

**Broadband Integrated Services Digital Network (B-ISDN);
Digital Subscriber Signalling System No. two (DSS2) protocol;
B-ISDN user-network interface layer 3 specification
for basic call/bearer control;
Part 6: Abstract Test Suite (ATS) and partial Protocol
Implementation eXtra Information for Testing (PIXIT)
proforma specification for the network**



Reference

REN/SPAN-130254-6

KeywordsATS, BC, B-ISDN, broadband, DSS2, layer 3,
network, PIXIT, UNI**ETSI**

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at <http://www.etsi.org/tb/status/>

If you find errors in the present document, send your comment to:
editor@etsi.fr

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2001.
All rights reserved.

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.....	8
4.1 Description of ATM used	8
4.2 Conventions for test components and PCOs	8
5 Untestable test purposes.....	9
6 ATS to TP map.....	10
7 PCTR conformance	10
8 PIXIT conformance	10
9 ATS conformance.....	10
Annex A (normative): Protocol Conformance Test Report (PCTR) proforma	11
A.1 Identification summary	11
A.1.1 Protocol conformance test report.....	11
A.1.2 IUT identification.....	11
A.1.3 Testing environment.....	11
A.1.4 Limits and reservations.....	12
A.1.5 Comments.....	12
A.2 IUT Conformance status	12
A.3 Static conformance summary	12
A.4 Dynamic conformance summary.....	13
A.5 Static conformance review report.....	13
A.6 Test campaign report	14
A.7 Observations.....	22
Annex B (normative): Partial PIXIT proforma.....	23
B.1 Identification summary	23
B.2 Abstract test suite summary	23
B.3 Test laboratory.....	23
B.4 Client (of the test laboratory)	25
B.5 SUT.....	25
B.6 Protocol information	26
B.6.1 Protocol identification	26
B.6.2 Configuration to be tested.....	26
B.6.3 Stimuli for the IUT	27
B.6.4 Test management timers	27
B.6.5 Parameter Values	28

Annex C (normative):	Abstract Test Suite (ATS)	30
C.1	The TTCN Graphical form (TTCN.GR).....	30
C.2	The TTCN Machine Processable form (TTCN.MP)	30
History	31

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://www.etsi.org/ipr>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

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 Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; B-ISDN user-network interface layer 3 specification for basic call/bearer control, as identified below:

- Part 1: "Protocol specification [ITU-T Recommendation Q.2931 (1995), modified]";
- Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";
- Part 3: "Test Suite Structure and Test Purposes (TSS&TP) 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) for the network";
- Part 6: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network".**

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

1 Scope

The present document specifies the network Abstract Test Suite (ATS) for the T_B reference point or coincident S_B and T_B reference point (as defined in ITU-T Recommendation I.413 [9]) of implementations conforming to the standards for the signalling user-network layer 3 specification for basic call/bearer control of the Digital Subscriber Signalling System No. two (DSS2) protocol for the pan-European Broadband Integrated Services Digital Network (B-ISDN), EN 300 443-1 [1].

EN 300 443-5 [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_B reference point or coincident S_B and T_B reference point of implementations conforming to EN 300 443-1 [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 300 443-1 (2.0.1): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; B-ISDN user-network interface layer 3 specification for basic call/bearer control; Part 1: Protocol specification [ITU-T Recommendation Q.2931 (1995), modified]".
- [2] ETSI EN 300 443-2 (V1.3.1): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; B-ISDN user-network interface layer 3 specification for basic call/bearer control; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".
- [3] ETSI EN 300 443-5 (V1.3.1): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; B-ISDN user-network interface layer 3 specification for basic call/bearer control; Part 5: Test Suite Structure and Test Purposes (TSS&TP) specification for the network".
- [4] ISO/IEC 9646-1 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [5] ISO/IEC 9646-2 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".
- [6] ISO/IEC 9646-3 (1998): "Information technology; Open Systems Interconnection; Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".
- [7] ISO/IEC 9646-4 (1994): "Information technology; Open Systems Interconnection; Conformance testing methodology and framework - Part 4: Test realization".
- [8] ISO/IEC 9646-5 (1994): "Information technology; Open Systems Interconnection; Conformance testing methodology and framework - Part 5: Requirements on test laboratories and clients for the conformance assessment process".
- [9] ITU-T Recommendation I.413 (1993): "B-ISDN user-network interface".

