

**Broadband Integrated Services Digital Network (B-ISDN);
Network integration testing;
End-to-end testing;
Part 2: Implementation Conformance (ICS) proforma,
Implementation eXtra Information for Testing (IXIT) proforma
and Abstract Test Suite (ATS)**



Reference

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Keywords

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Contents

Intellectual Property Rights	5
Foreword.....	5
Introduction.....	5
1 Scope.....	6
2 References.....	6
3 Definitions and abbreviations.....	9
3.1 Definitions.....	9
3.2 Abbreviations.....	10
4 Abstract Test Method (ATM).....	11
4.1 B-ISDN configurations.....	13
5 Untestable test purposes.....	14
6 ATS to TP map.....	14
7 PCTR conformance	14
8 PIXIT conformance	14
9 ATS Conformance.....	14
Annex A (normative): Implementation Conformance Statement (ICS) proforma for Broadband End-to-end tests.....	15
A.1 Guidance for completing the ICS proforma.....	15
A.1.1 Purposes and structure.....	15
A.1.2 Abbreviations and conventions	15
A.1.3 Instructions for completing the ICS proforma.....	16
A.2 Identification of the implementation.....	17
A.2.1 Date of the statement.....	17
A.2.2 Implementation Under Test (IUT) identification	17
A.2.3 ICS contact person	17
A.2.4 Identification of the document	18
A.2.5 Basic B-ISDN capabilities.....	19
A.2.6 B-ISDN Supplementary services.....	22
A.2.7 Interworking with N-ISDN.....	24
A.2.8 B-ISDN Capability Set 2.1	26
Annex B (normative): Implementation Extra Information (IXIT) proforma for Broadband End-to-end tests	28
B.1 Instructions for completing the IXIT proforma.....	28
B.2 Identification summary	28
B.3 Abstract test suite summary	28
B.4 IXIT items	29
Annex C (normative): Implementation Conformance Test Report (ICTR) proforma for Broadband End-to-end tests.....	32
C.1 Identification summary	32
C.1.1 Implementation conformance test report	32
C.1.2 IUT identification.....	32
C.1.3 Testing environment.....	33
C.1.4 Limits and reservation	33

C.1.5	Comments.....	34
C.2	IUT Conformance status	34
C.3	Static conformance summary	34
C.4	Dynamic conformance summary.....	34
C.5	Static conformance review report.....	35
C.6	Test campaign report	35
C.7	Observations.....	41
Annex D (informative): Abstract Test Suite (ATS).....		42
D.1	The TTCN Graphical form (TTCN.GR).....	42
D.2	The TTCN Machine Processable form (TTCN.MP)	42
	History	43

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Foreword

This ETSI Guide (EG) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN).

The present document is part 2 of a multi-part deliverable covering the Network integration testing; End-to-end testing, as identified below:

Part 1: "Test Suite Structure and Test Purposes (TSS&TP) specification";

Part 2: "Implementation Conformance Statement (ICS) proforma, Implementation eXtra Information for Testing (IXIT) proforma and Abstract Test Suite (ATS)".

Introduction

The present document contains User-Network-Interface (UNI) to User-Network-Interface test specification for Network Integration Testing (NIT) required to verify the overall compatibility of B-ISDN and N-ISDN over national/international B-ISUP between networks.

1 Scope

The present document provides a set of tests for testing B-ISDN compatibility and its interworking with N-ISDN. Included are as well basic as supplementary services, checking basically the end-to-end characteristics. The following test subjects are covered:

- support of basic services (CS1 and partly CS2.1 functionalities): normal call/connection including bearer services, HLI/LLI-transport and LLI-negotiation, unsuccessful call setup, normal call release, deterministic bit rate, statistical bit rate and point-to-multipoint. The support of bandwidth negotiation, bandwidth modification and available bit rate will be covered in PIR 2.2;
- support of supplementary services: CLIP/R, COLP/R, SUB, UUS, CUG;
- support of interworking between B-ISDN and N-ISDN: basic call including normal connection, unsuccessful call setup, normal call release;
- support of interworking of supplementary services: CLIP/R, COLP/R, SUB, UUS, CUG.

The present document represents the output from the EURESCOM Project P613 Task2.

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 (all parts): "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".
- [2] ETSI ETS 300 403-1 (1995): "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]".
- [3] ETSI ETS 300 771-1 (1997): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; B-ISDN user-network interface layer 3 specification for point-to-multipoint call/bearer control; Part 1: Protocol specification [ITU-T Recommendation Q.2971 (1995), modified]".
- [4] ETSI ETS 300 685 (1997): "Broadband Integrated Services Digital Network (B-ISDN); Usage of cause and location in Digital Subscriber Signalling System No. two (DSS2) and Signalling System No.7 B-ISDN User Part (B-ISUP) [ITU-T Recommendation Q.2610 (1995), modified]".
- [5] ETSI EN 201 018: "Integrated Services Digital Network (ISDN); Application of the Bearer Capability (BC), High Layer Compatibility (HLC) and Low Layer Compatibility (LLC) information elements by terminals supporting ISDN services".
- [6] ETSI ETS 300 092-1 (1994): "Integrated Services Digital Network (ISDN); Calling Line Identification Presentation (CLIP) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [7] ETSI ETS 300 093-1 (1992): "Integrated Services Digital Network (ISDN); Calling Line Identification Restriction (CLIR) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

- [8] ETSI ETS 300 097-1 (1994): "Integrated Services Digital Network (ISDN); Connected Line Identification Presentation (COLP) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [9] ETSI ETS 300 098-1 (1992): "Integrated Services Digital Network (ISDN); Connected Line Identification Restriction (COLR) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [10] ETSI ETS 300 061-1 (1991): "Integrated Services Digital Network (ISDN); Subaddressing (SUB) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [11] ETSI ETS 300 286-1 (1996): "Integrated Services Digital Network (ISDN); User-to-User Signalling (UUS) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [12] ETSI ETS 300 138-1 (1996): "Integrated Services Digital Network (ISDN); Closed User Group (CUG) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [13] ITU-T Recommendation Q.2660: "Interworking between signalling system No. 7 broadband ISDN User Part (B-ISUP) and narrow-band ISDN User Part (N-ISUP)".
- [14] ETSI ETS 300 663-1 (1996): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Calling Line Identification Presentation (CLIP) supplementary service; Part 1: Protocol specification [ITU-T Recommendation Q.2951, clause 3 (1995), modified]".
- [15] ETSI ETS 300 664-1 (1996): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Calling Line Identification Restriction (CLIR) supplementary service; Part 1: Protocol specification [ITU-T Recommendation Q.2951, clause 4 (1995), modified]".
- [16] ETSI ETS 300 665-1 (1996): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Connected Line Identification Presentation (COLP) supplementary service; Part 1: Protocol specification [ITU-T Recommendation Q.2951, clause 5 (1995), modified]".
- [17] ETSI ETS 300 666-1 (1996): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Connected Line Identification Restriction (COLR) supplementary service; Part 1: Protocol specification [ITU-T Recommendation Q.2951, clause 6 (1995), modified]".
- [18] ETSI ETS 300 667-1 (1996): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Subaddressing (SUB) supplementary service; Part 1: Protocol specification [ITU-T Recommendation Q.2951, clause 8 (1995), modified]".
- [19] ETSI ETS 300 668-1 (1996): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; User-to-User Signalling (UUS) supplementary service; Part 1: Protocol specification [ITU-T Recommendation Q.2957, clause 1 (1995), modified]".
- [20] ETSI ETS 300 770-1 (1998): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Closed User Group (CUG) supplementary service; Part 1: Protocol specification [ITU-T Recommendation Q.2955.1 (1996), modified]".
- [21] ETSI EN 301 068-1 (V1.2.4): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Connection characteristics; ATM transfer capability and traffic parameter indication; Part 1: Protocol specification [ITU-T Recommendations Q.2961.1 (1995), Q.2961.2 (1997), Q.2961.3 (1997), Q.2961.4 (1997), modified]".

