SLOVENSKI STANDARD
SIST EN 300 267-6 V1.2.6:2005

01-april-2005

Digitalno omrežje z integriranimi storitvami (ISDN) - Daljinske storitve: telefonija 7 kHz, videotelefonija, avdiografiļ na konferenca in videokonferenca - Protokol digitalne naroļ niġke signalizacije ġt. 1 (DSS1) - 6. del: Abstraktni preskuġalni niz (ATS) in dodatna informacija za preskuġanje delne izvedbe protokola (PIXIT) - Proforma specifikacija za omrežje

Integrated Services Digital Network (ISDN); Telephony 7 kHz, videotelephony, audiographic conference and videoconference teleservices; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 6: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network

Ta slovenski standard je istoveten z: **EN 300 267-6 Version 1.2.6**

ICS:

33.080	Digitalno omrežje z integriranimi storitvami (ISDN)	Integrated Services Digital Network (ISDN)

SIST EN 300 267-6 V1.2.6:2005 **en**

ETSI EN 300 267-6 V1.2.6 (2000-06)

European Standard (Telecommunications series)

Integrated Services Digital Network (ISDN); Telephony 7 kHz, videotelephony, audiographic conference and videoconference teleservices; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 6: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network

Reference
REN/SPS-05112-6

Keywords
Audio, ISDN, DSS1, teleservice, 7 kHz, video, telephony, ATS, PIXIT, network

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Sous-Préfecture de Grasse (06) N° 7803/88

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Foreword

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

The present document is part 6 of a multi-part EN covering the Digital Subscriber Signalling System No. one (DSS1) protocol specification for the Integrated Services Digital Network (ISDN) telephony 7 kHz, videotelephony, audiographic conference and videoconference teleservices, as described below:

Part 1: "Protocol specification";

Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";

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

Part 4: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the user";

Part 5: "Test Suite Structure and Test Purposes (TSS&TP) specification for the network";

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

National transposition dates	
Date of adoption of this EN:	26 May 2000
Date of latest announcement of this EN (doa):	31 August 2000
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	28 February 2001
Date of withdrawal of any conflicting National Standard (dow):	28 February 2001

1 Scope

The present document specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma for the Network side of the T reference point or coincident S and T reference point (as defined in ITU-T Recommendation I.411 [13]) of implementations conforming to the stage three standard of the telephony 7 kHz and videotelephony teleservices for the pan-European Integrated Services Digital Network (ISDN) by means of the Digital Subscriber Signalling System No. one (DSS1) protocol, EN 300 267-1 [2].

EN 300 267-5 [4] specifies the Test Suite Structure and Test Purposes (TSS&TP) related to this ATS and partial PIXIT proforma specification. Other parts specify the TSS&TP and the ATS and partial PIXIT proforma for the User side of the T reference point or coincident S and T reference point of implementations conforming to EN 300 267-1 [2].

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.

[1] ETSI EN 300 196-1 (V1.2): "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[2] ETSI EN 300 267-1 (V1.2): "Integrated Services Digital Network (ISDN); Telephony 7 kHz, videotelephony, audiographic conference and videoconference teleservices; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[3] ETSI EN 300 267-2 (V1.2): "Integrated Services Digital Network (ISDN); Telephony 7 kHz, videotelephony, audiographic conference and videoconference teleservices; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".

[4] ETSI EN 300 267-5 (V1.2): "Integrated Services Digital Network (ISDN); Telephony 7 kHz, videotelephony, audiographic conference and videoconference teleservices; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 5: Test Suite Structure and Test Purposes (TSS&TP) specification for the network".

[5] ETSI EN 300 403-1 (V1.2): "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]".

[6] ETSI EN 300 403-3 (V1.2): "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 3: Protocol Implementation Conformance Statement (PICS) proforma specification".

[7] ETSI EN 300 403-7: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 7: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network".

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

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

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

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

[12] 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".

[13] ITU-T Recommendation I.411 (1993): "ISDN user-network interfaces; Reference configurations".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in EN 300 267-1 [2] and ISO/IEC 9646 parts 1 [8] to 5 [12] apply.

3.2 Abbreviations

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

ASP	Abstract Service Primitive
ATM	Abstract Test Method
ATS	Abstract Test Suite
CM	Co-ordination Message
CP	Co-ordination Point
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
PCTR	Protocol Conformance Test Report
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
PTC	Parallel Test Component
SUT	System Under Test
TP	Test Purpose
TSS	Test Suite Structure
TTCN	Tree and Tabular Combined Notation
UT	Upper Tester

4 Introduction

Implementations Under Test (IUTs) which are to be tested using this ATS are required to have previously been tested for conformity against and passed the test suite for EN 300 403-1 [5].