3 Definitions and abbreviations

3.1 Definitions

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

Implementation Under Test (IUT): see ISO/IEC 9646-1 [4]

System Under Test (SUT): see ISO/IEC 9646-1 [4]

Abstract Test Suite (ATS): see ISO/IEC 9646-1 [4]

Protocol Implementation Conformance Statement (PICS): see ISO/IEC 9646-1 [4]

PICS proforma: see ISO/IEC 9646-1 [4]

Protocol Implementation eXtra Information for Testing (PIXIT): see ISO/IEC 9646-1 [4]

PIXIT proforma: see ISO/IEC 9646-1 [4]

Lower Tester (LT): see ISO/IEC 9646-1 [4]

Upper Tester (UT): see ISO/IEC 9646-1 [4]

Point of Control and Observation (PCO): see ISO/IEC 9646-1 [4]

3.2 Abbreviations

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

ATM	Abstract Test Method
ATS	Abstract Test Suite
B-ISDN	Broadband Integrated Services Digital Network
CM	Co-ordination Message
CP	Co-ordination Point
DSS2	Digital Subscriber Signalling System No. two
ExTS	Executable Test Suite
ISDN	Integrated Services Digital Network
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
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

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_B reference point or coincident S_B and T_B reference point applies. Thus the IUT is the network DSS2 protocol entity at a particular user-network interface and is not the whole network.

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

An ATS based on a multi-party test method is considered to be more useful in that it is closer to how a real test suite would be constructed. Such a test method specifies behaviour at multiple network interfaces. One very important limitation here is that tests are focussed on one particular interface. Thus the test system is made up one Main Test Component (MTC) and one or more Parallel Test Components (PTC), see figure 1.

4.2 Conventions for test components and PCOs

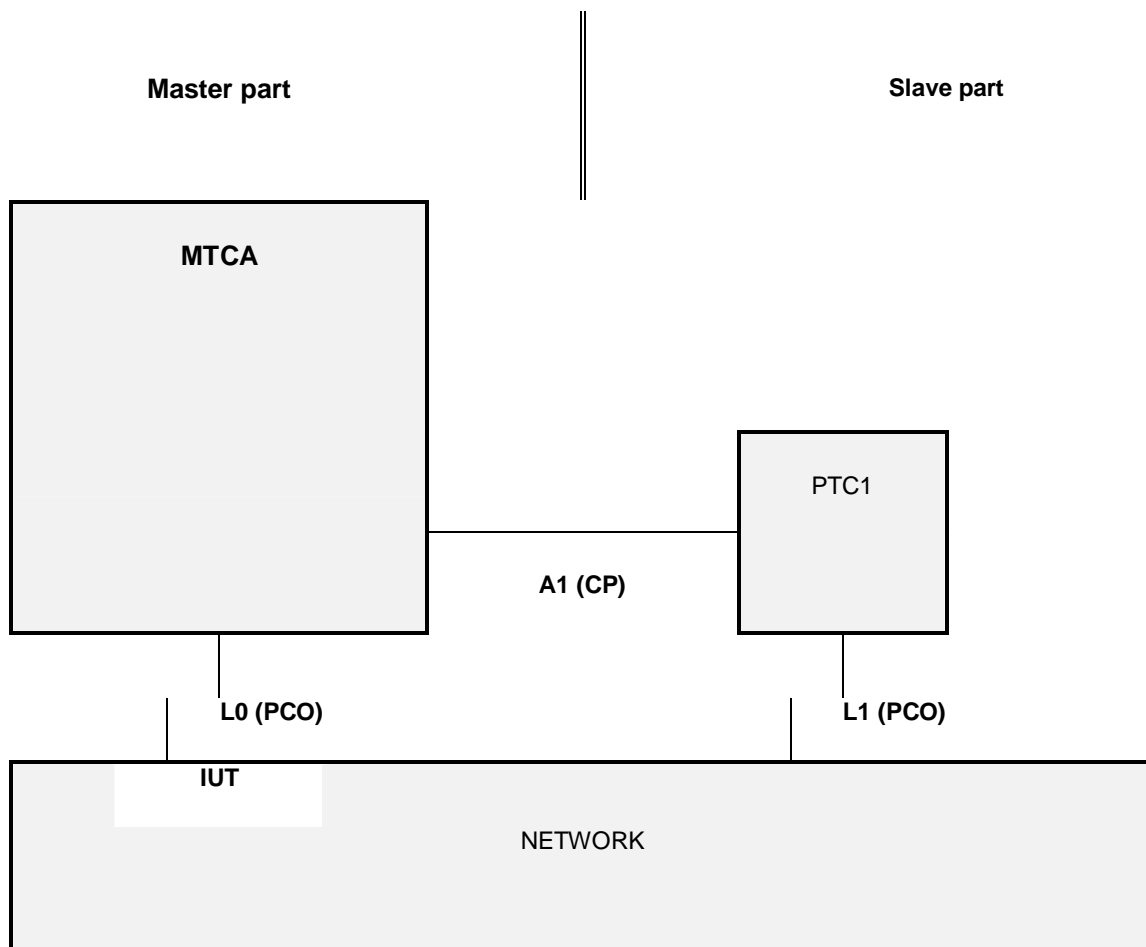


Figure 1: Multi-party test method

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

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

The MTC MTCA has two functions in this configuration. Firstly, it has the MTC function of controlling the one or more PTCs. Thus it is responsible for starting the PTCs and afterwards co-ordinates activities by exchanging Co-ordination Messages (CM) with the PTCs. Secondly it is responsible for the behaviour of the Lower Tester (LT) at PCO L0.