- [22] ETSI EN 301 067-1 (V1.1.3): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Connection characteristics; Negotiation during call/connection establishment phase; Part 1: Protocol specification [ITU-T Recommendation Q.2962 (1996), modified]".
- [23] ATM Forum: User-Network Interface (UNI) Specification Version 3.1 (9-1994).
- [24] ISO/IEC 9646-1 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [25] ISO/IEC 9646-2 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".
- [26] ISO/IEC 9646-4 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 4: Test realization".
- [27] 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".
- [28] ISO/IEC 9646-3 (1992): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".
- [29] ISO/IEC 9646-7 (1995): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".
- [30] ITU-T Recommendation Q.922: "ISDN data link layer specification for frame mode bearer services".
- [31] ITU-T Recommendation I.432: "B-ISDN User-Network Interface - Physical layer specification".
- [32] ITU-T Recommendation I.361: "B-ISDN ATM layer specification".
- [33] ITU-T Recommendation I.363: "B-ISDN ATM Adaptation Layer (AAL) specification".
- [34] ITU-T Recommendation Q.2110: "B-ISDN ATM adaptation layer - Service specific connection oriented protocol (SSCOP)".
- [35] ITU-T Recommendation Q.2761: "Functional description of the B-ISDN user part (B-ISUP) of signalling system No.7".
- [36] ITU-T Recommendation Q.2764: "Signalling System No. 7 B-ISDN User Part (B-ISUP) - Basic call procedures".
- [37] ITU-T Recommendation Q.2721.1: "B-ISDN user part - Overview of the B-ISDN Network Node Interface Signalling Capability Set 2, Step 1".
- [38] ITU-T Recommendation Q.2726: "B-ISDN user part".
- [39] ITU-T Recommendation Q.2730: "Signalling system No.7 B-ISDN user part (B-ISUP) - Supplementary services".
- [40] ITU-T Recommendation Q.2735: "Stage 3 description for community of interest supplementary services for B-ISDN using SS No. 7: Closed User Group (CUG)".
- [41] ITU-T Recommendation Q.955: "Stage 3 description for community of interest supplementary services using DSS 1".
- [42] ITU-T Recommendation Q.850: "Usage of cause and location in the Digital Subscriber Signalling System No. 1 and the Signalling System No. 7 ISDN User Part".
- [43] ETSI EN 301 276-1: "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Connection characteristics; Modification procedures for sustainable cell rate parameters; Part 1: Protocol specification [ITU-T Recommendation Q.2963.2 (1997), modified]".

- [44] ITU-T Recommendation Q.2762: "General functions of messages and signals of the B-ISDN user part (B-ISUP) of signalling system No. 7".
- [45] ITU-T Recommendation Q.2763: "Broadband integrated services digital network (B-ISDN) - Signalling System No. 7 B-ISDN User Part (B-ISUP) - Formats and codes".
- [46] ITU-T Recommendation Q.2722.1: "B-ISDN User Part - Network Node Interface Specification for point-to-multipoint call/connection control".
- [47] ITU-T Recommendation Q.2723.1: "B-ISDN User Part - Support of additional traffic parameters for Sustainable Cell Rate and Quality of Service".
- [48] ITU-T Recommendation Q.2724.1: "B-ISDN User Part - Look-ahead without state change for the Network Node Interface".
- [49] ITU-T Recommendation Q.2725.1: "B-ISDN User Part - Support of negotiation during connection setup".
- [50] ETSI ETS 300 664-2 (1996): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Calling Line Identification Restriction (CLIR) supplementary service; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".
- [51] ITU-T Recommendation X.25: "Interface between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) for terminals operating in the packet mode and connected to public data networks by dedicated circuit".
- [52] ETSI ETS 300 663-2: "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Calling Line Identification Presentation (CLIP) supplementary service; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".

3 Definitions and abbreviations

3.1 Definitions

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

- terms defined in the B-ISDN/ISDN reference specifications [1] to [23];
- terms defined in ISO/IEC 9646-1 [24] and in ISO/IEC 9646-2 [25].

In particular, the following terms defined in ISO/IEC 9646-1 [24] apply:

- **Abstract Test Case;**
- **PICS proforma;**
- **Test Purpose.**

3.2 Abbreviations

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

AAL	ATM Adaption Layer
ABR	Available Bit Rate
ATC	ATM Transfer capability
ATM	Asynchronous Transfer Mode
ATS	Abstract Test Suite
BTC	Broadband transfer Capability
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
COLP	Connected Line Identification Presentation
COLR	Connected Line Identification Restriction
CS1	Capability Set 1
CS2.1	Capability Set 2.1
CUG	Closed User Group
DBR	Deterministic Bit Rate
DDI	Direct Dialling In
DSS1	Digital Subscriber Signalling System No. One
DSS2	Digital Subscriber Signalling System No. 2
HLC	High Layer Compatibility
HLI	High Layer Information
ICS	Implementation Conformance Statement
ISDN	Integrated Services Digital Network
ISUP	ISDN User Part
IUT	Implementation Under Test
IWU	Interworking Unit
IXIT	Implementation eXtra Information for Testing
LLC	Low Layer Compatibility
LLI	Low Layer Information
MOT	Means of Testing
MSN	Multiple Subscriber Number
NIT	Network Integration Testing
OSI	Open Systems Interconnection
PCO	Point of Control and Observation
PDU	Protocol Data Unit
PNO	Public Network Operator
SBR	Statistical Bit Rate
SUB	Subaddressing
SUT	System Under Test
TSS&TP	Test Suite Structure & Test Purposes
TTCN	Tree and Tabular Combined Notation
UUS	User-to-User Signalling

4 Abstract Test Method (ATM)

The remote test method is applied for the user ATS. The Point of Control and Observation (PCO) resides at the service access point between layers 2 and 3. This PCO is named "L0" (for Lower). The L0 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.

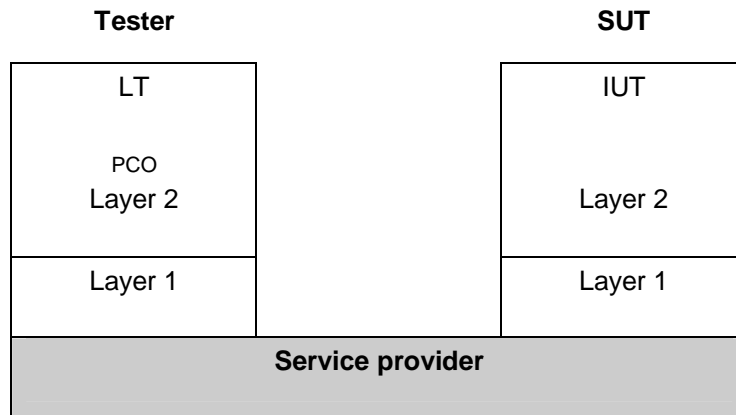


Figure 1: Remote test method

ISO/IEC 9646-2 [25] allows the informal expression of Test Co-ordination Procedures (TCP) between the System Under Test (SUT) upper layer(s) and the Lower Tester (LT). In the ATS contained in annex C, TCP is achieved by use of a second "informal" PCO, called "O" (for Operator). This PCO is used to specify control but not observation above the IUT and consequently, events at this PCO are never used to generate test case verdicts. The use of this O PCO is regarded as a preferred alternative to the use of the implicit send event, in that it allows the ATS to specify in a clear and meaningful way what actions are required to be performed on the IUT.

