SLOVENSKI STANDARD
SIST ETS 300 805-2 E1:2005

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Zasebno omrežje z integriranimi storitvami (PISN) - Medcentralni signalizacijski protokol - Vodovne osnovne storitve - Omrežna plast (NL) - 2. del: Abstraktni preskušalni niz (ATS) - Specifikacija

Private Integrated Services Network (PISN); Inter-exchange signalling protocol; Circuit mode basic services; Network Layer (NL); Part 2: Abstract Test Suite (ATS) specification

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Foreword

This European Telecommunication Standard (ETS) has been produced by the standardizing Information and Communication Systems (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; Network Layer (NL); 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
Date of latest announcement of this ETS (doa):	31 May 1998
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1 Scope

This European Telecommunication Standard (ETS) contains the Abstract Test Suite (ATS) specification for the Network Layer (NL), Circuit Mode Basic Services (CMBS) of the Inter-exchange signalling protocol, for Private Integrated Services Networks (PISN).

The objective of this ATS specification is to provide conformance tests which give a high probability of inter-operability of the NL. The ATS specification covers the procedures described in ETS 300 172 [1].

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [3], ISO/IEC 9646-2 [4] and ISO/IEC 9646-3 [5]) is used as basis for the test methodology.

This ATS specification is applicable to implementations which support either a Basic Rate or a Primary Rate access interface, or both, operating over a leased line. It is applicable to various PINX roles, i.e. Originating, Terminating, Transit, Incoming/Outgoing Gateway.

Annex A provides the Partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma of this ETS.

Annex B provides the Protocol Conformance Test Report (PCTR) proforma of this ETS.

Annex C provides the Tree and Tabular Combined Notation (TTCN) part of this ETS.

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 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 300 172 (1995): "Private Integrated Services Network (PISN); Inter-Exchange Signalling protocol, Circuit Mode Basic Services".

[2] ETS 300 805-1 (1996): "Private Integrated Services Network (PISN); Inter-exchange signalling protocol; Circuit mode basic services; Network Layer (NL); Part 1: Test Suite Structure and Test Purposes (TSS&TP)".

[3] ISO/IEC 9646-1 (1994): "Information Technology - Open Systems Interconnection - Conformance Testing Methodology and Framework - Part 1: General Concepts".

[4] ISO/IEC 9646-2 (1994): "Information Technology - Open Systems Interconnection - Conformance Testing Methodology and Framework - Part 2: Abstract Test Suite Specification".

[5] ISO/IEC 9646-3 (1992): "Information Technology - Open Systems Interconnection - Conformance Testing Methodology and Framework -Part 3: The Tree and Tabular Combined Notation (TTCN)" including "Amendment 1 to ISO/IEC 9646-3:1992 TTCN extensions" (1996).

[6] ISO/IEC 9646-3 AM2 (1997): " Amendment 2 to ISO/IEC 9646-3:1992 Further extensions".

[7] ISO/IEC 9646-4 (1994): "Information Technology - Open Systems Interconnection - Conformance Testing Methodology and Framework, Part 4: Test Realization".

[8] 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".

3 Definitions and abbreviations

3.1 Definitions

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

Abstract Test Suite (ATS): See ISO/IEC 9646-1 [3].

final test purpose: See ETS 300 805-1 [2].

Implementation Under Test (IUT): See ISO/IEC 9646-1 [3].

incoming call: See ETS 300 172 [1].

incoming gateway PINX: See ETS 300 172 [1].

Lower Tester (LT): See ISO/IEC 9646-1 [3].

network layer: For the purposes of this ATS the procedures described in ETS 300 172 [1].

originating PINX: See ETS 300 172 [1].

outgoing call: See ETS 300 172 [1].

outgoing gateway PINX: See ETS 300 172 [1].

PICS proforma: See ISO/IEC 9646-1 [3].

PIXIT proforma: See ISO/IEC 9646-1 [3].

Point Of Control And Observation (PCO): See ISO/IEC 9646-1 [3].

preceding PINX: See ETS 300 172 [1].

Protocol Implementation Conformance Statement (PICS): See ISO/IEC 9646-1 [3].

Protocol Implementation Extra Information For Testing (PIXIT): See ISO/IEC 9646-1 [3].

segmentation: See ETS 300 805-1 [2].

Signalling Carriage Mechanism (SCM): See ETS 300 172 [1].

subsequent PINX: See ETS 300 172 [1].

super test purpose: See ETS 300 805-1 [2].

System Under Test (SUT): See ISO/IEC 9646-1 [3].

terminating PINX: See ETS 300 172 [1].

transit PINX: See ETS 300 172 [1].

Upper Tester (UT): See ISO/IEC 9646-1 [3].

