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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 3: Test Suite Structure and Test Purposes (TSS&TP) specification for the user

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**Broadband Integrated Services Digital Network (B-ISDN);
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Foreword

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

The present document is part 3 of a multi-part EN covering the Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Connection characteristics; ATM transfer capability and traffic parameter indication, as identified below:

- Part 1: "Protocol specification [ITU-T Recommendations Q.2961.1 [10] (1995), Q.2961.2 (1997), Q.2961.3 (1997), Q.2961.4 (1997), modified]";
- Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";
- Part 3: "Test Suite Structure and Test Purposes (TSS&TP) specification for the user";**
- Part 4: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the user";
- Part 5: "Test Suite and Test Purposes (TSS & TP) specification for the network";
- Part 6: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network".

National transposition dates

Date of adoption of this EN:	28 April 2000
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1 Scope

The present document specifies the user Test Suite Structure and Test Purposes (TSS&TP) for the T_B reference point or coincident S_B and T_B reference point (as defined in ITU-T Recommendation I.413 [5]) of implementations conforming to the standards for the signalling user-network layer 3 specification for ATM transfer capability and traffic parameter indication of the Digital Subscriber Signalling System No. two (DSS2) protocol for the pan-European Broadband Integrated Services Digital Network (B-ISDN), EN 301 068-1 [1].

A further part of the present document specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma based on the present document.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

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- [1] ETSI EN 301 068-1: "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]"; <http://standards.iteh.ai/catalog/standards/sist/e4e129a7-3fc0-4cf4-9a0b-52c2bd232c51/sist-en-301-068-3-v1-1-2-2003>
- [2] ETSI EN 301 068-2: "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 2: Protocol Implementation Conformance Statement (PICS) proforma specification".
- [3] ISO/IEC 9646-1 (1994): "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 1: General concepts".
- [4] ISO/IEC 9646-2 (1994): "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 2: Abstract Test Suite specification".
- [5] ITU-T Recommendation I.413 (1993): "B-ISDN user-network interface".
- [6] ETSI ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [7] ETSI EN 300 443-1: "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]".
- [8] ETSI EN 301 067-1: "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]".
- [9] ITU-T Recommendation Q.2961: "Digital subscriber signalling system No. 2 – Additional traffic parameters".

- [10] ITU-T Recommendation Q.2961.1: "Additional signalling capabilities to support traffic parameters for the tagging option and the sustainable cell rate parameter set".
- [11] ITU-T Recommendation Q.2961.2: "Digital subscriber signalling system No. 2 - Additional traffic parameters: Support of ATM transfer capability in the broadband bearer capability information element".
- [12] ITU-T Recommendation Q.2961.3: "Signalling capabilities to support traffic parameters for the available bit rate (ABR) ATM transfer capability".
- [13] ITU-T Recommendation Q.2961.4: "Signalling capabilities to support traffic parameters for the ATM Block Transfer (ABT) ATM transfer capability".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply, in addition to those given in EN 301 068-1 [1] and EN 300 443-1 [7].

3.1.1 Definitions related to conformance testing

abstract test case: refer to ISO/IEC 9646-1 [3]

Abstract Test Method (ATM): refer to ISO/IEC 9646-1 [3]

Abstract Test Suite (ATS): refer to ISO/IEC 9646-1 [3]

Implementation Under Test (IUT): refer to ISO/IEC 9646-1 [3]

lower tester: refer to ISO/IEC 9646-1 [3]

Protocol Implementation Conformance Statement (PICS): refer to ISO/IEC 9646-1 [3]

PICS proforma: refer to ISO/IEC 9646-1 [3]

Protocol Implementation eXtra Information for Testing (PIXIT): refer to ISO/IEC 9646-1 [3]

PIXIT proforma: refer to ISO/IEC 9646-1 [3]

Test Purpose (TP): refer to ISO/IEC 9646-1 [3]

3.1.2 Definitions related to EN 301 068-1

user: DSS2 protocol entity at the User side of the user-network interface where a T_B reference point or coincident S_B and T_B reference point applies

user (S_B/T_B): DSS2 protocol entity at the User side of the user-network interface where a coincident S_B and T_B reference point applies

user (T_B): DSS2 protocol entity at the User side of the user-network interface where a T_B reference point applies (user is a private ISDN)