Any messages or fields within messages which are introduced by EN 300 403-1 [5] are included in this ATS. Behaviours in test cases have been described in such a way to be able to take into account EN 300 403-1 [5] basic call standard. This ATS also takes into account messages defined for the supplementary services, in particular EN 300 196-1 [1]. When such messages are received, they are ignored by the ATS as this is not within the scope of the present document.

5 Abstract Test Method (ATM)

5.1 Description of ATM used

This ATS describes the testing specification of the protocol procedures and switching functions needed to support the videotelephony, audiographic conference, videoconference and telephony 7 kHz teleservices at T or coincident S and T reference points for the network.

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 reference point or coincident S and T reference point applies. Thus the IUT is the network DSS1 protocol entity at a particular user-network interface and 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 focused on one particular interface. Thus the test system is made up of one Main Test Component (MTC) and one or more Parallel Test Components (PTC), see figure 1.

5.2 Conventions for test components and PCOs

Figure 1 shows a logical view of the complete configuration of the MTC, PTCs, and PCOs. The Co-ordination Point (CP) relationships between the various components are also indicated. In a master/slave arrangement, MTC is considered to be the master while PTC1 and PTCT are the slaves. The "slave" testers are only an explicit description of how to deal with the "other" interfaces during the testing process, i.e. "how to make the IUT send the required message".