A combination of the remote and multi-party test methods is applied. As can be seen from figure 1, several PCOs are used. All PCOs reside at the service access points between layers 2 and 3.

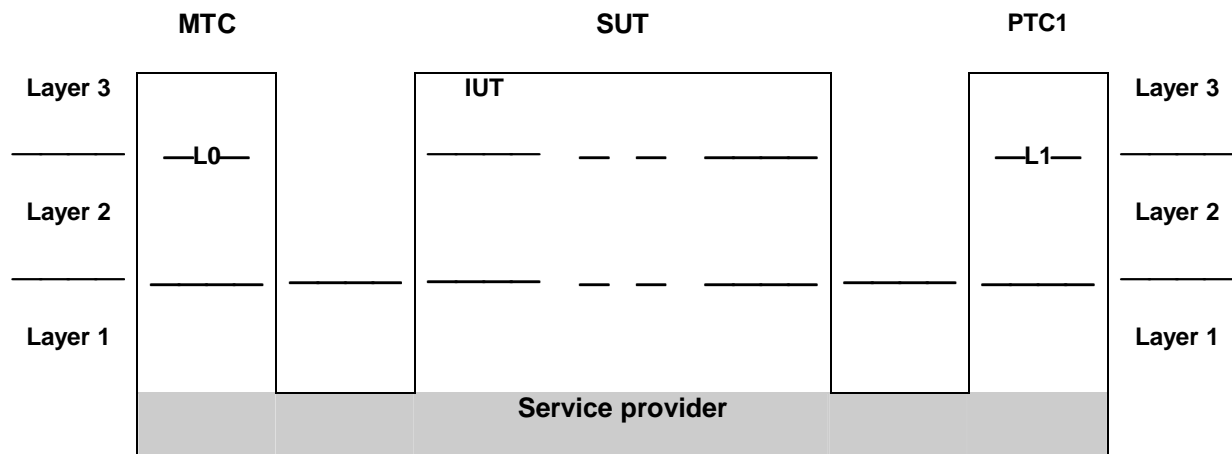


Figure 2: Combination of the remote and multi-party test methods

The MTC PCO is named "L0" ("L" for Lower). The L0 PCO is used to control and observe the behaviour of the IUT and test case verdicts are assigned depending on the behaviour observed at this PCO. The PTC PTC1 uses PCOs L1. These PCO is used to control and, in a limited way, observe the behaviour of the network equipment at interface other than the one under test. No verdicts are assigned at this PCO.

As stated in a previous clause, the non-receipt of network generated messages at L0, which are stimulated by events at the L1, will result in INCONCLUSIVE rather than FAIL verdicts being assigned.

In test cases which verify that the IUT rejects invalid or unacceptable SETUP messages and in the majority of the test cases for the restart procedures, no PTC is activated at all, as these procedures are considered local to the access between IUT and MTC.

5 Untestable test purposes

There are no untestable test purposes associated with this ATS.

6 ATS to TP map

The identifiers used for the TPs (see EN 300 443-5 [3]) are reused as test case names. Thus there is a straightforward one-to-one mapping.

7 PCTR conformance

A test laboratory, when requested by a client to produce a PCTR, is required, as specified in ISO/IEC 9646-5 [8], to produce a PCTR conformant with the PCTR template given in annex B of ISO/IEC 9646-5 [8].

Furthermore, a test laboratory, offering testing for the ATS specification contained in annex C, when requested by a client to produce a PCTR, is required to produce a PCTR conformant with the PCTR proforma contained in annex A of the present document.

A PCTR which conforms to this PCTR proforma specification shall preserve the content and ordering of the clauses contained in annex A. Clause A.6 of the PCTR may contain additional columns. If included, these shall be placed to the right of the existing columns. Text in italics may be retained by the test laboratory.

8 PIXIT conformance

A test realizer, producing an executable test suite for the Abstract Test Suite (ATS) specification contained in annex C, is required, as specified in ISO/IEC 9646-4 [7], to produce an augmented partial PIXIT proforma conformant with this partial PIXIT proforma specification.

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

A test laboratory, offering testing for the ATS specification contained in annex C, is required, as specified in ISO/IEC 9646-5 [8], to further augment the augmented partial PIXIT proforma to produce a PIXIT proforma conformant with this partial PIXIT proforma specification.