For the Network Integration Testing of B-ISDN compatibility and the interworking with N-ISDN, the end-to-end ATS is described in concurrent TTCN.

Below the different ATS architectures are shown

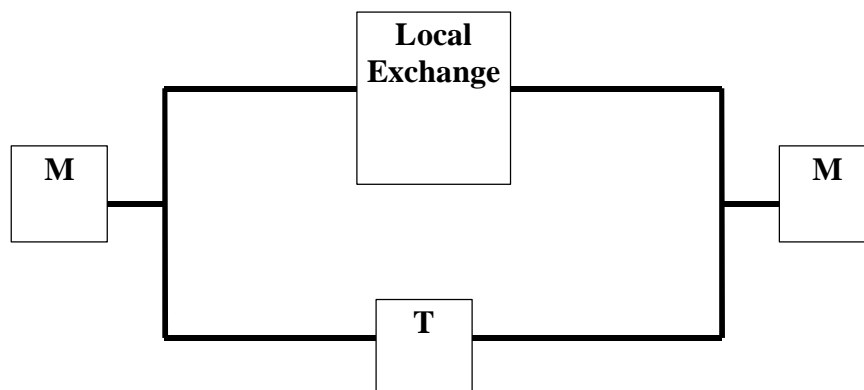


Figure 1/P613, Task 2

- T: Test equipment supporting two accesses and the complete ETS (ETS_CONFIG = complete)
- M: Monitor

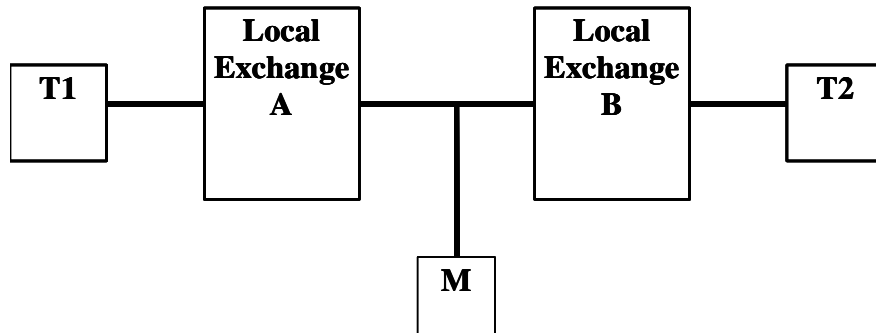


Figure 2/P613, Task 2

- T1: Test equipment supporting the ETS, part A (ETS_CONFIG = A_only)
 T2: Test equipment supporting the ETS, part B (ETS_CONFIG = B_only)
 M: Monitor (B-ISDN, N-ISDN or B-ISUP, respectively)

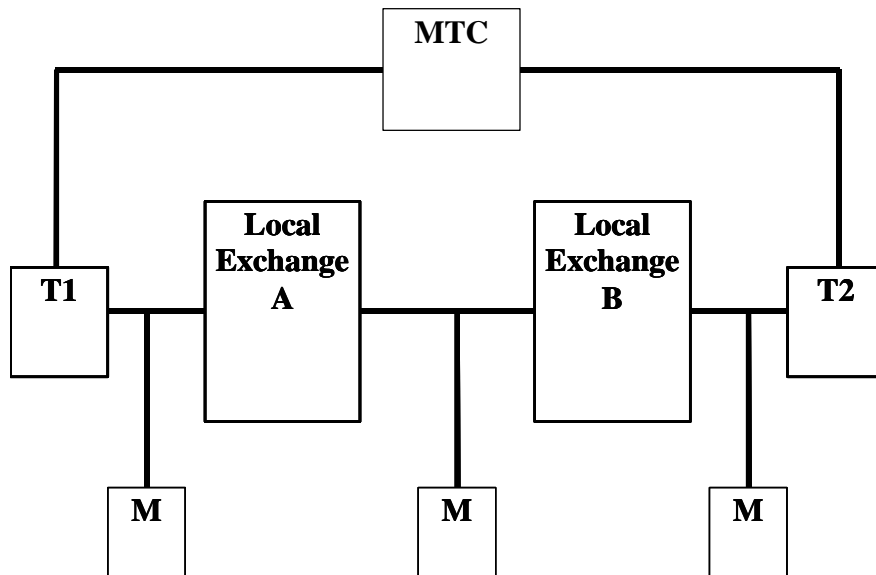


Figure 3/P613, Task 2

- T1: Test equipment supporting the ETS, part A (ETS_CONFIG = complete)
 T2: Test equipment supporting the ETS, part B (ETS_CONFIG = complete)
 M: Monitor (B-ISDN, N-ISDN or B-ISUP, respectively)
 MTC: Master Test Component to control all the other test components

The following figures represent the test configurations adopted in the end-to-end ATS:

