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SLOVENSKI STANDARD
SIST EN 301 145-7:2001

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Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol;Teleaction service; Part 7: Test Suite Structure and Test Purposes (TSS&TP) specification for the Teleaction Management Function (TMF)

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Foreword

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

The present document is part 7 of a multi-part standard covering the Digital Subscriber Signalling System No. one (DSS1) protocol specification for the Integrated Services Digital Network (ISDN) Teleaction service, 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 End User Terminal (EUT)";

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

Part 5: "Test Suite Structure and Test Purposes (TSS&TP) specification for the Service Provider Terminal (SPT)";

Part 6: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the Service Provider Terminal (SPT)";

Part 7: "Test Suite Structure and Test Purposes (TSS&TP) specification for the Teleaction Management Function (TMF)";

Part 8: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the Teleaction Management Function (TMF)".

National transposition dates	
Date of adoption of this EN:	29 October 1999
Date of latest announcement of this EN (doa):	31 January 2000
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Date of withdrawal of any conflicting National Standard (dow):	31 July 2000

1   Scope

The present document specifies the Test Suite Structure and Test Purposes (TSS&TP) for the Teleaction management Function (TMF) of the T reference point or coincident S and T reference point (as defined in ITU-T Recommendation I.411 [7]) of implementations conforming to the stage three standard for the Teleaction service for the pan-European Integrated Services Digital Network (ISDN) by means of the Digital Subscriber Signalling System No. one (DSS1) protocol, EN 301 145-1 [1].

Test Purposes described in this specification do not apply to Data Link establishment and Disconnection procedures contained in ETS 300 402-2 [3] or semi-permanent B channels in-band procedures in accordance with ETS 300 099 [4].

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.

Other parts specify the TSS&TP and the ATS and partial PIXIT proforma for the End User Terminal (EUT) and the Service provider Terminal (SPT) of the T reference point or coincident S and T reference point of implementations conforming to EN 301 145-1 [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.

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- For a specific reference, subsequent revisions do not apply. (standards.iteh.ai)

- 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 301 145-1 (V1.1): "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Teleaction service; Part 1: Protocol specification".

[2]   EN 301 145-2 (V1.1): "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Teleaction service; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".

[3]   ETS 300 402-2: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Data link layer; Part 2: General protocol specification [IUT-T Recommendation Q.921 (1993) modified]".

[4]   ETS 300 099: "Integrated Services Digital Network (ISDN); Specification of the Packet Handler access point Interface (PHI)".

[5]   ITU-T Recommendation I.112 (1993): "Vocabulary and terms for ISDNs".

[6]   ITU-T Recommendation I.210 (1993): "Principles of the telecommunication services supported by an ISDN and the means to describe them".

[7]   ITU-T Recommendation I.411 (1993): "ISDN user-network interfaces - reference configurations".

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

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

[10]   EN 301 131 (V1.1): "Integrated Services Digital Network (ISDN); Teleaction teleservice; Service description".

3   Definitions and abbreviations

3.1   Definitions

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

3.1.1   Definitions related to conformance testing

abstract test suite: refer to ISO/IEC 9646-1 [8].

implementation under test: refer to ISO/IEC 9646-1 [8].

Protocol Implementation Conformance Statement (PICS): refer to ISO/IEC 9646-1 [8].

PICS proforma: refer to ISO/IEC 9646-1 [8].

Protocol Implementation eXtra Information for Testing (PIXIT): refer to ISO/IEC 9646-1 [8].

PIXIT proforma: refer to ISO/IEC 9646-1 [8].

test purpose: refer to ISO/IEC 9646-1 [8].

3.1.2   Definitions related to EN 301 145-1

Bd channel: 64 kbit/s timeslot over which multiple D channel connections are multiplexed using the procedures of ETS 300 099 [4], clause 9.

Bearer Service: see ITU-T Recommendation I.112 [5], definition 202.

End User (EU): entity to whom a teleaction application service is provided or who is affected by that application service.

End User Terminal (EUT): device (or location of a device) that, depending on the application (e.g. by monitoring of subdevices):

-      on the basis of local conditions or by interrogation, generates information and presents this information for transmission by the network to a service provider (SP);

-      receives information from a SP in order to affect local conditions;

-      upon polling requests, received from a Teleaction Management Function (TMF), executes the requested local actions (e.g. authorization, functionality checks, etc.) and sends appropriate response to the TMF.

EU access capability: telecommunication means used between an EUT and a TMF (e.g. ISDN bearer service, dedicated connection, etc.).

Integrated Services Digital Network (ISDN): see ITU-T Recommendation I.112 [5], definition 308.

network: DSS1 protocol entity at the Network side of the user-network interface where a T reference point or coincident S and T reference point applies.

Service Provider (SP): entity which, by using one or more TMFs, provides a teleaction application service to one or more EUTs.