3.2 Abbreviations

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

ASP	Abstract Service Primitive
ATM	Abstract Test Method

ATS	Abstract Test Suite
CC	Call Control
CM	Co-ordination Message
CMBS	Circuit Mode Basic Services
CP	Co-ordination Point
IUT	Implementation Under Test
LT	Lower Tester
MS	Message Segmentation
MTC	Master Test Component
NL	Network Layer
PC	Protocol Control
PCF	Protocol Control Function
PCO	Point of Control and Observation
PCTR	Protocol Conformance Test Report
PDF	Protocol Discriminator Filter
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
PINX	Private INtegrated services eXchange
PISN	Private Integrated Services Network
PIXIT	Protocol Implementation eXtra Information for Testing
PSS1	Private Integrated Signalling System Number 1
PTC	Parallel Test Component
SUT	System Under Test
TP	Test Purpose
TTCN	Tree and Tabular Combined Notation
UT	Upper Tester

4 Abstract Test Method (ATM)

This clause describes the different Abstract Test Methods (ATMs) used for testing the Network Layer (NL) protocol. Two methods are applied, the Remote single layer test method and the Multi-Party test method.

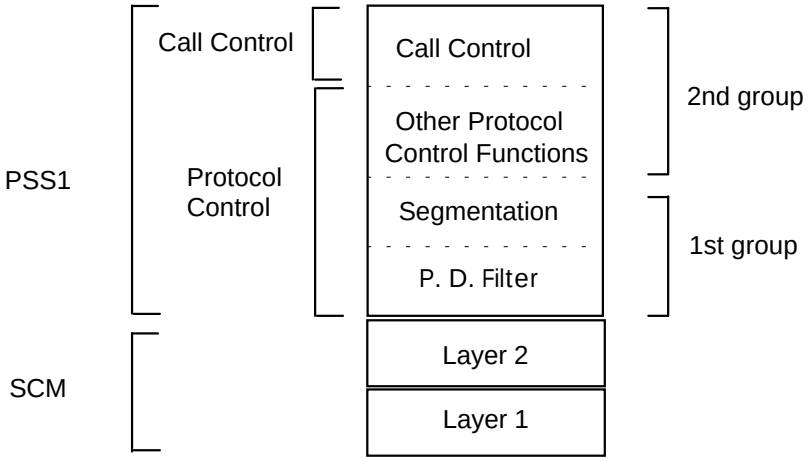
4.1 Choice of the ATM

4.1.1 Functional subsets

The choice of functional subsets is based primarily on the fact that Private Integrated signalling System Number One (PSS1) is subdivided into two functional entities: Call Control (CC) and Protocol Control (PC). Each of these two functional entities is tested using different sets of Test Purposes (TPs) and hence different test cases.

The PC entity is further divided into three sublayers: the Protocol Discriminator Filter (PDF) sublayer, the Message Segmentation sublayer and the other Protocol Control Functions (PCF) sublayer.

From the viewpoint of this ATS, PSS1 is considered to be divided into two functional subsets, as shown in figure 1. The first of these functional groups consists of the Protocol Discriminator Filter sublayer and the Message Segmentation sublayer. The second functional group consists of the other PCF sublayer and the CC entity. A different Point of Control and Observation (PCO) is used for each of these functional groups when being tested.



NOTE: In the remainder of clause 4, the term "Protocol Control" (PC) refers only to the "Other Protocol Control Functions" sublayer.

Figure 1: PSS1 functional subsets

4.1.2 Single- and Multi-party testing

For CC, the protocol defines different roles that a private integrated services exchange (PINX) can play: it can be an end or gateway PINX (Originating, Terminating, Incoming Gateway, Outgoing Gateway), or a Transit PINX. In the first case, only one interface needs to be tested and in the second case, two interfaces need to be tested simultaneously.

4.2 Single PCO testing

Single PCO testing applies to the Segmentation and Protocol Discriminator Filter, to the Protocol Control and to the CC for an Originating, Terminating, Incoming Gateway or Outgoing Gateway PINX.

4.2.1 CC testing for non-Transit PINX and PC testing

As shown in figure 2, the Implementation Under Test (IUT) is the PC and CC part and it is an end-system. It is not possible to observe and control the upper service boundary of the IUT. Consequently, the test method chosen is the Remote Test Method, where the co-ordination procedures are expressed in an informal way. The test system will only contain one Lower Tester (LT) and no Upper Tester (UT). The PCO, called LX, is located between the PC and CC part and the Segmentation part. Only unsegmented Protocol Data Units (PDUs) are exchanged.