4.1 B-ISDN configurations

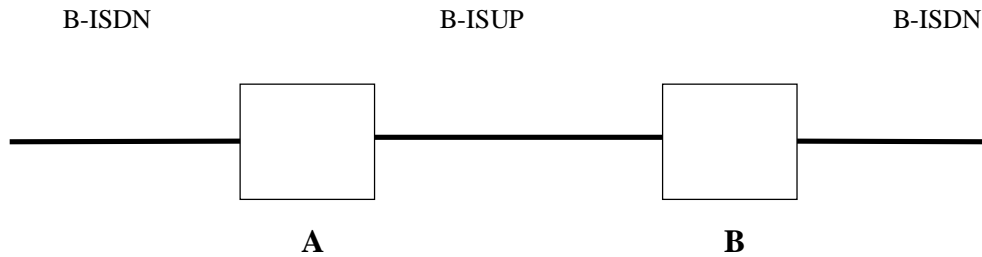


Figure 4/P613, Task 2: Configuration 1

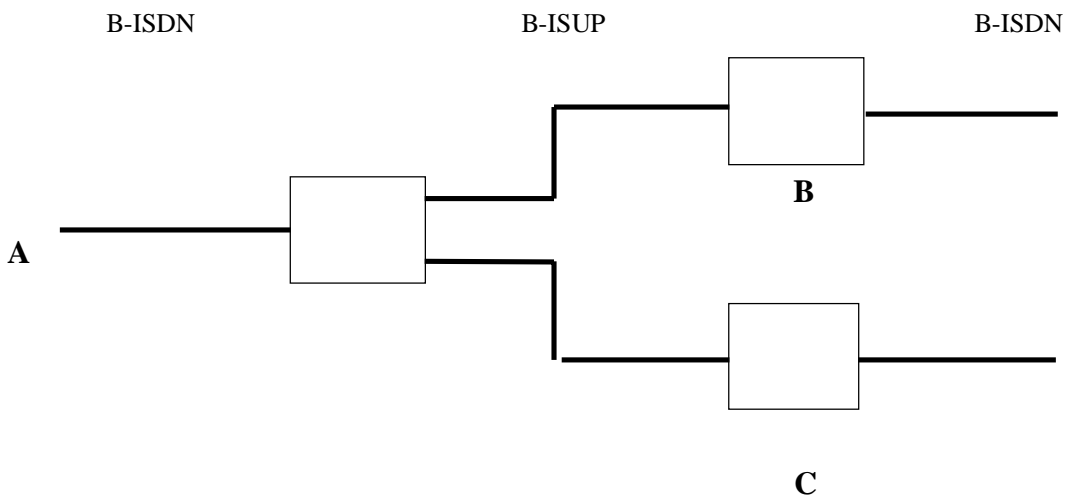


Figure 5/P613, Task 2: Configuration 2

Interworking B-ISDN/N-ISDN configuration

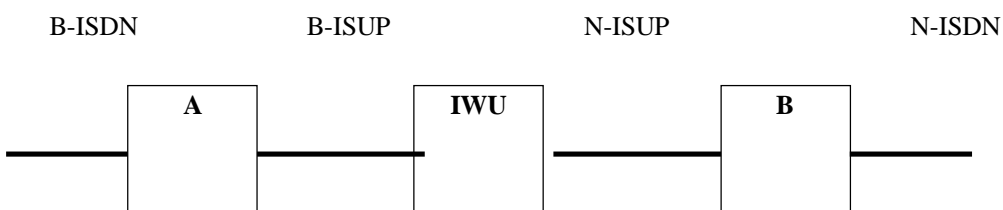


Figure 6/P613, Task 2: Configuration 3

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 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 [27], to produce a PCTR conformant with the PCTR template given in annex B of ISO/IEC 9646-4 [26].

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 [26], 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 [27], 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 [26]. In particular, these concern the realization of an Executable Test Suite (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 [27].

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

Annex A (normative): Implementation Conformance Statement (ICS) proforma for Broadband End-to-end tests

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 ICS proforma in this annex so that it can be used for its intended purposes and may further publish the completed ICS.

A.1 Guidance for completing the ICS proforma

A.1.1 Purposes and structure

The purpose of this ICS proforma is to provide a mechanism whereby a network provider of an implementation of the requirements for the network side for the Broadband Integrated Services Digital Network (B-ISDN), may provide information about the implementation in a standardized manner.

The proforma is subdivided into clauses for the following categories of information:

- guidance for completing the proformas;
- identification of the implementation;
- global statement of conformance;

A.1.2 Abbreviations and conventions

The ICS proforma contained in the annexes B is comprised of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7.

Item column

The item column contains a number which identifies the item in the table.

Item description column

The item description column describes in free text each respective item (e.g. parameters, timers, etc.). It implicitly means "is <item description> supported by the implementation?".

Status column

The following notations, defined in ISO/IEC 9646-7, are used for the status column:

- m mandatory - the capability is required to be supported.
- o optional - the capability may be supported or not.
- n/a not applicable - in the given context, it is impossible to use the capability.
- x prohibited (excluded) - there is a requirement not to use this capability in the given context.
- o.i qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies an unique group of related optional items and the logic of their selection which is defined immediately following the table.
- ci conditional - the requirement on the capability ("m", "o", "x" or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying an unique conditional status expression which is defined immediately following the table.

Support column

The support column shall be filled in by the network provider of the implementation. The following common notations, defined in ISO/IEC 9646-7, are used for the support column:

- Y or y supported by the implementation;
- N or n not supported by the implementation;
- N/A, n/a or - no answer required (allowed only if the status is n/a, directly or after evaluation of a conditional status).

It is also possible to provide a comment to an answer in the space provided at the bottom of the table.

Values allowed column

The values allowed column contains the type, the list, the range, or the length of values allowed. The following notations are used:

- range of values: <min value> .. <max value>
example: 5 .. 20
- list of values: <value1>, <value2>,, <valueN>
example: 2 ,4 ,6 ,8, 9
example: '1101'B, '1011'B, '1111'B
example: '0A'H, '34'H, 2F'H
- list of named values: <name1>(<val1>),<name2>(<val2>),..., <nameN>(<valN>)
example: reject(1), accept(2)
- length: size (<min size> .. <max size>)
example: size (1 .. 8)

Values supported column

The values supported column shall be filled in by the network provider of the implementation. In this column, the values or the ranges of values supported by the implementation shall be indicated.

A.1.3 Instructions for completing the ICS proforma

The network provider of the implementation shall complete the ICS proforma in each of the spaces provided. In particular, an explicit answer shall be entered, in each of the support or supported column boxes provided, using the notation described in clause B.1.1.2.

If necessary, the network provider may provide additional comments in space at the bottom of the tables, or separately on sheets of paper.

More detailed instructions may be given at the beginning of the different clauses of the ICS proforma.

A.2 Identification of the implementation

Identification of the Implementation Under Test (IUT), the Integrated Services Digital Network provided by the public telecommunications operator, should be filled in so as to provide as much detail as possible regarding version numbers and configuration options.

The product network provider information and client information should both be filled in if they are different.

A person who can answer queries regarding information supplied in the ICS and IXIT should be named as the contact person.

A.2.1 Date of the statement

.....

A.2.2 Implementation Under Test (IUT) identification

IUT name:

.....

IUT version:

.....

A.2.3 ICS contact person

(A person to contact if there are any queries concerning the content of the ICS or IXIT)

Name:

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

A.2.4 Identification of the document

This ICS proforma apply to the following standard:

ITU ETS 300 443 (1995): Digital Subscriber Signalling System No. 2 - User-Network Interface (UNI) layer 3 specification for basic call/connection control.

ITU ETS 300 663-1 (1995): Supplementary services using B-ISDN Digital Subscriber Signalling System No. 2 (DSS2) - Basic Call.

ITU ETS 300 770-1 (1997): Supplementary services using B-ISDN Digital Subscriber Signalling System No. 2 (DSS2) - Closed User Group (CUG).

ITU Q2957 (1995): Supplementary services using B-ISDN Digital Subscriber Signalling System No. 2 (DSS2) - User-to-User Signalling (UUS).

ITU EN 301 068-1 (1997): Digital subscriber signalling system No. 2 - Additional traffic parameters: Support of ATM transfer capability in the broadband bearer capability information element.

ITU EN 301 068-1 (1997): Digital subscriber signalling system No. 2 - Additional traffic parameters: Signalling capabilities to support traffic parameters for the available bit rate (ABR) ATM transfer capability.

ITU EN 301 067-1 (1997): Digital subscriber signalling system No. 2 - Connection characteristics negotiation during call/connection establishment phase.

ITU EN 301 276-1 (1996): Digital subscriber signalling system No. 2 - Peak cell rate modification by the connection owner.

ITU EN 301 276-1 (1996): Digital subscriber signalling system No. 2 - Connection modification: modification procedures for sustainable cell rate parameters.

ITU ETS 300 771-1 (1995): Digital subscriber signalling system No. 2 - User-network interface layer 3 specification for point-to-multipoint call/connection control.

Other ITU standards related to B-ISDN, DSS2 signalling, layer 3 testing.