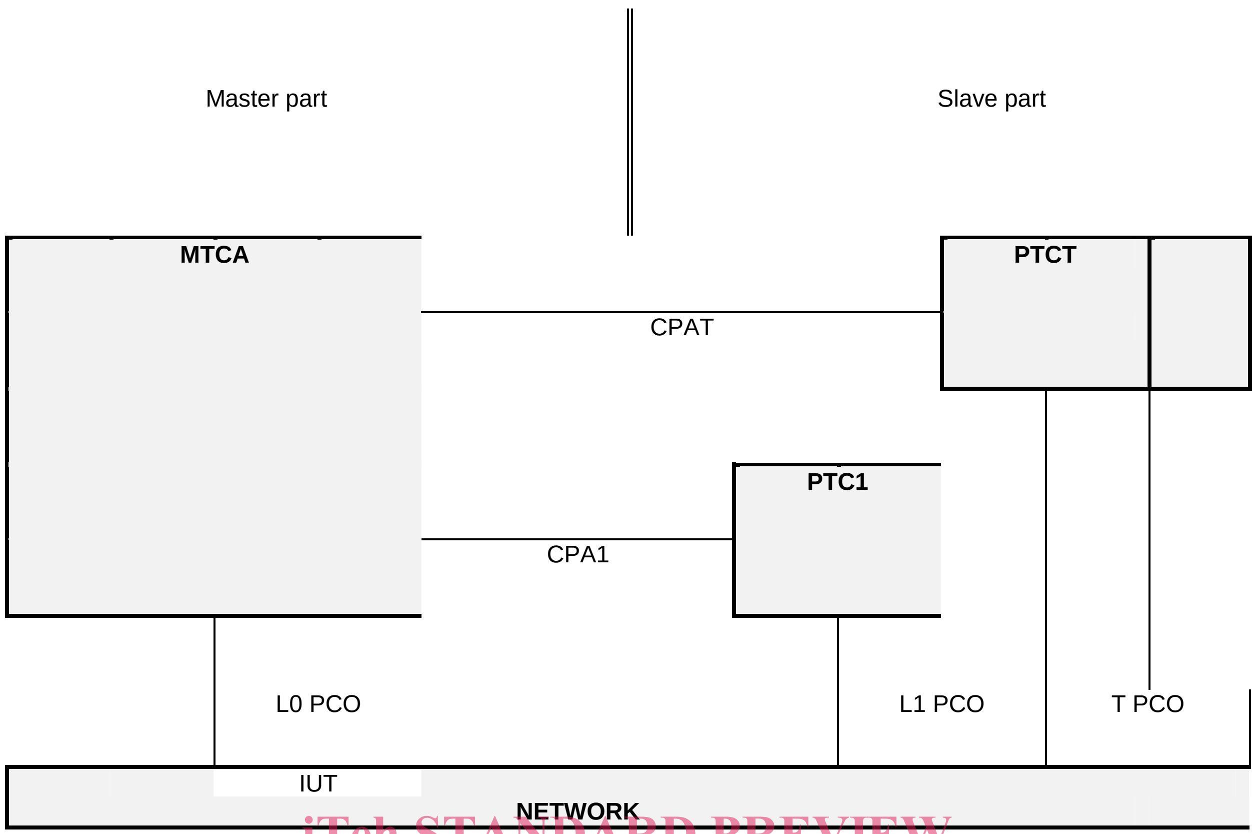

Figure 1: Multi-party test method

This means, in particular, that the verdict FAIL 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.

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 PTCs PTC1 and PTCT use PCOs L1 and T. These PCOs are used to control and, in a limited way, observe the behaviour of the network equipment at interfaces other than the one under test. No verdicts are assigned at these PCOs.

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

5.3 Description of PCOs

The PCOs are used to control and observe the behaviour of the IUT. Preliminary test case verdicts are assigned depending on the behaviour observed at those points. The final verdict is set by the MTC at the end of the test.

5.3.1 D-channel PCOs

For the D-channel, the PCOs reside at the service access point between layers 2 and 3. These PCOs are named "L0" and "L1". The same Abstract Service Primitives (ASPs) as defined in EN 300 403-7 [13] are used.

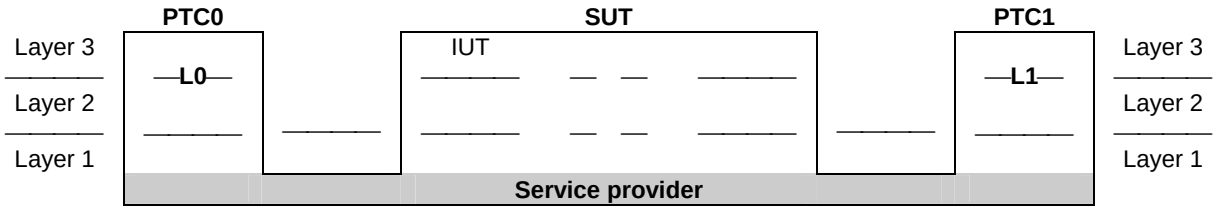

Figure 2: Combination of the remote and multi-party test methods without interworking with PSTN

5.3.2 PSTN PCO

For tests involving the PSTN, the PCOs used are L0 and T. L0 is at the same location as in figure 2 and T is located at the upper tester at the access point between the test operator and the IUT.

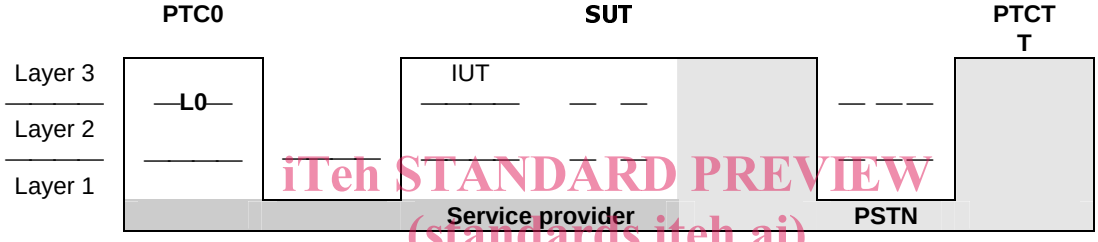

Figure 3: Combination of the remote and multi-party test methods with interworking with PSTN

5.4 Naming conventions

5.4.1 Test cases

The structure of test case identifier is as follows:

TTC<digit><digit>_<digit><digit>	test case covering a telephony 7 kHz requirement;
VTC<digit><digit>_<digit><digit>	test case covering a videotelephony requirement;
ATC<digit><digit>_<digit><digit>	test case covering an audiographic conference requirement;
CTC<digit><digit>_<digit><digit>	test case covering a videoconference requirement.

The digits corresponds to the digits of the Test Purpose (see EN 300 267-5 [4]) involved in the test case. The TPs are ordered:

a) by type of requirement (i.e. generic, telephony 7 kHz, videotelephony, audiographic conference or videoconference);

b) by a two digit number which specifies the relevant position in the Test Suite Structure (TSS):

- the first digit refers to the second test group level:

  1 for Originating interface (ORIG);

  2 for Destination interface (DEST).