3.2 Abbreviations

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

ABT-IT	ATM block transfer with delayed transmission
ABT-DT	ATM block transfer with immediate transmission
ATM	Abstract Test Method
ATS	Abstract Test Suite
DSS2	Digital Subscriber Signalling System No. two
B-ISDN	Broadband Integrated Services Digital Network
ICR	Initial cell rate
IUT	Implementation Under Test
PCR	Peak Cell Rate
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
RDF	Rate decrease factor
RIF	Rate increase factor
RM	Resource management
TBE	ABR transient buffer exposure
TP	Test Purpose
TSS	Test Suite Structure
U0	Null call/connection state
U1	Call Initiated call/connection state
U3	Outgoing Call Proceeding call/connection state
U4	Call Delivered call/connection state
U7	Call Received call/connection state
U8	Connect Request call/connection state
U9	Incoming Call Proceeding call/connection state
U10	Active call/connection state

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4 Test Suite Structure (TSS)

- Signalling procedures at the coincident S_B/T_B and at the T_B reference points
 - Additional parameter procedures at the originating interface.
 - Sustainable cell rate parameter set (01)
 - Traffic management option for support of tagging (02)
 - Broadband bearer capability (03)
 - Available bit rate setup parameter (04)
 - ATM transfer block capability (05)
 - Handling of error conditions (06)
 - Additional parameter procedures at the destination interface.
 - Sustainable cell rate parameter set (07)
 - Traffic management option for support of tagging (08)
 - Broadband bearer capability (09)
 - Available bit rate setup parameter (10)
 - ATM transfer block capability (11)
 - Handling of error conditions (12)

Figure 1: Test suite structure

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5 Test Purposes (TP)

5.1 Introduction

For each test requirement a TP is defined.

5.1.1 TP naming convention

Tps are numbered, starting at 01, within each group. Groups are organized according to the TSS. Additional references are added to identify the actual test suite (see table 1).

Table 1: TP identifier naming convention scheme

Identifier:	<suite_id>_<group>_<nnn>
<suite_id>=	service + type of IUT: "INDU" for connection INDication, IUT = User
<group> =	group number: two character field representing the group reference according to TSS
<nn> =	sequential number: (01-99)

5.1.2 Source of TP definition

The TPs are based on EN 301 068-1 [1].

5.1.3 Test strategy

As the base standard EN 301 068-1 [1] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the PICS specification EN 301 068-2 [2].

The TPs are only based on conformance requirements related to the externally observable behaviour of the IUT and are limited to conceivable situations to which a real implementation is likely to be faced (ETS 300 406 [6]).

5.1.4 Test of call states

Many TPs include a reference to the IUT's final call state after the realization of the TP. In these cases the TP includes the requirement to ensure that the IUT has entered this particular final call state. Ensuring that the IUT is in a particular call state shall be realized by following the procedures described in subclause 5.6.11 of EN 300 443-1 [7]. According to these procedures, the IUT on receipt of a STATUS ENQUIRY message, shall respond with a STATUS message indicating, in the fifth octet of the Call state information element, the current call state of the IUT. This exchange of messages is not mentioned explicitly in each TP but is considered to be implicit in the reference to the final call state. This way of phrasing the TPs has been used to avoid over-complicating the text and structure of the TPs and to improve the readability.

5.1.5 Validity of test purposes

The test purposes below are valid only for IUTs that do not use the negotiation procedure defined in EN 301 067-1 [8]. These procedures are tested in the test specification standards related to EN 301 067-1 [8].

5.2 TPs for the ATM transfer capability and traffic parameter indication, user **(standards.iteh.ai)**

All PICS items referred to in this subclause are as specified in EN 301 068-2 [2] unless indicated otherwise by another numbered reference.

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Unless specified:

- the messages indicated are valid and contain at least the mandatory information elements and possibly optional information elements;
- the information elements indicated are valid and contain at least the mandatory parameters and possibly optional parameters.

5.2.1 Signalling procedures at the coincident S_B/T_B and at the T_B reference points

NOTE: Unless otherwise specified, the connection defined by the requested ATM traffic descriptor is available for use.

5.2.1.1 Additional parameter procedures at the originating interface

Test purposes for EN 301 068-1 [1].

5.2.1.1.1 Sustainable Cell Rate parameter set (01)

Test purposes for EN 301 068-1 [1] (ITU-T Recommendation Q.2961.1 [10], modified).

NOTE: In the following test purpose Sustainable cell rate parameter set includes Sustainable cell rate and Maximum Burst size.