A.2.5 Basic B-ISDN capabilities

Table A.1: Access characteristics

Item	Access	Reference	Status	Support
1	Physical layer access protocol conform to I.432	I.432	m	
2	B-ISDN ATM layer access protocol conform to I.361	I.361	m	
3	B-ISDN ATM Adaptation Layer - AAL access protocol conform to I.363	I.363	m	
4	B-ISDN ATM Adaptation Layer - SSCOP access protocol conform to Q.2110	Q.2110	m	
5	Base standard EN 300 443	EN 300 443	o	
6	Overlap sending	EN 300 443 clause 6.5	o	
7	Base standard ATM UNI 3.1	UNI 3.1	o	
Please specify any national deviations:				

Table A.2: Network signalling protocol

Item	Network	Reference	Status	Support
1	Functional description of the B-ISDN User Part (B-ISUP) of Signalling System n°7; General functions of messages and signals of B-ISDN User Part (B-ISUP) of Signalling System n°7	Q.2761 to 2764 Q.2721.1 to 2726 Q.2730 to Q.2735 Q.2660	m	
Please specify any national deviations:				

Table A.3: Bearer service

Item	Service	Reference	Status	Support
1	bearer service BCOB-A	EN 300 443 clause 4.5.7	m	
2	bearer service BCOB-C	EN 300 443 clause 4.5.7	m	
3	bearer service BCOB-X	EN 300 443 clause 4.5.7	m	
Please specify any national deviations:				

Table A.4: ATM Traffic Descriptor

Item	Service	Reference	Status	Support
1	Peak cell rate for CLP = 0 + 1	EN 300 443 clause 4.5.6	m	
2	Sustainable Cell Rate for CLP = 0 + 1	EN 301 068-1	o	
3	Maximum Burst Size for CLP = 0 + 1	EN 301 068-1	o	
4	Peak cell rate for CLP = 0	EN 300 443 clause 4.5.6	o	
5	Sustainable Cell Rate for CLP = 0	EN 301 068-1	o	
6	Maximum Burst Size for CLP = 0	EN 301 068-1	o	
Please specify any national deviations:				

Table A.5: Quality of service

Item	Service	Reference	Status	Support
1	Unspecified quality of service	EN 300 443 clause 4.5.18	o	
Please specify any national deviations:				

Table A.6: ATM adaptation layer

Item	Service	Reference	Status	Support
1	AAL type 1	EN 300 443 clause 4.5.5	o	
2	AAL type 5	EN 300 443 clause 4.5.5	o	
3	AAL for voice	EN 300 443 clause 4.5.5	o	
Please specify any national deviations:				

Table A.7: OAM traffic descriptor

Item	Service	Reference	Status	Support
1	OAM traffic descriptor – OAM F5 cells transported optionally	EN 300 443 clause 4.5.24	o	
2	OAM traffic descriptor – OAM F5 cells transported mandatory	EN 300 443 clause 4.5.24	o	
Please specify any national deviations:				

Table A.8: End-to-end transit delay

Item	Service	Reference	Status	Support
1	End to end transit delay	EN 300 443 clause 4.5.17	o	
Please specify any national deviations:				

Table A.9: Connection Identifier

Item	Service	Reference	Status	Support
1	Connection identifier	EN 300 443 clause 4.5.16	o	
Please specify any national deviations:				

Table A.10: Broadband High Layer Information type

Item	Service	Reference	Status	Support
1	ISO/IEC	EN 300 443 clause 4.5.8	o	
2	User-Specific	EN 300 443 clause 4.5.8	o	
3	Vendor-Specific Application Identifier	EN 300 443 clause 4.5.8	o	
4	ITU-T SG1 B-ISDN teleservice recommend.	EN 300 443 clause 4.5.8	o	
Please specify any national deviations:				

Table A.11: Broadband High Layer Information

Item	Service	Reference	Status	Support
1	User Info Layer 2 Q.922; User Info Layer 3 X.25 Packet Layer	EN 300 443 clause 4.5.9	o	
2	User Info Layer 2 Q.922; User Info Layer 3 X.25 Packet Layer; Packet size 1024; window size 7	EN 300 443 clause 4.5.9	o	
3	User Info Layer 2 Q.922; User Info Layer 3 X.25 Packet Layer; Packet size 512; window size 3	EN 300 443 clause 4.5.9	o	
4	User Info Layer 2 Q.922; User Info Layer 3 X.25 Packet Layer; Packet size 2048; window size 63	EN 300 443 clause 4.5.9	o	
5	User Info Layer 2 Q.922; User Info Layer 3 X.25 Packet Layer; Packet size 1024; window size 63	EN 300 443 clause 4.5.9	o	
Please specify any national deviations:				

Table A.12: N-ISDN services within B-ISDN

Item	Service	Reference	Status	Support
1	call establishment for "3,1 kHz audio" within B-ISDN	EN 300 443 clause E.2.1	m	
2	call establishment for "unrestricted digital information" within B-ISDN	EN 300 443 clause E.2.2	m	
3	call establishment for "telephony" within B-ISDN	EN 300 443 clause E.2.3	o	
4	call establishment for "videotelephony" within B-ISDN	EN 300 443 clause E.2.4	o	
5	call establishment for "telex G4" within B-ISDN	EN 300 443 clause E.2	o	
6	call establishment for "telephony 7 Khz" within B-ISDN	EN 300 443 clause E.2	o	
7	call establishment for "facsimile group 2/3" within B-ISDN	EN 300 443 clause E.2	o	
Please specify any national deviations:				

A.2.6 B-ISDN Supplementary services

Table A.13: CLIP service

Item	Service	Reference	Status	Support
1	Calling line identification presentation (CLIP) implemented	ETS 300 663-1 ETS 300 663-2	o	
2	NO SCREENING option implemented	ETS 300 663-1 ETS 300 663-2	o	
3	Calling line identification presentation (CLIP) implemented, with CLI provided by the network without subaddress	ETS 300 663-1 ETS 300 663-2	o	
4	Calling line identification presentation (CLIP) implemented, with CLI provided by the network, including subaddress	ETS 300 663-1 ETS 300 663-2	o	
5	Calling line identification presentation (CLIP) implemented, with CLI provided by the user, verified and passed	ETS 300 663-1 ETS 300 663-2	o	
6	Calling line identification presentation (CLIP) implemented, with CLI provided by the user, verified and passed including subaddress	ETS 300 663-1 ETS 300 663-2	o	
7	Calling line identification presentation (CLIP) implemented, with CLI provided by the user, not screened, including subaddress	ETS 300 663-1 ETS 300 663-2	o	
8	Calling line identification presentation (CLIP) implemented, with CLI provided by the user, verified and failed, including subaddress	ETS 300 663-1 ETS 300 663-2	o	
9	Calling line identification presentation (CLIP) implemented, with CLI provided by the user, not screened international call, including subaddress	ETS 300 663-1 ETS 300 663-2	o	
10	Two calling party number information elements delivery option	ETS 300 663-1 ETS 300 663-2	o	
11	Calling party number order is User provided, Network provided	ETS 300 663-1 ETS 300 663-2	o	
Please specify any national deviations:				

Table A.14: CLIR service

Item	Service	Reference	Status	Support
1	Calling line identification restriction (CLIR) implemented	ETS 300 664-1	o	
Please specify any national deviations:				

Table A.15: COLP service

Item	Service	Reference	Status	Support
1	Connected line identification presentation (COLP) implemented	ETS 300 665-1	o	
2	Connected line identification presentation (COLP) implemented, with COL provided by the network, without connected subaddress	ETS 300 665-1	o	
3	Connected line identification presentation (COLP) implemented, with COL provided by the network, including connected subaddress	ETS 300 665-1	o	
4	Connected line identification presentation (COLP) implemented, with COL provided by the user, verified and passed	ETS 300 665-1	o	
5	Connected line identification presentation (COLP) implemented, with COL provided by the user, verified and passed, including connected subaddress	ETS 300 665-1	o	
6	Connected line identification presentation (COLP) implemented, with COL provided by the user, not screened, including subaddress	ETS 300 665-1	o	
Please specify any national deviations:				

Table A.16: COLR service

Item	Service	Reference	Status	Support
1	Connected line identification restriction (COLR) implemented	ETS 300 666-1	o	
Please specify any national deviations:				