A PIXIT proforma which conforms to this partial PIXIT proforma specification shall, as a minimum, have contents which are technically equivalent to annex B. The PIXIT proforma may contain additional questions that need to be answered in order to prepare the test laboratory for a particular IUT.

9 ATS conformance

The test realizer producing a Means Of Testing (MOT) and Executable Test Suite (ExTS) for this Abstract Test Suite (ATS) specification shall comply with the requirements of ISO/IEC 9646-4 [7]. 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 [8].

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

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

Table A.1

PCTR number:	
PCTR Date:	
Corresponding SCTR number:	
Corresponding SCTR date:	
Test Laboratory identification:	
Test Laboratory Manager:	
Signature:	

A.1.2 IUT identification

Table A.2

Name:	
Version:	
Protocol specification:	EN 300 443-1
PICS:	
Previous PCTRs (if any):	

A.1.3 Testing environment

Table A.3

PIXIT Reference number:	
ATS Specification:	EN 300 443-6
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.

.....

.....

.....

.....

.....

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.

.....

.....

.....

.....

A.2 IUT Conformance status

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

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

A.3 Static conformance summary

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

Strike the appropriate words in this sentence.

A.4 Dynamic conformance summary

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

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

Summary of the results of groups of tests:

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

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

Table A.4

ATS Reference	Selected ? (Y/N)	Run ? (Y/N)	Verdict	Observations
L3BN_01_01				
L3BN_02_01				
L3BN_02_02				
L3BN_02_03				
L3BN_02_04				
L3BN_03_01				
L3BN_03_02				
L3BN_03_03				
L3BN_03_04				
L3BN_03_05				
L3BN_03_06				
L3BN_03_07				
L3BN_03_08				
L3BN_04_01				
L3BN_04_02				
L3BN_04_03				
L3BN_04_04				
L3BN_04_05				
L3BN_04_06				
L3BN_04_07				
L3BN_04_08				
L3BN_05_01_04				
L3BN_06_01				
L3BN_06_02				
L3BN_06_03				
L3BN_07_01				
L3BN_08_01				
L3BN_08_02				
L3BN_08_03				
L3BN_09_01				
L3BN_09_02				
L3BN_09_03				
L3BN_09_04				
L3BN_09_05				
L3BN_09_06				
L3BN_09_07				
L3BN_09_08				
L3BN_10_01				
L3BN_10_02				
L3BN_10_03				
L3BN_11_01				
L3BN_11_02				
L3BN_11_03				
L3BN_11_04				
L3BN_13_01				
L3BN_14_01				
L3BN_14_02				
L3BN_14_03				
L3BN_14_04				
L3BN_14_05				
L3BN_14_06				
L3BN_14_07				
L3BN_15_01				
L3BN_15_02				
L3BN_15_03				
L3BN_15_04				
L3BN_15_05				

ATS Reference	Selected ? (Y/N)	Run ? (Y/N)	Verdict	Observations
L3BN_16_01				
L3BN_16_02				
L3BN_16_03				
L3BN_17_01				
L3BN_18_01				
L3BN_18_02				
L3BN_18_03				
L3BN_18_04				
L3BN_18_05				
L3BN_18_06				
L3BN_19_01				
L3BN_19_02				
L3BN_19_03				
L3BN_19_04				
L3BN_19_05				
L3BN_19_06				
L3BN_19_07				
L3BN_19_08				
L3BN_19_09				
L3BN_19_10				
L3BN_20_01				
L3BN_20_02				
L3BN_21_01				
L3BN_21_02				
L3BN_21_03				
L3BN_21_04				
L3BN_22_01				
L3BN_22_02				
L3BN_22_03				
L3BN_22_04				
L3BN_22_05				
L3BN_22_06				
L3BN_22_07				
L3BN_22_08				
L3BN_22_09				
L3BN_22_10				
L3BN_22_11				
L3BN_22_12				
L3BN_22_13				
L3BN_22_14				
L3BN_22_15				
L3BN_22_16				
L3BN_22_17				
L3BN_22_18				
L3BN_22_19				
L3BN_22_20				
L3BN_23_01				
L3BN_23_02				
L3BN_23_03				
L3BN_23_04				
L3BN_23_05				
L3BN_23_06				
L3BN_24_01				
L3BN_24_02				
L3BN_24_03				
L3BN_24_04				
L3BN_24_05				
L3BN_24_06				
L3BN_24_07				
L3BN_24_08				
L3BN_24_09				
L3BN_24_10				