NOTE: The SP may be the Basic Network Provider (BNP), the TMFP, or another organization responsible for one or more SPTs.

Service Provider Terminal (SPT): device (or location of such a device) which, depending on the application:

- receives information from one or more EUTs for handling and processing in accordance with the application service offered by the SPT;

- generates control messages and information requests and presents that information for transmission for one or more EUTs;

- monitors EUTs on the network, either by retrieving EUT status information stored in TMFs, and/or by receiving status information automatically from the TMFs (e.g. alarms);

- receives polling requests from TMFs and sends appropriate response to the TMF. Execution of local procedures such as authorization and functionality check are outside the scope of the specification [1];

- transfers to the TMF information to be broadcasted to the EUTs, if the broadcast functionality is supported by the TMF.

SPT access capability: telecommunication means used between a SPT and a TMF (e.g. ISDN Bearer service, dedicated connection, etc.).

service; telecommunication service: see ITU-T Recommendation I.112 [5], subclause 2.2, definition 201.

supplementary service: see ITU-T Recommendation I.210 [6] subclause 2.4.

teleaction application: one specific end-to-end application offered by a service provider using the teleaction service.

teleaction service: teleaction service is the transport mechanism used by a teleaction application.

teleservice: see ITU-T Recommendation I.112 [5], subclause 2.2, definition 203.

Teleaction Management Function (TMF): set of network functions added to either the public ISDN or assigned to a separate public, or private, network entity. The tasks of the TMF are:

- to ensure reliable communication paths between the EUTs and the SPT, i.e. to ensure available and secure access for the EUTs to the network and communication paths for the SPT in the ISDN, respectively;

- authorization of connected EUTs/SPTs;

- EUT/SPT functionality check;

- to address the appropriate EUT/SPT for transfer of information generated by SPT/EUT;

- as a TMFP option, to broadcast appropriate EUTs for transfer of information generated by a SPT.

Teleaction Management Function Provider (TMFP): entity responsible for the installation and maintenance of one or more of the TMFs. A TMFP may be the same as BNP.

user: DSS1 Protocol entity at the user side of the user-network interface.

3.2 Abbreviations

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

ATM	Abstract Test Method
ATS	Abstract Test Suite
BNP	Basic Network Provider
CRF	Connection Related Function
DLCI	Data Link Connection Identifier
DSS1	Digital Subscriber Signalling System No. one
EUT	End User Terminal
FH	Frame Handler
ISDN	Integrated Services Digital Network
IUT	Implementation under test
LAPD	Link Access Procedure for the D-Channel
NT2	Network Termination type 2
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
PTN	Private Telecommunication Network
SAPI	Service Access Point Identifier
SPT	Service provider Terminal
TA	Terminal Adapter
TE1	Terminal Equipment type 1
TMF	Teleaction Management Function
TMFP	Teleaction Management Function Provider
TP	Test Purpose
TSS	Test Suite Structure

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4 Test Suite Structure (TSS)

Clauses/Subclauses	Group
Procedures at the coincident S and T reference point (clause 9)	
- Data link establishment at EU/SP interface (subclause 9.1)	
- Normal procedures (subclause 9.1.1)	00
- Exceptional procedures (subclause 9.1.2)	01
- Data link disconnection at EU/SP interface (subclause 9.2)	
- Normal procedures (subclause 9.2.1)	02
- Exceptional procedures (subclause 9.2.2)	03
- Error procedures (subclause 9.3)	04
Maintenance, polling and broadcast procedures (clause 13)	
- Procedures (subclause 13.2)	
- Loop procedure (subclause 13.2.2)	05
- Alarm reporting procedures (subclause 13.2.3)	06
- Alarm clearance (subclause 13.2.4)	07
- Broadcast procedures (subclause 13.3)	08
- Status request procedure (subclause 13.4)	09

5 Test Purposes (TP)

TPs are numbered, starting at 001, within each group. Groups are organized according to the TSS. Additional references are added to identify the actual service and whether it applies to the EUT, the SPT or the TMF (see table 1).

5.1 Introduction

For each test requirement a TP is defined.

Table 1: TP naming convention scheme

Identifier: **<service>_<iut group>_<nnn>**		
<service> =	basic service:	e.g. "TELEACTION"
<iut> =	type of IUT:	E End User Terminal
		S Service Provider Terminal
		T Teleaction Management Function
<group> =	group	2 digit field representing group reference according to TSS
<nnn> =	sequential number	(001-999)

5.1.1 Void

5.1.2 Source of TP definition

The TPs are based on EN 301 145-1 [1].

5.1.3 TP structure

Each TP has been written in a manner which is consistent with all other TPs. The intention of this is to make the TPs more readable and checkable. A particular structure has been used and this is illustrated in table 2. This table should be read in conjunction with any TP, i.e. use a TP as an example to fully understand the table.