



# SLOVENSKI STANDARD

## SIST ETS 300 804-1 E1:2005

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**Zasebno omrežje z integriranimi storitvami (PISN) - Medcentralni signalizacijski protokol - Vodovne osnovne storitve - Podatkovna povezovalna plast (DLL) - 1. del: Zgradba preskušalnega niza in nameni preskušanja (TSS&TP) - Specifikacija**

Private Integrated Services Network (PISN); Inter-exchange signalling protocol; Circuit mode basic services; Data Link Layer (DLL); Part 1: Test Suite Structure and Test Purposes (TSS&TP) specification

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**Private Integrated Services Network (PISN);  
Inter-exchange signalling protocol;  
Circuit mode basic services;**

**Data Link Layer (DLL);**

**Part 1: Test Suite Structure and Test Purposes (TSS&TP)**

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## Foreword

This European Telecommunication Standard (ETS) has been produced by the standardizing Information and Communication Systems Association (ECMA) on behalf of its members and those of the European Telecommunications Standards Institute (ETSI).

This ETS comprises two parts with the generic title "Private Integrated Services Network (PISN); Inter-exchange signalling protocol; Data Link Layer (DLL); Circuit mode basic services". The title of each part is listed below:

**Part 1: "Test Suite Structure and Test Purposes (TSS & TPs)";**

Part 2: "Abstract Test Suite Specification (ATS)".

Transposition dates	
Date of adoption of this ETS:	23 January 1998
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Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	30 November 1998
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## 1 Scope

This European Telecommunication Standard (ETS) contains the Test Suite Structure (TSS) and Test Purposes (TPs) specification for the Data Link Layer (DLL) of the Private Integrated Services Network (PISN), Inter-exchange signalling protocol.

The objective of this TSS and TPs specification is to provide conformance tests which give a high probability of inter-operability of the Data Link Layer (DLL). The TSS and TPs specification covers the procedures described in ETS 300 402-2 [1] annex ZA.

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [3] and ISO/IEC 9646-2 [4]) is used as basis for the test methodology.

This TSS and TPs specification standard is applicable for use in symmetrical application between two PINXs and is also applicable to equipment when used in certain scenarios that provide a continuous bit stream channel between two PINXs, and will be referenced from the standard which specifies the scenarios concerned.

TSS and TPs specifications for the Network Layer are provided in other parts of the PISN, Inter-exchange signalling protocol standards.

## 2 Normative references

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

- [1] ETS 300 402-2 (1995): "Integrated Services Digital Network (ISDN) - Digital Subscriber Signalling System No. one (DSS1) protocol - Data link layer - Part 2: General protocol specification - [ITU-T Recommendation Q.921 (1993), modified]".  
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- [2] ETS 300 402-4: "Integrated Services Digital Network (ISDN) - Digital Subscriber Signalling System No. one (DSS1) protocol - Data link layer - Part 4 "Protocol Information Conformance".
- [3] ISO/IEC 9646-1 (1994): "Information Technology - OSI Conformance Testing Methodology and Framework, Part 1: General Concepts".
- [4] ISO/IEC 9646-2 (1994): "Information Technology - OSI Conformance Testing Methodology and Framework, Part 2: Abstract Test Suite Specification".
- [5] ISO/IEC 7498-1 (1994): "Information Processing Systems - Open Systems Interconnection - Basic Reference model: The basic model".

## 3 Definitions and abbreviations

### 3.1 ETS definitions

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

**master:** The Data Link entity that provides the functionality of the "network" as described in ETS 300 402-2 [1] for a particular Data Link.

**slave:** The Data Link entity that provides the functionality of the "user" as described in ETS 300 402-2 [1] for a particular Data Link.

### 3.2 ISO definitions

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

<b>Abstract Test Suite (ATS):</b>	See ISO/IEC 9646-1 [3]
<b>Data Link Layer (DLL):</b>	See ISO/IEC 7498-1 [5]
<b>Implementation Under Test (IUT):</b>	See ISO/IEC 9646-1 [3]
<b>Lower Tester (LT):</b>	See ISO/IEC 9646-1 [3]
<b>Network Layer (NWK):</b>	See ISO/IEC 7498-1 [5]
<b>Physical Layer (PHL):</b>	See ISO/IEC 7498-1 [5]
<b>PICS proforma:</b>	See ISO/IEC 9646-1 [3]
<b>PIXIT proforma:</b>	See ISO/IEC 9646-1 [3]
<b>Point of Control and Observation (PCO):</b>	See ISO/IEC 9646-1 [3]
<b>Protocol Implementation Conformance Statement (PICS):</b>	See ISO/IEC 9646-1 [3]
<b>Protocol Implementation eXtra Information for Testing (PIXIT):</b>	See ISO/IEC 9646-1 [3]
<b>System Under Test (SUT):</b>	See ISO/IEC 9646-1 [3]
<b>Upper Tester (UT):</b>	See ISO/IEC 9646-1 [3]