ATS Reference	Selected ? (Y/N)	Run ? (Y/N)	Verdict	Observations
L3BN_24_11				
L3BN_24_12				
L3BN_24_13				
L3BN_24_14				
L3BN_24_15				
L3BN_24_16				
L3BN_24_17				
L3BN_24_18				
L3BN_24_19				
L3BN_24_20				
L3BN_24_21				
L3BN_24_22				
L3BN_24_23				
L3BN_24_24				
L3BN_24_25				
L3BN_24_26				
L3BN_24_27				
L3BN_24_28				
L3BN_24_29				
L3BN_24_30				
L3BN_24_31				
L3BN_24_32				
L3BN_24_33				
L3BN_24_34				
L3BN_24_35				
L3BN_24_36				
L3BN_24_37				
L3BN_24_38				
L3BN_24_39				
L3BN_24_40				
L3BN_24_41				
L3BN_24_42				
L3BN_24_43				
L3BN_24_44				
L3BN_24_45				
L3BN_25_01				
L3BN_25_02				
L3BN_25_03				
L3BN_25_04				
L3BN_25_05				
L3BN_25_06				
L3BN_25_07				
L3BN_25_08				
L3BN_25_09				
L3BN_25_10				
L3BN_25_11				
L3BN_25_12				
L3BN_25_13				
L3BN_25_14				
L3BN_25_15				
L3BN_25_16				
L3BN_25_17				
L3BN_25_18				
L3BN_25_19				
L3BN_25_20				
L3BN_25_21				
L3BN_25_22				
L3BN_25_23				
L3BN_25_24				
L3BN_25_25				
L3BN_26_01				
L3BN_26_02				

ATS Reference	Selected ? (Y/N)	Run ? (Y/N)	Verdict	Observations
L3BN_26_03				
L3BN_26_04				
L3BN_26_05				
L3BN_26_06				
L3BN_26_07				
L3BN_26_08				
L3BN_26_09				
L3BN_26_10				
L3BN_26_11				
L3BN_26_12				
L3BN_26_13				
L3BN_26_14				
L3BN_26_15				
L3BN_26_16				
L3BN_26_17				
L3BN_26_18				
L3BN_26_19				
L3BN_26_20				
L3BN_26_21				
L3BN_26_22				
L3BN_26_23				
L3BN_27_01				
L3BN_27_02				
L3BN_27_03				
L3BN_27_04				
L3BN_27_05				
L3BN_27_06				
L3BN_27_07				
L3BN_27_08				
L3BN_27_09				
L3BN_27_10				
L3BN_27_11				
L3BN_27_12				
L3BN_27_13				
L3BN_27_14				
L3BN_27_15				
L3BN_27_16				
L3BN_27_17				
L3BN_27_18				
L3BN_27_19				
L3BN_27_20				
L3BN_27_21				
L3BN_27_22				
L3BN_27_23				
L3BN_27_24				
L3BN_27_25				
L3BN_27_26				
L3BN_27_27				
L3BN_27_28				
L3BN_27_29				
L3BN_27_30				
L3BN_27_31				
L3BN_27_32				
L3BN_27_33				
L3BN_28_01				
L3BN_28_02				
L3BN_28_03				
L3BN_28_04				
L3BN_28_05				
L3BN_28_06				
L3BN_28_07				
L3BN_28_08				

ATS Reference	Selected ? (Y/N)	Run ? (Y/N)	Verdict	Observations
L3BN_28_09				
L3BN_28_10				
L3BN_28_11				
L3BN_28_12				
L3BN_28_13				
L3BN_28_14				
L3BN_28_15				
L3BN_28_16				
L3BN_28_17				
L3BN_28_18				
L3BN_28_19				
L3BN_28_20				
L3BN_28_21				
L3BN_28_22				
L3BN_28_23				
L3BN_28_24				
L3BN_28_25				
L3BN_28_26				
L3BN_28_27				
L3BN_28_28				
L3BN_28_29				
L3BN_28_30				
L3BN_28_31				
L3BN_28_32				
L3BN_29_01				
L3BN_29_02				
L3BN_29_03				
L3BN_29_04				
L3BN_29_05				
L3BN_29_06				
L3BN_29_07				
L3BN_29_08				
L3BN_29_09				
L3BN_29_10				
L3BN_29_11				
L3BN_29_12				
L3BN_29_13				
L3BN_29_14				
L3BN_29_15				
L3BN_29_16				
L3BN_29_17				
L3BN_29_18				
L3BN_29_19				
L3BN_29_20				
L3BN_29_21				
L3BN_29_22				
L3BN_29_23				
L3BN_29_24				
L3BN_29_25				
L3BN_29_26				
L3BN_29_27				
L3BN_29_28				
L3BN_29_29				
L3BN_29_30				
L3BN_29_31				
L3BN_29_32				
L3BN_30_01				
L3BN_30_02				
L3BN_30_03				
L3BN_30_04				
L3BN_30_05				
L3BN_30_06				

