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SLOVENSKI STANDARD
SIST EN 301 003-6 V1.1.3:2005

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ü]fc_cdUgcj bc`X][ ]hU´bc`ca fYÿˆY˝n`]bhY[ f]fUb]a ]`ghcf]hj Ua]`f6!=G8 BŁ!´Dfchc_c` X][ ]hU´bY`bUfc b]ý_Yˆg][ bU´]nUW´Yˆýh˝&`f8 GG&Ł!`?UfU_hYf]gh_Y´nj YnY´!´Df]´U[ U´Ub^Y hYa Ybg_YˆWY´] bY´\ ]fcgh]´df]`UgHb]_i `nj YnY´!`*˝"XY.˝5 VgHfU_Hb]`dfYg_i ýU´b]`b]n f5`HGŁ]b`XcXUHbU´]bkfa UW´U´nU´dfYg_i ýUbˆY´XY´bY´]nj YXVY´dfchc_c`U´fD=L=HŁ! Dfc^cfa U`gdYW]Z]_UW´U´nU´ca fYÿˆY

Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Connection characteristics; Peak cell rate modification by the connection owner; Part 6: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network

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ETSI

Postal address
F-06921 Sophia Antipolis Cedex - FRANCE

iTeh STANDARD PREVIEW
Office address
650 Route des Lucioles - Sophia Antipolis
(standards.iteh.ai)
Valbonne - 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

Internet
secretariat@etsi.fr
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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Signalling Protocol and Switching (SPS).

The present document is part 6 of a multi-part standard covering the Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Connection characteristics; Peak cell rate modification by the connection owner, as described below:

Part 1:   "Protocol specification [ITU-T Recommendation Q.2963.1 (1996), 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 Structure and Test Purposes (TSS&TP) specification for the network";

Part 6:   "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network".

National transposition dates	
Date of adoption of this EN:	26 November 1999
Date of latest announcement of this EN (doa):	29 February 2000
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 August 2000
Date of withdrawal of any conflicting National Standard (dow):	31 August 2000

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 [11]) of implementations conforming to the standards for the signalling user-network layer 3 specification for Peak cell rate modification by the connection owner of the Digital Subscriber Signalling System No. two (DSS2) protocol for the pan-European Broadband Integrated Services Digital Network (B-ISDN), EN 301 003-1 [1].

A further part of the present document 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 301 003-1 [1].

2 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.

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

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

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- 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] EN 301 003-1 (V1.1): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Connection characteristics; Peak cell rate modification by the connection owner; Part 1: Protocol specification [ITU-T Recommendation Q.2963.1 (1996), modified]".

[2] EN 301 003-2 (V1.1): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Connection characteristics; Peak cell rate modification by the connection owner; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".

[3] EN 301 003-5 (V1.1): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Connection characteristics; Peak cell rate modification by the connection owner; Part 5: Test Suite Structure and Test Purposes (TSS&TP) specification for the network".

[4] 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]".

[5] EN 300 443-2: "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".

[6] ISO/IEC 9646-1 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

[7] ISO/IEC 9646-2 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".

[8]   ISO/IEC 9646-3 (1998): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".

[9]   ISO/IEC 9646-4 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 4: Test realization".

[10]   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".

[11]   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 definitions apply, in addition to those given in EN 301 003-1 [1] and EN 300 443-1 [4].

3.1.1   Definitions related to conformance testing

abstract test case: refer to ISO/IEC 9646-1 [6]

Abstract Test Method (ATM): refer to ISO/IEC 9646-1 [6]

Abstract Test Suite (ATS): refer to ISO/IEC 9646-1 [6]

Implementation Under Test (IUT): refer to ISO/IEC 9646-1 [6]

System Under Test (SUT): see ISO/IEC 9646-1 [6]

Upper Tester (UT): see ISO/IEC 9646-1 [6]

lower tester: refer to ISO/IEC 9646-1 [6]

Protocol Implementation Conformance Statement (PICS): refer to ISO/IEC 9646-1 [6]

PICS proforma: refer to ISO/IEC 9646-1 [6]

Protocol Implementation eXtra Information for Testing (PIXIT): refer to ISO/IEC 9646-1 [6]

PIXIT proforma: refer to ISO/IEC 9646-1 [6]

Test Purpose (TP): refer to ISO/IEC 9646-1 [6]

Point of Control and Observation (PCO): see ISO/IEC 9646-1 [6]

3.1.2   Definitions related to EN 301 003-1

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:

ATM	Abstract Test Method
ATS	Abstract Test Suite
B-ISDN	Broadband Integrated Services Digital Network
CM	Coordination Messages
DSS2	Digital Subscriber Signalling System No. two
ExTS	Executable Test Suite
IUT	Implementation Under Test
LT	Lower Tester
MOT	Means Of Testing
MTC	Main Test Component
PCO	Point of Control and Observation
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
PTC	Parallel Test Components
SUT	System Under Test
TP	Test Purpose
TSS	Test Suite Structure
TTCN	Tree and Tabular Combined Notation
UT	Upper Tester
VCI	Virtual Channel Identifier
VPCI	Virtual Path Connection Identifier