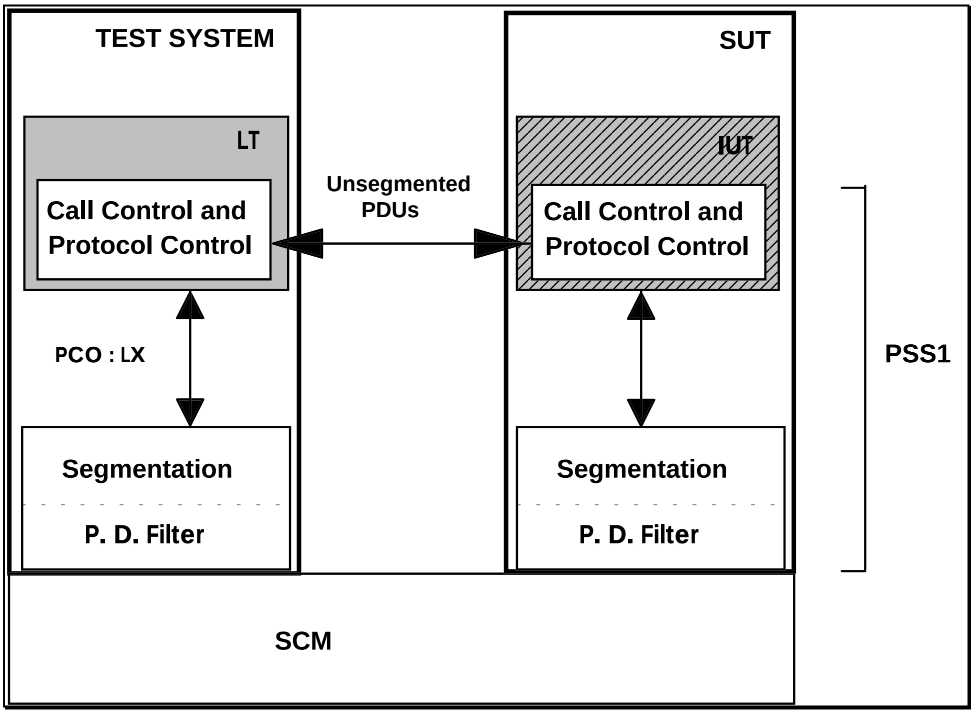


Figure 2: Remote single layer test method for Protocol Control and Call Control for non-Transit PINX

4.2.2 Segmentation and Protocol Discriminator Filter testing

As shown in figure 3, the IUT is the Segmentation and Protocol Discriminator Filter part and it is an end-system. It is not possible to observe and control the upper service boundary of the IUT. Consequently, the test method chosen is the Remote Test Method, where the co-ordination procedures are expressed in an informal way. The test system will only contain one LT and no UT. The PCO, called LSEG, is located between the Segmentation and Protocol Discriminator Filter part and the SCM. The PDUs exchanged are SEGMENT PDUs and unsegmented PDUs.

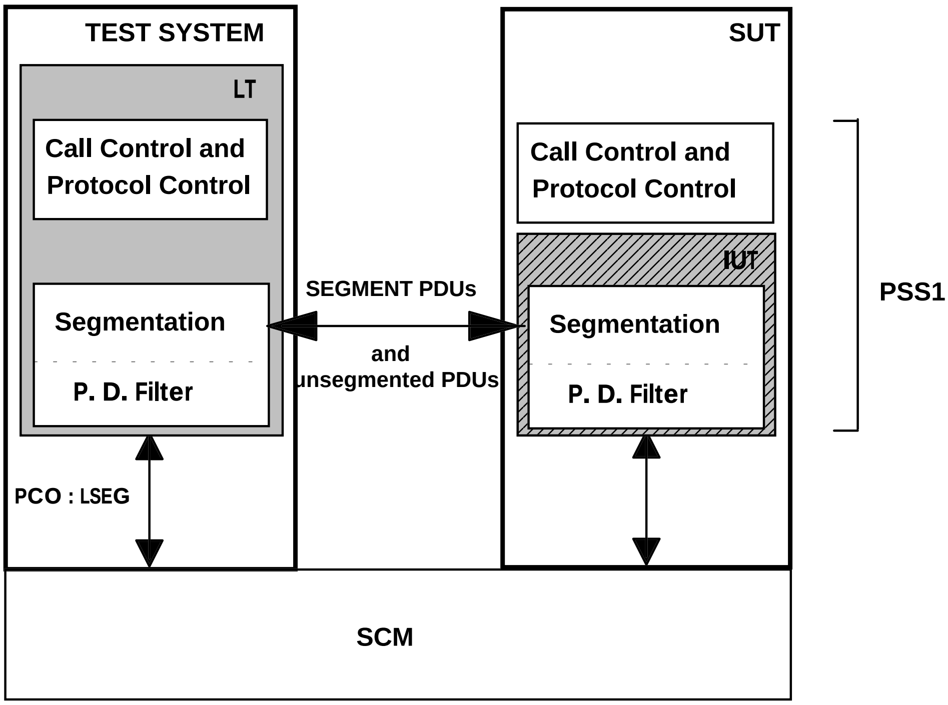


Figure 3: Remote single layer test method for Segmentation and Protocol Discriminator Filter