ATS Reference	Selected ? (Y/N)	Run ? (Y/N)	Verdict	Observations
L3BN_30_07				
L3BN_30_08				
L3BN_30_09				
L3BN_30_10				
L3BN_30_11				
L3BN_30_12				
L3BN_30_13				
L3BN_30_14				
L3BN_30_15				
L3BN_30_16				
L3BN_30_17				
L3BN_30_18				
L3BN_30_19				
L3BN_30_20				
L3BN_30_21				
L3BN_30_22				
L3BN_30_23				
L3BN_30_24				
L3BN_30_25				
L3BN_30_26				
L3BN_30_27				
L3BN_30_28				
L3BN_30_29				
L3BN_30_30				
L3BN_30_31				
L3BN_30_32				
L3BN_30_33				
L3BN_30_34				
L3BN_30_35				
L3BN_30_36				
L3BN_30_37				
L3BN_30_38				
L3BN_31_01				
L3BN_31_02				
L3BN_31_03				
L3BN_31_04				
L3BN_31_05				
L3BN_31_06				
L3BN_31_07				
L3BN_31_08				
L3BN_31_09				
L3BN_31_10				
L3BN_31_11				
L3BN_31_12				
L3BN_31_13				
L3BN_31_14				
L3BN_31_15				
L3BN_31_16				
L3BN_31_17				
L3BN_31_18				
L3BN_31_19				
L3BN_31_20				
L3BN_31_21				
L3BN_31_22				
L3BN_31_23				
L3BN_31_24				
L3BN_31_25				
L3BN_31_26				
L3BN_31_27				
L3BN_31_28				
L3BN_31_29				
L3BN_31_30				

ATS Reference	Selected ? (Y/N)	Run ? (Y/N)	Verdict	Observations
L3BN_31_31				
L3BN_31_32				
L3BN_31_33				
L3BN_31_34				
L3BN_31_35				
L3BN_31_36				
L3BN_31_37				
L3BN_31_38				
L3BN_31_39				
L3BN_31_40				
L3BN_31_41				
L3BN_31_42				
L3BN_31_43				
L3BN_31_44				
L3BN_31_45				
L3BN_31_46				
L3BN_32_01				
L3BN_32_02				
L3BN_32_03				
L3BN_32_04				
L3BN_32_05				
L3BN_32_06				
L3BN_32_07				
L3BN_32_08				
L3BN_32_09				
L3BN_32_10				
L3BN_32_11				
L3BN_32_12				
L3BN_32_13				
L3BN_32_14				
L3BN_32_15				
L3BN_32_16				
L3BN_32_17				
L3BN_32_18				
L3BN_32_19				
L3BN_32_20				
L3BN_32_21				
L3BN_32_22				
L3BN_32_23				
L3BN_32_24				
L3BN_32_25				
L3BN_32_26				
L3BN_32_27				
L3BN_32_28				
L3BN_32_29				
L3BN_32_30				
L3BN_32_31				
L3BN_33_01				
L3BN_33_02				
L3BN_33_03				
L3BN_33_04				
L3BN_33_05				
L3BN_33_06				
L3BN_33_07				
L3BN_33_08				
L3BN_33_09				
L3BN_33_10				
L3BN_33_11				
L3BN_33_12				
L3BN_33_13				
L3BN_33_14				
L3BN_33_15				

ATS Reference	Selected ? (Y/N)	Run ? (Y/N)	Verdict	Observations
L3BN_33_16				
L3BN_33_17				
L3BN_33_18				
L3BN_33_19				
L3BN_33_20				
L3BN_33_21				
L3BN_33_22				
L3BN_33_23				
L3BN_33_24				
L3BN_33_25				
L3BN_33_26				
L3BN_33_27				
L3BN_33_28				
L3BN_33_29				
L3BN_33_30				
L3BN_33_31				
L3BN_33_32				
L3BN_34_01				
L3BN_34_02				
L3BN_34_03				
L3BN_34_04				
L3BN_34_05				
L3BN_34_06				
L3BN_34_07				
L3BN_34_08				
L3BN_34_09				
L3BN_34_10				
L3BN_34_11				
L3BN_34_12				
L3BN_34_13				
L3BN_34_14				
L3BN_34_15				
L3BN_34_16				
L3BN_34_17				
L3BN_34_18				
L3BN_34_19				
L3BN_34_20				
L3BN_34_21				
L3BN_34_22				
L3BN_34_23				
L3BN_34_24				
L3BN_34_25				
L3BN_34_26				
L3BN_34_27				
L3BN_35_01				
L3BN_35_02				
L3BN_35_03				
L3BN_35_04				
L3BN_35_05				
L3BN_35_06				
L3BN_35_07				
L3BN_35_08				
L3BN_35_09				
L3BN_35_10				
L3BN_35_11				
L3BN_35_12				
L3BN_35_13				
L3BN_35_14				
L3BN_35_15				
L3BN_35_16				
L3BN_35_17				
L3BN_35_18				

