SLOVENSKI STANDARD
SIST I-ETS 300 763-2 E1:2003

01-december-2003

Digitalno omrežje z integriranimi storitvami (ISDN) – Preskušanje znotrajpasovne signalizacije pri avdiovizualnih storitvah – 2. del: Abstraktni preskušalni niz (ATS) in dodatna informacija za preskušanje delne izvedbe protokola (PIXIT) – Proforma specifikacija

Integrated Services Digital Network (ISDN); Audiovisual services in-band signalling testing; Part 2: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification

Ta slovenski standard je istoveten z: **I-ETS 300 763-2 Edition 1**

ICS:

33.080	Digitalno omrežje z integriranimi storitvami (ISDN)	Integrated Services Digital Network (ISDN)
33.160.60	Več predstavni (multimedijski) sistemi in oprema za telekonference	Multimedia systems and teleconferencing equipment

SIST I-ETS 300 763-2 E1:2003 **en**

INTERIM EUROPEAN TELECOMMUNICATION STANDARD

I-ETS 300 763-2

November 1997

Source: MTA

Reference: DI/MTA-004120-2

Formerly: DI/TE-04120-2

ICS: 33.020

Key words: ATS, audio, inband, ISDN, PIXIT, testing, video

Integrated Services Digital Network (ISDN); Audiovisual services in-band signalling testing; Part 2: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification

ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address: F-06921 Sophia Antipolis CEDEX - FRANCE
Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE
X.400: c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

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

Contents

Foreword 5

1 Scope 7

2 Normative references 7

3 Definitions and abbreviations 8
3.1 Definitions 8
3.2 Abbreviations 8

4 Introductory notes 9
4.1 Multiparty testing method 9
4.1.1 Sequencing and control of test components 9
4.2 Diagram of test method and test components 10
4.3 Description of PCOs 10
4.3.1 Description of higher layer PCO - received events 10
4.3.2 Pseudo code description of PCO operation - received events 11
4.3.3 Description of higher layer PCO operation - transmitted events 11
4.4 Naming convention 12
4.5 Audio and video signal content and coding 12
4.6 Description of D-channel activity 13

5 Test Suite Structure 13
5.1 Test Suite Structure - listing of test groups 13
5.2 Test Suite Structure - diagram 15

Annex A (normative): Partial PIXIT proforma 16

Annex B (normative): Abstract Test Suite in TTCN graphical form 17

B.1 The TTCN Graphical form (TTCN.GR) 17

B.2 The TTCN Machine Processable form (TTCN.MP) 17

Annex C (informative): Bibliography 18

History 19

Blank page

Foreword

This Interim European Telecommunication Standard (I-ETS) has been produced by the Terminal Equipment (TE) Technical Committee and approved by Multimedia Terminals and Applications (MTA) Project of the European Telecommunications Standards Institute (ETSI).

An ETSI standard may be given I-ETS status either because it is regarded as a provisional solution ahead of a more advanced standard, or because it is immature and requires a "trial period". The life of an I-ETS is limited to three years after which it can be converted into an ETS, have its life extended for a further two years, be replaced by a new version, or be withdrawn.

This is part 2 of a multipart standard covering "Integrated Services Digital Network (ISDN); Audiovisual services in-band signalling testing", as described below:

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

Part 2: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma";

Part 3: "Protocol Implementation Conformance Statement (PICS) proforma specification".

Proposed announcement date	
Date of adoption:	24 October 1997
Date of latest announcement of this I-ETS (doa):	28 February 1998

Blank page

1 Scope

This Interim European Telecommunication Standard (I-ETS) is part 2 of a three part I-ETS dealing with conformance testing of Integrated Services Digital Network (ISDN) Videotelephony terminals. Part 1 contains the Test Suite Structure and Test Purposes (TSS & TP) and part 3 contains the Protocol Implementation Conformance Statement (PICS) proforma.

This I-ETS contains the Abstract Test Suite (ATS) for conformance testing the in-band signalling aspects of an ISDN Videotelephony terminal which uses one or two B-channels, and which implements the frame structure and associated syntax as specified in ETS 300 144 [2] and the in-band signalling procedures as specified in ETS 300 143 [1]. A partial Protocol Implementation eXtra Information for Testing (PIXIT) Proforma is also included in this I-ETS. No testing of data commands or applications is included among the tests. Test purposes for signal content of the B-channel are included in part 2 of the I-ETS but no corresponding test cases have been included. Restricted network operation is outside the scope of this I-ETS.

It may be possible to use this ATS in order to test a non-ISDN Videotelephony terminal, providing it provides one or two 64 kbit/s digital channels for transmission. It may also be possible to use the majority of these test purposes to test in-band signalling implementations according to ETS 300 143 [1] and ETS 300 144 [2] using single or multiple channels up to 1 920 kbit/s.

2 Normative references

This I-ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this I-ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] ETS 300 143 (1994): "Integrated Services Digital Network (ISDN); Audiovisual services Inband signalling procedures for audiovisual terminals using digital channels up to 2 048 kbit/s".