Table A.17: SUB service

Item	Service	Reference	Status	Support
1	Subaddressing (SUB) implemented	ETS 300 667-1	o	
Please specify any national deviations:				

Table A.18: UUS service

Item	Service	Reference	Status	Support
1	User-user signalling (UUS) service1 implicitly request (SETUP, ALERTING, CONNECT, RELEASE, RELEASE COMPLETE messages) implemented	ETS 300 668-1	o	
Please specify any national deviations:				

Table A.19: CUG service

Item	Service	Reference	Status	Support
1	Closed user group (CUG) implemented	ETS 300 770-1, Q.955	o	
2	Closed user group (CUG) implemented - explicit request	ETS 300 770-1, Q.955	o	
3	Closed user group (CUG) implemented - implicit request, preferential CUG	ETS 300 770-1, Q.955	o	
4	Incoming access (IA)	ETS 300 770-1, Q.955	o	
5	Outgoing access (OA)	ETS 300 770-1, Q.955	o	
6	Incoming calls barred (ICB)	ETS 300 770-1, Q.955	o	
7	Both parties are within same CUG	ETS 300 770-1, Q.955	o	
Please specify any national deviations:				

A.2.7 Interworking with N-ISDN

When performing network integration testing between B-ISDN and N-ISDN users, the following tables related to the implemented interworking capabilities should be filled in.

Table A.20: B-ISDN interworking capabilities, basic call

Item	Service	Reference	Status	Support
1	call establishment using a N-ISDN bearer service "unrestricted digital information" to a N-ISDN user	EN 300 443 clause E.2.2	m	
2	call establishment using a N-ISDN bearer service "3.1 kHz audio" to a N-ISDN user	EN 300 443 clause E.2.1	m	
3	call establishment using a N-ISDN bearer service "UDI/TA" to a N-ISDN user	EN 300 443 clause E.2.2	m	
4	call establishment using a N-ISDN service "telephony" to a N-ISDN user	EN 300 443 clause E.2.3	o	
5	call establishment using a N-ISDN service "videotelephony" to a N-ISDN user	EN 300 443 clause E.2.4	o	
6	call establishment using a N-ISDN service "telex G4" to a N-ISDN user	EN 300 443 clause E.2	o	
7	call establishment using a N-ISDN service "telephony 7Khz" to a N-ISDN user	EN 300 443 clause E.2	o	
8	call establishment using a N-ISDN service "facsimile group 2/3" to a N-ISDN user	EN 300 443 clause E.2	o	
9	cause values according to Q.850 on unsuccessful calls	EN 300 443	m	
Please specify any national deviations:				

Table A.21: B-ISDN interworking capabilities, supplementary services

Item	Service	Reference	Status	Support
1	CLIP implemented in B-ISDN to N-ISDN users	ETS 300 664-1 ETS 300 664-2	o	
2	Two calling party number information elements delivery option	ETS 300 664-1 ETS 300 664-2	o	
3	CLIR implemented in B-ISDN to N-ISDN users	ETS 300 664-1	o	
4	COLP implemented in B-ISDN to N-ISDN users	ETS 300 665-1	o	
5	COLR implemented in B-ISDN to N-ISDN users	ETS 300 666-1	o	
6	SUB implemented in B-ISDN to N-ISDN users	ETS 300 667-1	o	
7	UUS implemented in B-ISDN to N-ISDN users	ETS 300 668-1	o	
8	CUG implemented	ETS 300 770-1; Q.955	o	
Please specify any national deviations:				

Table A.22: N-ISDN interworking capabilities, basic call

Item	Service	Reference	Status	Support
1	call establishment from N-ISDN using bearer service "3.1Khz audio" to a B-ISDN user	ETS 300 403-1	m	
2	call establishment from N-ISDN using bearer service "unrestricted digital information" to a B-ISDN user	ETS 300 403-1	m	
3	call establishment from N-ISDN using bearer service "speech" to a B-ISDN user	ETS 300 403-1	m	
4	call establishment from N-ISDN using bearer service "UDI/TA" to a B-ISDN user	ETS 300 403-1	m	
5	call establishment from N-ISDN using service "telephony" to a B-ISDN user	ETS 300 403-1	o	
6	call establishment from N-ISDN using service "telephony" to a B-ISDN user	ETS 300 403-1	o	
7	call establishment from N-ISDN using service "videotelephony" to a B-ISDN user	ETS 300 403-1	o	
8	call establishment from N-ISDN using service "telefax G4" to a B-ISDN user	ETS 300 403-1	o	
9	call establishment from N-ISDN using service "telephony 7khz" to a B-ISDN user	ETS 300 403-1	o	
10	call establishment from N-ISDN using service "facsimile group 2/3" to a B-ISDN user	ETS 300 403-1	o	
11	cause values according to ETS 300 403-1 on unsuccessful calls	ETS 300 403-1	m	
Please specify any national deviations:				

Table A.23: N-ISDN interworking capabilities, supplementary services

Item	Service	Reference	Status	Support
1	CLIP implemented in N-ISDN to B-ISDN users	ETS 300 664-1 ETS 300 664-2	o	
2	Two calling party number information elements delivery option	ETS 300 664-1 ETS 300 664-2	o	
3	CLIR implemented in N-ISDN to B-ISDN users	ETS 300 664-1	o	
4	COLP implemented in N-ISDN to B-ISDN users	ETS 300 665-1	o	
5	COLR implemented in N-ISDN to B-ISDN users	ETS 300 666-1	o	
6	SUB implemented in N-ISDN to B-ISDN users	ETS 300 667-1	o	
7	UUS implemented in N-ISDN to B-ISDN users	ETS 300 668-1	o	
8	CUG implemented	ETS 300 770-1; Q.955	o	
Please specify any national deviations:				

A.2.8 B-ISDN Capability Set 2.1

Table A.24: Access characteristics to CS2.1

Item	Access	Reference	Status	Support
1	Base standard EN 301 068-1	EN 301 068-1	o	
2	Base standard ETS 300 771-1	ETS 300 771-1	o	
Please specify any national deviations:				

Table A.25: Access characteristics for point-to-multipoint call/connection control

Item	Access	Reference	Status	Support
1	Base standard ETS 300 771-1	ETS 300 771-1	o	
Please specify any national deviations:				

Table A.26: Access characteristics for Bandwidth Negotiation

Item	Access	Reference	Status	Support
1	Base standard EN 301 067-1	EN 301 067-1	o	
Please specify any national deviations:				

Table A.27: Access characteristics for Bandwidth Modification

Item	Access	Reference	Status	Support
1	Base standard EN 301 276-1	EN 301 276-1	o	
2	Base standard EN 301 276-1	EN 301 276-1	o	
Please specify any national deviations:				

Table A.28: Access characteristics for Available Bit Rate

Item	Access	Reference	Status	Support
1	Base standard EN 301 068-1	EN 301 068-1	o	
Please specify any national deviations:				

Annex B (normative): Implementation Extra Information (IXIT) proforma for Broadband End-to-end tests

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 IXIT proforma in this annex so that it can be used for its intended purposes and may further publish the completed IXIT.

B.1 Instructions for completing the IXIT proforma

Before running the B-ISDN End-to-end test suite each participating public network operator will need to supply information concerning the allocation and availability of suitable B-ISDN and N-ISDN test numbers which will be required for setting up international connections.

This section contains a questionnaire, which shall be completed before performing the international B-ISDN end-to-end test suite. Additional information is used by the testing personnel for selecting and for setting the correct parameters on the test equipment.

This questionnaire contains only the information required to perform the tests.