ATS Reference	Selected ? (Y/N)	Run ? (Y/N)	Verdict	Observations
L3BN_35_19				
L3BN_35_20				
L3BN_35_21				
L3BN_35_22				
L3BN_35_23				
L3BN_35_24				
L3BN_35_25				
L3BN_35_26				
L3BN_36_01				
L3BN_36_02				
L3BN_36_03				
L3BN_36_04				
L3BN_36_05				
L3BN_36_06				
L3BN_36_07				
L3BN_36_08				
L3BN_37_01				
L3BN_37_02				
L3BN_38_01				
L3BN_38_02				
L3BN_38_03				
L3BN_39_01				
L3BN_39_02				
L3BN_39_03				
L3BN_39_04				

A.7 Observations

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

.....

.....

.....

.....

.....

.....

.....

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 300 443-1

ATS Specification: EN 300 443-6

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 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 300 443-1

Protocol Version:

PICS Reference:

NOTE: The PICS Reference should reference a completed PICS which is conformant with the PICS proforma contained in EN 300 443-2.

B.6.2 Configuration to be tested

Table B.1: Configuration to be tested

Item	Configuration The access to be tested ...	Supported Y/N
1.1	releases the layer 2 connection after entering the Null call state N0?	
Associated signalling at the originating side (only, if PICS MCn 1.1 is supported)		
1.2	can be configured so that a specific VCI (given in PIXIT 4.22) in the VPC carrying the signalling VC is not available for switched connections?	
1.3	can be configured so that all VCIs in the VPC carrying the signalling VC are not available for switched connections?	
Non-associated signalling at the originating side		
1.4	can be configured so that a specific VCI (given in PIXIT 4.23) in a specific VPC (given in PIXIT 4.19) is not available for switched connections?	
1.5	can be configured so that a specific VPC (given in PIXIT 4.24) is not available for switched connections?	
1.6	can be configured so that no VCI is available?	
Non-associated signalling at the destination side		
1.7	sends SETUP messages with the coding "exclusive VPCI, any VCI" in the preferred/exclusive field of the Connection identifier information element?	
1.8	sends SETUP messages with the coding "exclusive VPCI, exclusive VCI" in the preferred/exclusive field of the Connection identifier information element?	
Restart procedures		
1.9	sends a RESTART message on the second expiry of timer T308 (no answer to RELEASE message)?	
1.10	sends a RESTART message with the coding "indicated virtual channel" in the class field of the Restart indicator information element on the second expiry of timer T308?	
1.11	can be stimulated to send RESTART messages in incoming (answer YES) or outgoing calls (answer NO). This PIXIT item affects the preamble to all tests in the test groups 21 and 35?	

B.6.3 Stimuli for the IUT

Table B.2: Actions required to stimulate the IUT

Item	Action What actions, if possible, have to be taken to ...	Supported Y/N	Stimulus (action taken)
2.1	cause the IUT to send a NOTIFY message towards the MTC (actions to be performed at the PTC)?		
Provision of 64 kbit/s circuit mode-services (only, if PICS MCn 9 is supported)			
2.2	initiate a call originating in the N-ISDN towards the MTC?		
2.3	initiate a call originating in the N-ISDN that carries high layer compatibility information towards the MTC?		
2.4	initiate a call originating in the N-ISDN that carries low layer compatibility information towards the MTC?		

B.6.4 Test management timers

Table B.3: Timer values

Item	Timer Give a value for the timer that is used ...	Value (in seconds)
3.1	as user side value for T313 (default value 4 seconds)?	
3.2	to wait for the IUT to respond to a stimulus sent by the tester (TAC)?	
3.3	to control that the IUT does not respond to a stimulus sent by the tester (TNOAC)?	
3.4	to wait for the test operator to perform an implicit send action or to wait for a PTC to react (TWAIT)?	
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.6.5 Parameter Values