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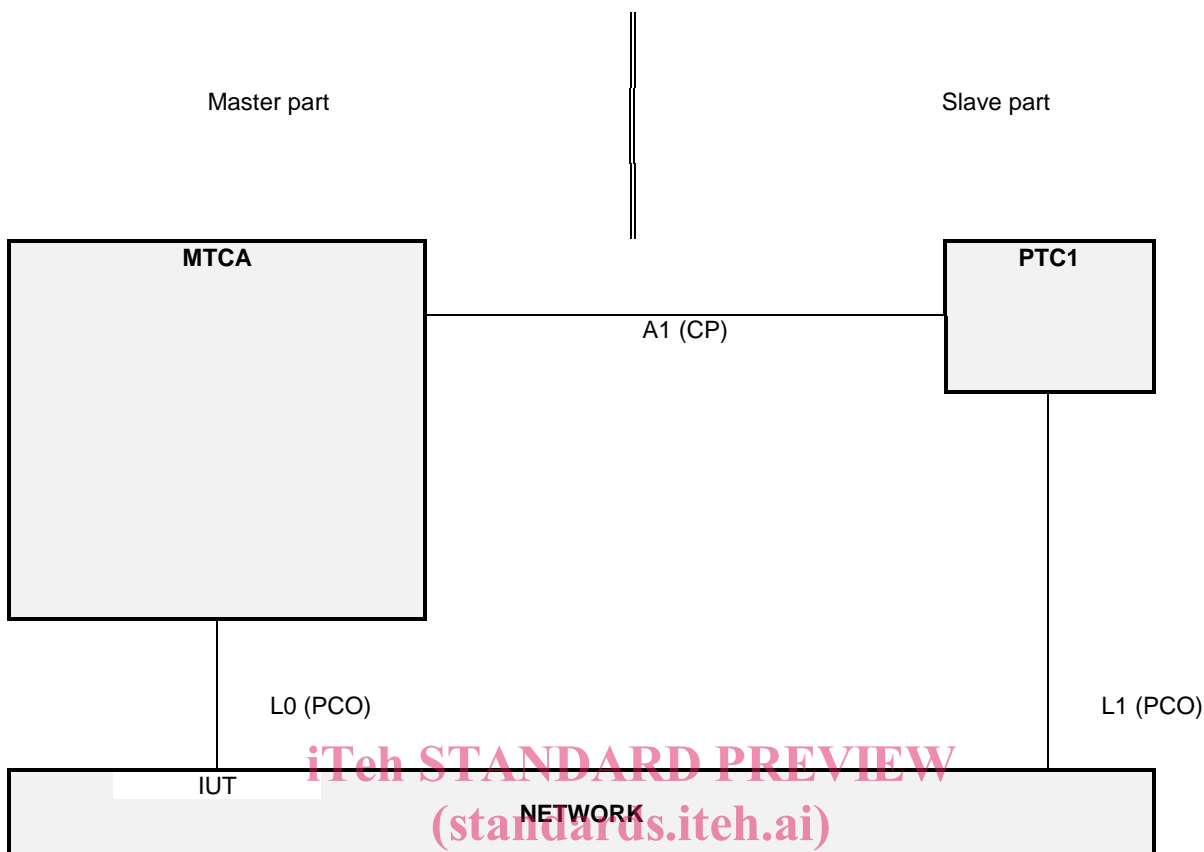# 4 Abstract Test Method (ATM)

4.1 Description of ATM used

The requirement for testing the network IUT is to focus on the behaviour of the network IUT at the user-network interface where a T_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

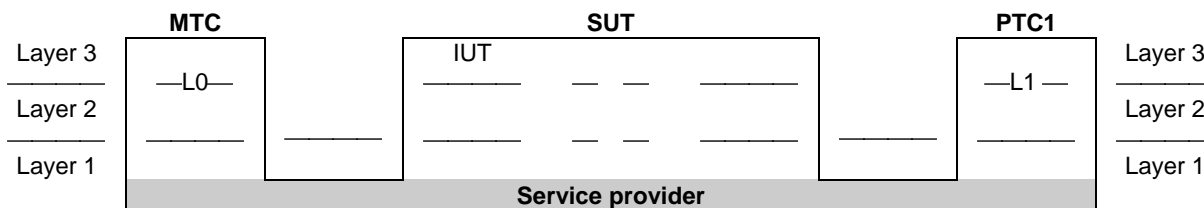Master part   Slave part

MTCA

PTC1

A1 (CP)

L0 (PCO)

L1 (PCO)

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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 coordinates activities by exchanging Coordination 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.

MTC   SUT   PTC1

Layer 3   IUT   Layer 3

—L0—   —L1 —

Layer 2   Layer 2

Layer 1   Layer 1

Service provider

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