[2] ETS 300 144 (1996): "Integrated Services Digital Network (ISDN); Audiovisual services; Frame structure for a 64 kbit/s to 1 920 kbit/s channel and associated syntax for inband signalling".

[3] Reserved.

[4] ISO/IEC 9646 Parts 1 to 7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework".

[5] CCITT Recommendation G.711 (1988): "Pulse code modulation (PCM) of voice frequencies".

[6] CCITT Recommendation G.722 (1988): "7 KHz audio-coding within 64 kbit/s".

[7] Reserved.

[8] Reserved.

[9] ITU-T Recommendation H.261 (1993): "Video codec for audiovisual services at p x 64 kbit/s".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this I-ETS, the following definitions apply:

NOTE: In addition to the definitions shown in this subclause, the definitions in ISO/IEC 9646 [4] also apply.

additional channel: The second or subsequent channels established in a videophone call.

bit-rate allocation signal: Bit position within the frame structure to transmit commands, control and indication signals, capabilities.

capability marker; cap marker: The first code in a capability set.

capability set; cap set: A sequence of capability codes started by the capability marker code.

ECS channel: Optional 800 kbit/s channel for use in encryption.

initial channel: The first channel established in a videophone call.

mode 0F: Transmission mode in which the initial channel contains framing, and 7-bit CCITT Recommendation G.711 [5] audio signal is being transmitted.

mode 0U: Transmission mode in which the initial channel does not contain framing, and 8-bit CCITT Recommendation G.711 [5] audio signal is being transmitted.

remote terminal: The terminal with which the Implementation Under Test (IUT) is communicating, i.e. the test tool.

3.2 Abbreviations

For the purposes of this I-ETS, the following abbreviations apply:

ASP	Abstract Service Primitive
ATS	Abstract Test Suite
BAS	Bit rate Allocation Signal
C&I	Control and Indication
cap	capability
CIF	Common Intermediate Format (picture format defined in ITU-T Recommendation H.261 [9])
CP	Coordination Point
CRC	Cyclic Redundancy Check
CTP	Combined Test Purpose
ECS	Encryption Control Signal
FAS	Frame Alignment Signal
ISDN	Integrated Services Digital Network
IUT	Implementation Under Test
LCO	Loopback Command "Loop off request"
LSD	Low Speed data
MBE	Multiple Byte Extension
MCU	Multipoint Conference Unit
MLP	Multi Layer Protocol
MPI	Minimum Picture Interval
MTC	Master 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 Component

QCIF	Quarter Common Intermidiate Format (picture format defined in ITU-T Recommendation H.261 [9])
SBE	Single Byte Extension
SC	Service Channel
TP	Test Purpose(s)
TSS	Test Suite Structure
TTCN	Tree & Tabular Combined Notation

4 Introductory notes

This second part of the multipart I-ETS contains the Abstract Test Suite (ATS) used in conformance testing of Videotelephony in-band signalling procedures. The corresponding test purposes are defined in part 1. The test cases are derived from the combined test purposes found in clauses 9 and 10 of part 1. A PICS proforma, part 3 of this I-ETS, and a partial PIXIT proforma, an annex to this part 2, are referred to by the ATS.

4.1 Multiparty testing method

This abstract test suite describes the testing specifications for testing in-band signalling in ISDN Videotelephony terminals using one or two B-channels. Testing activity will take place on the D-channel (for call control) and on one or both B-channels. Consequently, a multiparty, or concurrent testing method is necessary.

The test method employed makes use of a Master Test Component (MTC), or controller, and three Parallel Test Components (PTCs), or slaves: one each for the D-channel and the two B-channels. No actual testing is performed by the MTC, as all Points of Control and Observation (PCO) are on the PTCs. Each PTC uses a remote test method in its testing, as described in ISO/IEC 9646 [4].

4.1.1 Sequencing and control of test components

There are communication paths between the MTC and each PTC, and also between the two B-channel PTCs, for transmission of co-ordination messages during test execution. The MTC handles all scheduling of test components, with the three PTCs running largely independent of each other. There is therefore a minimal need for co-ordination messages to be passed between the PTCs and the MTC during a test case. In a real implementation of this ATS, it may not be possible to have four individual test scripts running on a test tool; it may therefore be necessary to combine the functions of the MTC and the D-channel PTC. This should be possible, if some care is taken. Likewise, the actual co-ordination message contents and the control structure may need to be changed according to test tool implementation. The final control structure used should not, however, change the sequence of test events specified in these abstract test cases.

The sequence of events at the start of testing the majority of test cases on one B-channel is as follows:

- all test components start simultaneously;
- B-channel and D-channel test components wait for co-ordination message from MTC;
- MTC sends message to D-channel requesting it to initiate a call;
- D-channel sends message to MTC when B-channel is established and waits for next message;
- MTC sends message to B-channel to cause it to start the test activity;
- MTC waits until B-channel test component has finished executing or a long timer has timed out (B-channel has crashed);
- MTC sends message to D-channel to request clearing of B-channel;
- MTC waits until D-channel test script has finished.

As can be seen, most of the test cases are started with the B-channels being initiated by the test tool, not the Implementation Under Test (IUT).