Table B.4: Parameter values

Item	Parameter values Give ...	Value
ATM adaption layer parameters		
4.1	a coding of an AAL parameters information element, which the IUT is compatible with, for the purpose of accepting outgoing calls.	
Broadband bearer capability		
4.2	a coding of a Broadband bearer capability information element, which the IUT is compatible with, for the purpose of accepting outgoing calls.	
4.3	a coding of a Broadband bearer capability information element for the provision of 64 kbit/s circuit mode services (BCOB-A, susceptible to clipping), which the IUT is compatible with, for the purpose of accepting outgoing calls.	
4.4	a coding of a Broadband bearer capability information element indicating a service that is not authorized, for the purpose of rejecting outgoing calls. (see note)	
4.5	a coding of a Broadband bearer capability information element indicating a service that is not available, for the purpose of rejecting outgoing calls (see note).	
Narrowband bearer capability		
4.6	a coding of a Narrowband bearer capability information element, which the IUT is compatible with, for the purpose of accepting outgoing calls (only, if PICS MCn 9 is supported).	
Broadband low layer compatibility		
4.7	a coding of a Broadband Low layer compatibility information element, which the IUT is compatible with, for the purpose of accepting outgoing calls.	
Called party number		
4.8	a coding of the Type of number and the Addressing/Numbering plan identification fields of the Called party number information elements to be sent to the IUT.	
4.9	a coding of the number digits of the access related to the PTC1.	
4.10	a coding of the number digits of a subscriber at the access related to the MTC.	
4.11	a coding of an invalid set of number digits for the purpose of rejecting outgoing calls (see note).	
ATM traffic descriptor		
4.12	a coding of an ATM traffic descriptor information element, which the IUT is compatible with, for the purpose of accepting outgoing calls.	
4.13	a coding of an ATM traffic descriptor information element indicating a peak cell rate that can not be not provided, for the purpose of rejecting outgoing calls (see note).	
Quality of service		
4.14.1	a coding of a Quality of service information element, which the IUT is compatible with, for the purpose of accepting outgoing calls.	
4.14.2	a coding of a Quality of service information element indicating a QOS class, that is not supported, for the purpose of rejecting outgoing calls (see note).	
4.14.3	a coding of a Quality of service information element indicating a QOS class, that can not be provided in combination with the other traffic parameters(given in PIXIT item 4.2 and 4.12), for the purpose of rejecting outgoing calls (see note).	
End-to-end transit delay		
4.15.1.1	a coding of the cumulative end-to-end transit delay (octet 6 of the End-to-end transit delay information element), which the IUT is compatible with, for the purpose of accepting outgoing calls.	
4.15.1.2	a coding of the maximum end-to-end transit delay (octet 8 of the End-to-end transit delay information element), which the IUT is compatible with, for the purpose of accepting outgoing calls.	

Item	Parameter values Give ...	Value
4.15.2.1	a coding of the cumulative end-to-end transit delay (octet 6 of the End-to-end transit delay information element), that can not be provided in combination with the other traffic parameters(given in PIXIT item 4.2, 4.12 and 4.14.1), for the purpose of rejecting outgoing calls (see note).	
4.15.2.2	a coding of the maximum end-to-end transit delay (octet 8 of the End-to-end transit delay information element), that can not be provided in combination with the other traffic parameters(given in PIXIT item 4.2, 4.12 and 4.14.1), for the purpose of rejecting outgoing calls (see note.)	
Transit network selection (only, if PICS MCn 11 is supported)		
4.16	a coding of a Transit network selection information element indicating a transit network that is not recognized by the IUT, for the purpose of rejecting outgoing calls (see note).	
4.17	a coding of a Transit network selection information element indicating a transit network selection in an incorrect format, for the purpose of rejecting outgoing calls (see note).	
4.18	a coding of a Transit network selection information element indicating a valid transit network selection to a route that has only insufficient bandwidth available, for the purpose of rejecting outgoing calls (see note).	
Notification indicator		
4.19	a coding of a Notification indicator information element to be sent to the IUT.	
4.20	an invalid coding of a Notification indicator information element to be sent to the IUT for the purpose of testing the IUT's reaction on the receipt of an information element with content error (see note).	
Connection identifier		
4.21	a value for the preferred VPCI.	
4.22	a value for the preferred VCI.	
4.23	the value for the VPCI carrying the signalling VCI.	
4.24	the value for the signalling VCI.	
4.25	a value for a VCI in the VPCI carrying the signalling VCI that has been made unavailable (associated signalling, only if PIXIT 1.2 is supported).	
4.26	a value for a VCI in the VPCI given by PIXIT item 4.19 that has been made unavailable (non-associated signalling, only if PIXIT 1.4 is supported).	
4.27	a value for a VPCI that has been made unavailable (associated signalling, only if PIXIT 1.5 is supported).	
4.28	a value for a VPCI that is not recognized by the IUT when received in a RESTART messages (see note).	
Error values		
4.29	a value for an unrecognized message type.	
4.30	a value for an unrecognized information element identifier.	
4.31	a value for an unrecognized protocol discriminator.	
NOTE: These fields need only be completed, if the specified coding exists.		

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 [6].

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 (4td015c.PDF contained in archive en_30044306v010301o0.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 (4td015b.MP contained in archive en_30044306v010301o0.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.

History

Document history		
V1.1.3	December 1999	Publication
V1.2.1	October 2000	Publication
V1.3.1	February 2001	One-step Approval Procedure OAP 20010615: 2001-02-14 to 2001-06-15