### 3.3 Abbreviations

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

ATS	Abstract Test Suite
BI	Invalid Behaviour
BO	Inopportune Behaviour
BV	Valid Behaviour
DLL	Data Link Layer
ETS	European Telecommunication Standard
FSM	Finite State Machine
ISO	International Organisation for Standardisation
IUT	Implementation Under Test
LT	Lower Tester
MST	Multi State Transition
NL	Network Layer
PCO	Point of Control and Observation
PDU	Protocol Data Unit
PHL	Physical Layer
PICS	Protocol Implementation Conformance Statements
PIXIT	Protocol Implementation eXtra Information for Testing
PISN	Private Integrated Services Network
PINX	Private Integrated services Network eXchange
SUT	System Under Test
TP	Test Purpose
TSS	Test Suite Structure
UT	Upper Tester

## 4 Test Suite Structure (TSS)

### 4.1 Overview

Figure 1 shows the Data Link Layer Test Suite Structure including its subgroups Valid Behaviour (BV), Inopportune Behaviour (BO) and Invalid Behaviour (BI).

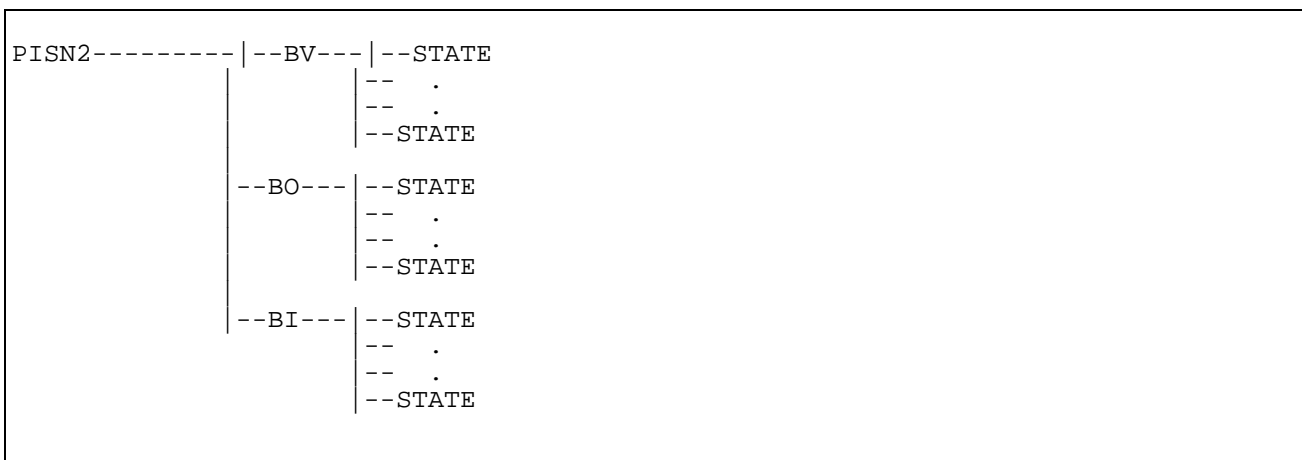


Figure 1: Data Link Layer Test Suite Structure

### 4.2 Test groups

#### 4.2.1 Protocol group

The test suite is structured as a tree with a first level defined as PISN2 representing the protocol group.

#### 4.2.2 Main test groups

The second level of the test suite contains the subgroups BV, BO and BI.

##### 4.2.2.1 Valid Behaviour Tests (BV)

A valid test is a test where the message sequence and the message content are considered as valid (no MDL\_ERR\_IND shall be indicated).

##### 4.2.2.2 Inopportune Behaviour Tests (BO)

This test sub group shall verify that the Implimentation Under Test (IUT) is capable of a valid reaction, when an inopportune protocol event occurs. Such an event is syntactically correct but it occurs when it is not expected (a MDL\_ERR\_IND is caused in the Finite State Machine (FSM) of the DLL entity).

##### 4.2.2.3 Invalid Behaviour Tests (BI)

This test sub group shall verify that the IUT, after receipt of an invalid Protocol Data Unit (PDU), reacts in conformity with the standard. PDU here, means syntactically invalid PDU and therefore a MDL\_ERR\_IND may be generated in the FSM of the DLL entity.

## 5 Test Purposes (TPs)

### 5.1 Introduction

#### 5.1.1 TP naming convention

The identifier of the TP is built according to figure 2.

Identifier:	<b>TP&lt;s&gt;&lt;ss&gt;-&lt;nnn&gt;</b>		
<s>	= state	(4-8)	
<ss>	= sub-state	(0-7)	
<nnn>	= sequential number	(001-300)	BV, Valid Behaviour Tests
		(301-600)	BO, Inopportune Behaviour Tests
		(601-900)	BI, Invalid Behaviour Tests

**Figure 2: TP naming convention**

#### 5.1.2 Source of TP definition

The TPs were developed based on ETS 300 402-2 [1], including the state tables D-1 to D-3.

NOTE: The state tables D-1 to D-3 of ETS 300 402-2 [1] have been interpreted according to ETS 300 402-2 [1] annex ZA.

The relevant part of ETS 300 402-4 [2] annex B specifying the Protocol Implementation Conformance Statements (PICS) proforma for the Private Integrated Services Network (PISN) application is used for the TP definition.

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