reproduce the type definitions for remote operation components as specified in the base standards.

6.2.2 Specification of encoding rules

There is a variation in the encoding rules applied to ASN.1 types and constraints specified in this ATS and therefore a mechanism is needed to differentiate the encoding rules. However the mechanism specified in ISO/IEC 9646-3 [7] does not facilitate definition of the encoding rules as needed for this ATS. A solution is therefore used which is broadly in the spirit of ISO/IEC 9646-3 [7] in which comment fields have been used as a means of encoding rules.

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 :
```

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 2 below. Except where indicated otherwise these special configurations should not be used for other test cases.

Table 2: Special configurations

Configuration	PIXIT reference	Test Suite Parameter	Test cases
Hold not permitted (as a responding entity)	2.3	PX_HOLD_NOT	GFP_U7_07_24 - 29
Retrieve not permitted (as a responding entity)	2.4	PX_RET_NOT	GFP_U7_09_35 - 40
NCICS connections rejected (see note)	2.8	PX_REJECT_NCICS	GFP_U8_09_009
NOTE: If rejection of a NCICS connection can be provoked by use of a Called party number not matching the IUT no special configuration is necessary for this test case.			

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_U07_03, GFP_U07_04, GFP_U07_07 and GFP_U07_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

# 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 300 196-4
Abstract test method:	Remote 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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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.

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A.6   Test campaign report

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
GFP_U7_01_001				
GFP_U7_01_002				
GFP_U7_02_001				
GFP_U7_02_002				
GFP_U7_03_001				
GFP_U7_03_002				
GFP_U7_04_001				
GFP_U7_04_002				
GFP_U7_05_001				
GFP_U7_05_002				
GFP_U7_06_001				
GFP_U7_06_002				
GFP_U7_06_003				
GFP_U7_06_004				
GFP_U7_06_005				
GFP_U7_06_006				
GFP_U7_06_007				
GFP_U7_06_008				
GFP_U7_06_009				
GFP_U7_06_010				
GFP_U7_06_011				
GFP_U7_06_012				
GFP_U7_06_013				
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GFP_U7_06_015				
GFP_U7_06_016				
GFP_U7_06_017				
GFP_U7_06_018				
GFP_U7_07_001				
GFP_U7_07_002				
GFP_U7_07_003				
GFP_U7_07_004				
GFP_U7_07_005				
GFP_U7_07_006				
GFP_U7_07_007				
GFP_U7_07_008				
GFP_U7_07_009				
GFP_U7_07_010				
GFP_U7_07_011				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
GFP_U7_07_012				
GFP_U7_07_013				
GFP_U7_07_014				
GFP_U7_07_015				
GFP_U7_07_016				
GFP_U7_07_018				
GFP_U7_07_019				
GFP_U7_07_020				
GFP_U7_07_021				
GFP_U7_07_023				
GFP_U7_07_024				
GFP_U7_07_025				
GFP_U7_07_026				
GFP_U7_07_027				
GFP_U7_07_028				
GFP_U7_07_029				
GFP_U7_08_001				
GFP_U7_08_002				
GFP_U7_08_003				
GFP_U7_08_004				
GFP_U7_08_005				
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GFP_U7_09_025				
GFP_U7_09_026				
GFP_U7_09_027				
GFP_U7_09_028				
GFP_U7_09_029				
GFP_U7_09_030				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
GFP_U7_09_031				
GFP_U7_09_032				
GFP_U7_09_033				
GFP_U7_09_034				
GFP_U7_09_035				
GFP_U7_09_036				
GFP_U7_09_037				
GFP_U7_09_038				
GFP_U7_09_039				
GFP_U7_09_040				
GFP_U7_10_001				
GFP_U7_10_002				
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GFP_U8_09_010				
GFP_U8_09_011				
GFP_U8_09_012				
GFP_U8_09_013				
GFP_U8_09_014				
GFP_U8_09_015				
GFP_U8_09_016				

A.7   Observations

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

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Annex B (normative):
Partial PIXIT proforma

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

B.1   Identification summary

PIXIT number:

....

Test laboratory name:

....

Date of issue:

....

Issued to:

....

B.2   Abstract test suite summary

Protocol specification: EN 300 196-1

ATS specification: EN 300 196-4

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

B.3   Test laboratory

Test laboratory identification:

....

Accreditation status of the test service:

....

Accreditation reference:

....

Test laboratory manager:

....

Test laboratory contact:

....

Means of testing:

....

Test laboratory instructions for completion:

....

B.4   Client (of the test laboratory)

Client identification:

....

Client test manager:

....

Client contact:

....

Test facilities required:

....

B.5   System Under Test (SUT)

Name:

....

Version:

....

SCS reference:

....

Machine configuration:

....

Operating system identification:

....

IUT identification:

....

PICS (all layers):

....

....

Limitations of the SUT:

....

Environmental conditions:

....

B.6 Protocol information

NOTE: For the purposes of the present document Networked Call Independent Connection-oriented Signalling (NCICS) can be considered as synonymous with the point-to-point transport mechanism (connection-oriented) for general signalling.

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	What length of Call Reference value is used?		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 (as a responding entity)		
2.4	make the Retrieve function not permitted (as a responding entity)		
2.5	initiate an NCICS connection		
2.6	accept a NCICS connection (see note 1)		
2.7	clear an NCICS connection		
2.8	reject an NCICS connection (see note 2)		
NOTE 1: It is assumed that all implementations which support NCICS are capable of accepting an NCICS connection. The action required to cause the implementation to accept such a connection if this is not automatic should be indicated.			
NOTE 2: If rejection of an NCICS connection can be provoked by using a Called party number different from that of the IUT then this is preferred to any method that requires special configuration. The called party number to be used should be entered in item 5.5.			

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 Hold Indication auxiliary state?		
3.2	remain stable in Retrieve Indication auxiliary state?		
3.3	remain stable in Retrieve Request auxiliary state?		
3.4	support two calls at the same time?		
3.5	support two calls plus one more on Hold at the same time?		
3.6	remain stable in the Outgoing Call Proceeding state (U09) for an NCICS connection.		

B.6.5 Timer values

Table B.4: Timer values

Item	Timer values: Give a value for the timer that is used to ...	Value (in seconds)
4.1	wait for the test operator to perform an implicit send action (TWAIT)	
4.2	wait for the IUT to respond to a stimulus sent by the tester (TAC)	
4.3	control that the IUT does not respond to a stimulus sent by the tester (TNOAC)	
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.6.6 Information element codings

Table B.5: Information element codings

Item	Parameter values: Give a ...	Value
5.1	a coding of a Bearer capability information element, which the IUT is compatible with, for the purpose of accepting incoming calls	
5.2	a coding of a High layer compatibility information element, which the IUT is compatible with, for the purpose of accepting incoming calls	
5.3	a coding of a Low layer compatibility information element, which the IUT is compatible with, for the purpose of accepting incoming calls	
5.4	a coding of a Called party number information element, which the IUT is compatible with	
5.5	a coding of the Called party number information element, to be used in the SETUP message for a NCICS connection to be rejected by the IUT	
5.6	a value for the preferred channel number (used in Channel identification information element) to be used for incoming calls (Primary rate access only)	

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_U13.PDF contained in archive en_30019604v010201p0.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_U13.MP contained in archive en_30019604v010201p0.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]".

- 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".

History

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