B.2 Identification summary

PIXIT number:

.....

Date of issue:

.....

Issued to:

.....

B.3 Abstract test suite summary

Protocol specification: EN 300 443, ETS 300 664-1, ETS 300 770-1, ETS 300 668-1, EN 301 068-1, EN 301 067-1, EN 301 276-1, ETS 300 771-1.

ATS specification: End_c4.mp.

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

B.4 IXIT items

Table B.1: Access numbers

Item	Parameter	Number
1	B-ISDN access number	
2	B-ISDN access subaddress	
3	Unallocated B-ISDN access number	
4	B-ISDN number with no route	
5	Changed B-ISDN number	
6	Incomplete B-ISDN number	
7	Wrong B-ISDN number	
8	N-ISDN access number	
9	N-ISDN access subaddress	
10	Unallocated N-ISDN access number	
11	N-ISDN number with no route	
12	Changed N-ISDN number	
13	Incomplete N-ISDN number	
14	Wrong N-ISDN number	
15	B-ISDN number not supporting requested user cell rate	
16	B-ISDN number not supporting requested quality of service	
17	B-ISDN number not supporting requested bearer service	
18	Second B-ISDN access number	

Table B.2: Additional information

Item	Parameter	Range	Value
1	Call reference value for Broadband Network	23 bits	
2	Call reference value for Narrowband Network	7 bits	
3	Virtual path identifier	32...65535	
4	Virtual channel identifier	32...65535	
5	Forward peak cell rate (CLP = 0)		
6	Backward peak cell rate (CLP = 0)		
7	Forward peak cell rate (CLP = 0 + 1)		
8	Backward peak cell rate (CLP = 0 + 1)		
9	Forward Sustainable cell rate (CLP = 0)		
10	Backward Sustainable cell rate (CLP = 0)		
11	Forward Sustainable cell rate (CLP = 0 + 1)		
12	Backward Sustainable cell rate (CLP = 0 + 1)		
13	Forward Maximum Burst size (CLP = 0)		
14	Backward Maximum Burst size (CLP = 0)		
15	Forward Maximum Burst size (CLP = 0 + 1)		
16	Backward Maximum Burst size (CLP = 0 + 1)		
17	High layer information - ISO/IEC	Hexstring [2..16]	
18	High layer information - user specific	Hexstring [2..16]	
19	High layer information - vendor specific	Hexstring [2..16]	
20	High layer information - ITU network identification	Hexstring [2..16]	
21	Forward Maximum CPCS	0...65535	
22	Backward Maximum CPCS	0...65535	
23	Forward end-to-end OAM F5 flow indicator	3 bits:000,001 or100	
24	Backward end-to-end OAM F5 flow indicator	3 bits:000,001 or100	
25	Network identification	Hexstring [2..40]	
26	Content of the UUS	Hexstring [2..40]	
27	CUG index code for B-ISDN	Hexstring [4]	
28	SSCS-Type in AAL Parameter	Hexstring [2]	
29	Maximum end-to-end transit delay		
30	Timer for waiting activity on called side	Suggested 4 min	
31	Timer for no activity	Suggested 1 min	
32	Timer for waiting for completion of both sides of the test	Suggested 6 min	
33	Test System Configuration 0=both A and B side supported(COMplete) 1 = B side only (B_ONLY) 2 = A side only (A_ONLY)	Integer (0,1,2)	
34	Type of number used in the Called and Calling Party Number Information Element 000 = unknown, 001 = international, 010 = national	3 bits	
35	Alternative Forward peak cell rate (CLP = 0 + 1)		
36	Alternative Backward peak cell rate (CLP = 0 + 1)		
37	Alternative Forward Sustainable cell rate (CLP = 0)		
38	Alternative Backward Sustainable cell rate (CLP = 0)		
39	Alternative Forward Maximum Burst size (CLP = 0)		
40	Alternative Backward Maximum Burst size (CLP = 0)		
41	Not supported Alternative Forward peak cell rate (CLP = 0 + 1)		
42	Not supported Alternative Backward peak cell rate (CLP = 0 + 1)		
43	Not supported Forward peak cell rate (CLP = 0 + 1)		
44	Not supported Backward peak cell rate (CLP = 0 + 1)		
45	Minimum acceptable Forward peak cell rate (CLP = 0 + 1)		

Item	Parameter	Range	Value
46	Minimum acceptable Backward peak cell rate (CLP=0+1)		
47	Value between Forward peak cell rate (CLP = 0 + 1) and minimum Forward peak cell rate (CLP = 0 + 1)		
48	Value between Backward peak cell rate (CLP=0+1) and minimum Backward peak cell rate (CLP = 0 + 1)		
49	Forward Peak cell rate (CLP = 0 + 1) bigger than ATM_PCR_F01 for modification request		
50	Backward Peak cell rate (CLP = 0 + 1) bigger than ATM_PCR_B01 for modification request		
51	Forward Peak cell rate (CLP = 0) bigger than ATM_PCR_F01 for modification request		
52	Backward Peak cell rate (CLP = 0) bigger than ATM_PCR_B0 for modification request		
53	Forward Peak cell rate (CLP = 0 + 1) smaller than ATM_PCR_F01 for modification request		
54	Backward Peak cell rate (CLP = 0 + 1) smaller than ATM_PCR_B01 for modification request		
55	Forward Peak cell rate (CLP = 0) smaller than ATM_PCR_F0 for modification request		
56	Backward Peak cell rate (CLP = 0) smaller than ATM_PCR_B0 for modification request		
57	Forward Sustainable cell rate (CLP = 0 + 1) bigger than ATM_SCR_F01 for modification request		
58	Backward Sustainable cell rate (CLP = 0 + 1) bigger than ATM_PCR_F01 for modification request		
59	Forward Sustainable cell rate (CLP = 0 + 1) smaller than ATM_SCR_F01 for modification request		
60	Backward Sustainable cell rate (CLP = 0 + 1) smaller than ATM_SCR_B01 for modification request		
61	Forward Maximum Burst Size (CLP = 0 + 1) bigger than ATM_MBS_F01 for modification request		
62	Backward Maximum Burst Size (CLP = 0 + 1) bigger than ATM_MBS_B01 for modification request		
63	Forward Maximum Burst Size (CLP = 0 + 1) smaller than ATM_MBS_F01 for modification request		
64	Backward Maximum Burst Size (CLP = 0 + 1) smaller than ATM_MBS_B01 for modification request		
65	Forward ABR minimum cell rate (CLP = 0 + 1)		
66	Backward ABR minimum cell rate (CLP = 0 + 1)		
67	Forward ABR initial cell rate (CLP = 0 + 1)		
68	Backward ABR initial cell rate (CLP = 0 + 1)		
69	Forward ABR transient buffer exposure		
70	Backward ABR transient buffer exposure		
71	Cumulative RM fixed round-trip time		
72	Forward rate increase factor		
73	Backward rate increase factor		
74	Forward rate decrease factor		
75	Backward rate decrease factor		
76	Invoke Identifier	-32 768...32 767	
77	CUGindex code for N-ISDN	9..99	

Annex C (normative): Implementation Conformance Test Report (ICTR) proforma for Broadband End-to-end tests

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 ICTR proforma in this annex so that it can be used for its intended purposes and may further publish the completed ICTR.

The ICTR Proforma is based on ISO/IEC 9646-5. Any additional information needed can be found in the present document.

C.1 Identification summary

C.1.1 Implementation conformance test report

ICTR Number:	
ICTR Date:	
Test Laboratory Identification:	
Test Laboratory Manager:	
Signature:	

C.1.2 IUT identification

Name:	
Version:	
Protocol specification:	
ICS:	
Previous ICTR if any:	

C.1.3 Testing environment

IXIT Number:	
ATS Specification:	
Abstract Test Method:	
Means of Testing identification:	
Date of testing:	
Conformance Log reference(s):	
Retention Date for Log reference(s):	

C.1.4 Limits and reservation

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

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C.1.5 Comments

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

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C.2 IUT Conformance status

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

Strike the appropriate words in this sentence. If the ICS for this IUT is consistent with the static conformance requirements (as specified in clause B.3.3 in the present document) and there are no "FAIL" verdicts to be recorded (in clause B.3.6) strike the word "has /". otherwise strike the words "/ has not".

C.3 Static conformance summary

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

Strike the appropriate words in this sentence.

C.4 Dynamic conformance summary

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

Strike the appropriate words in this sentence. If there are no "FAIL" verdicts to be recorded (in clause B.3.6 of the present document) strike the word "did /". otherwise strike the words "/ did not".

Summary of the results of groups of test:

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C.5 Static conformance review report

If clause B.3.3 indicates non-conformance, this clause itemizes the mismatches between the ICS and the static conformance requirements of the specified protocol specification.

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C.6 Test campaign report

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Reference to any observations made in B.3.7
TC11111				
TC11112				
TC11113				
TC11114				
TC11115				
TC11116				
TC11117				
TC11118				
TC11119				
TC111110				
TC111111				
TC111112				
TC111113				
TC111114				
TC111115				
TC111116				
TC111117				
TC111118				
TC111119				
TC111120				
TC11121				
TC11122				
TC11123				
TC11124				
TC11125				
TC11131				
TC11132				
TC11211				
TC11212				
TC11213				
TC11214				
TC11215				
TC11216				
TC11217				
TC11218				
TC11219				
TC112110				

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Reference to any observations made in B.3.7
TC112111				
TC112112				
TC112113				
TC11311				
TC11312				
TC11313				
TC12111				
TC12112				
TC12113				
TC12114				
TC12115				
TC12116				
TC12117				
TC12118				
TC12119				
TC121110				
TC124111				
TC124112				
TC124113				
TC124114				
TC124115				
TC124211				
TC124212				
TC124213				
TC124214				
TC124215				
TC124216				
TC124217				
TC124218				
TC124311				
TC124312				
TC124313				
TC12511a				
TC12511b				
TC12512a				
TC12512b				
TC12513a				
TC12513b				
TC12514				
TC12515				
TC12516				
TC12517				
TC12518				
TC12519				
TC125110				
TC125111				
TC125112				
TC125113				
TC125114				
TC12521				
TC12522				
TC12523				
TC12611a				
TC12611b				
TC12612a				
TC12612b				
TC12613a				
TC12613b				
TC12614a				
TC12614b				
TC12615a				
TC12615b				

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Reference to any observations made in B.3.7
TC12621				
TC12622				
TC12711				
TC12712				
TC12713				
TC12714				
TC12721				
TC311				
TC312				
TC313				
TC314				
TC315				
TC316				
TC317				
TC318				
TC319				
TC3110				
TC321				
TC322				
TC323				
TC324				
TC325				
TC326				
TC327				
TC331				
TC332				
TC333				
TC334				
TC335				
TC336				
TC337				
TC341				
TC342				
TC343				
TC344				
TC345				
TC351				
TC352				
TC361				
TC362				
TC363				
TC364				
TC365				
TC366				
TC367				
TC368				
TC371				
TC372				
TC373				
TC374				
TC375				
TC376				
TC377				
TC378				
TC379				
TC3710				
TC3711				
TC3712				
TC3713				
TC3714				
TC3715				
TC3716				

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Reference to any observations made in B.3.7
TC3717				
TC3718				
TC3719				
TC3720				
TC3721				
TC3722				
TC3723				
TC3724				
TC3725				
TC3726				
TC3727				
TC3728				
TC3729				
TC3730				
TC3731				
TC3732				
TC21111a				
TC21111b				
TC21112				
TC21113				
TC21114				
TC21115				
TC21116				
TC21117				
TC21118				
TC21121				
TC21122				
TC21123				
TC21124				
TC21125				
TC21126				
TC21127				
TC21128				
TC21129				
TC21131				
TC21132				
TC21133				
TC21211				
TC21212				
TC21213				
TC21214				
TC21215				
TC21216				
TC21217				
TC21218				
TC21221				
TC21222				
TC21223				
TC21224				
TC21225				
TC21226				
TC21227				
TC21228				
TC21229				
TC21231				
TC21232				
TC21233				
TC22111				
TC22112				
TC22113				
TC22114				
TC22115				

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Reference to any observations made in B.3.7
TC22116				
TC22117				
TC22118				
TC22119				
TC221110				
TC22121				
TC22122				
TC22123				
TC22124				
TC22125				
TC22126				
TC22127				
TC22131				
TC22132				
TC22133				
TC22134				
TC22135				
TC22136				
TC22137				
TC22141				
TC22142				
TC22143				
TC22144				
TC22145				
TC22151				
TC22152				
TC22161				
TC22162				
TC22163				
TC22164				
TC22165				
TC22166				
TC22167				
TC22168				
TC22171				
TC22172				
TC22173				
TC22174				
TC22175				
TC22176				
TC22177				
TC22178				
TC22179				
TC221710				
TC221711				
TC221712				
TC221713				
TC221714				
TC221715				
TC221716				
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TC221723				
TC221724				
TC221725				
TC221726				
TC221727				
TC221728				

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Reference to any observations made in B.3.7
TC221729				
TC221730				
TC221731				
TC221732				
TC221733				
TC221734				
TC221735				
TC221736				
TC221737				
TC22211				
TC22212				
TC22213				
TC22214				
TC22215				
TC22216				
TC22217				
TC22218				
TC22219				
TC222110				
TC22221				
TC22222				
TC22223				
TC22224				
TC22225				
TC22226				
TC22227				
TC22231				
TC22232				
TC22233				
TC22234				
TC22235				
TC22236				
TC22237				
TC22241				
TC22242				
TC22243				
TC22244				
TC22245				
TC22251				
TC22252				
TC22261				
TC22262				
TC22263				
TC22264				
TC22265				
TC22266				
TC22267				
TC22268				
TC22271				
TC22272				
TC22273				
TC22274				
TC22275				
TC22276				
TC22277				
TC22278				
TC22279				
TC222710				
TC222711				
TC222712				
TC222713				
TC222714				

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Reference to any observations made in B.3.7
TC222715				
TC222716				
TC222717				
TC222718				
TC222719				
TC222720				
TC222721				
TC222722				
TC222723				
TC222724				
TC222725				
TC222726				
TC222727				
TC222728				
TC222729				
TC222730				
TC222731				
TC222732				
TC222733				
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TC222735				
TC222736				
TC222737				

C.7 Observations

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

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Annex D (informative): Abstract Test Suite (ATS)

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

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.

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

The TTCN.GR representation of this ATS is contained in an Adobe Portable Document Format™ file (end_c37_new.PDF contained in archive eg_20190102v010101m0.ZIP) which accompanies the present document.

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

The TTCN.MP representation corresponding to this ATS is contained in an ASCII file (end_c37_new.MP contained in archive eg_20190102v010101m0.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		
V1.1.1	March 2001	Membership Approval Procedure MV 20010518: 2001-03-20 to 2001-05-18
V1.1.1	May 2001	Publication