



# SLOVENSKI STANDARD

## SIST ETS 300 806-1 E1:2005

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Private Integrated Services Network (PISN); Inter-exchange signalling protocol; Generic functional protocol for the support of supplementary services; Part 1: Test Suite Structure and Test Purposes (TSS&TP) specification

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

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## Foreword

This final 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; Generic functional protocol for the support of supplementary services". The title of each part is listed below:

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

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
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	30 November 1998
Date of withdrawal of any conflicting National Standard (dow):	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 Generic Functional Protocol (GFP) for the support of supplementary services of the Inter-exchange signalling protocol for Private Integrated Services Networks (PISN).

The objective of this TSS and TPs specification is to provide conformance tests which give a greater probability of inter-operability. The TSS and TPs specification covers the procedures described in ETS 300 239 [1], but omitting those procedures that are better tested by testing the individual supplementary services that use those procedures.

This ETS excludes the following:

- Connectionless APDU Transport Mechanism, (i.e. no TPs have been derived from ETS 300 239 [1], subclause 7.2);
- Dialogue Service Element (DSE), (i.e. no TPs have been derived from ETS 300 239 [1], subclause 8.4);
- Remote Operation Service Element (ROSE) except for actions on receiving invalid or unrecognized APDUs;
- Manufacturer Specific Information;
- Testing of originating and incoming gateway PINXs for Call Related procedures and Call Independent Signalling Connections (CISC);
- Source PINX requirements for APDUs and Notifications (i.e. no TPs have been derived from ETS 300 239 [1], subclauses 7.1.2.1, 7.3.2.1, 7.3.3.4, 7.4.3.1).

NOTE 1: Originating, incoming gateway and Source PINX and valid behaviour of ROSE are excluded because they are impractical to test without the use of a particular supplementary service. However, although it is outside the scope of this ETS, some TPs within this ETS may be applicable to originating or incoming gateway PINX in addition to roles covered by the scope.

NOTE 2: Although there are no test purposes testing source PINX requirements, some test purposes test the behaviour where the IUT acts as a source PINX, for example where a PINX is acting as a source PINX to send a Reject APDU.

NOTE 3: This ETS does not contain any test purposes specifically for outgoing gateway PINXs, however the test purposes for terminating PINXs are generally also applicable to outgoing gateway PINXs.

The ISO standard for the methodology of conformance testing (ISO/IEC 9646 [5]) is used as basis for the test methodology.

This TSS and TP specification standard is applicable for the support of supplementary services at the Q-reference point between Private Integrated Services Network Exchanges (PINXs) connected together within a PISN. The Q reference point is defined in ISO/IEC 11579-1 [13].

## 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 300 239 (1995): "Private Integrated Services Network (PISN); Inter-exchange signalling protocol; Generic functional protocol for the support of supplementary services". [ISO/IEC 11582 modified]

- [2] ETS 300 172 (1995): "Private Integrated Services Network (PISN) ; Inter-exchange signalling protocol; Circuit-mode basic services" [ISO/IEC 11572 modified]
- [3] ETS 300 406 (1995): "Methods for testing and specification (MTS); Protocol and profile conformance testing specifications; Standardization Methodology".
- [4] ETS 300 415 (1996): "Private Integrated Services Network (PISN); Terms and definitions".
- [5] ISO/IEC 9646-1: "Information technology; Open Systems Interconnection; Conformance testing methodology and framework - Part 1: General Concepts".
- [6] ETS 300 475-1 (1995): "Private Integrated Services Network (PISN); Reference configuration - Part 1: Reference configuration for PISN eXchanges (PINXs)".
- [7] CCITT Recommendation I.112 (1988): "Vocabulary of terms for ISDNs".
- [8] CCITT Recommendation X.219 (1988): "Remote operations: Model, Notation and Service definition".
- [9] CCITT Recommendation X.229 (1988): "Remote Operations: Protocol specification".
- [10] ISO 7498: "Information Processing Systems - Open Systems Interconnection - Basic Reference model".
- [11] ISO/IEC 11582 (1995): "Information technology - telecommunications and information exchange between systems - Private Integrated Services Network - Generic functional protocol for the support of supplementary services - Inter-exchange signalling procedures and protocol".
- [12] ISO/IEC 9646-2: "Information technology; Open Systems Interconnection; Conformance testing methodology and framework - Part 2: Abstract Test Suite Specification"
- [13] ISO/IEC 11579-1 (1994): "Information technology - Telecommunications and information exchange between systems - Private integrated services network - Part 1: Reference configuration for PISN Exchanges (PINX)".

### 3 Definitions and abbreviations

#### 3.1 Definitions

For the purposes of this ETS, the terminology defined in ETS 300 415 [4] and in CCITT Recommendation I.112 [7] applies. If there is any conflict the definitions in ETS 300 415 [4] shall take precedence. The following definitions also apply:

**Abstract Test Suite (ATS):** See ISO/IEC 9646-1 [5].

**combined test purpose:** A test purpose produced by combining two or more individual test purposes.

**Implementation Under Test (IUT):** See ISO/IEC 9646-1 [5].

**individual test purpose:** A test purpose focusing on a single conformance requirement, produced before any combining of test purposes.

**final test purpose :** A test purpose which is intended to be mapped to a single test case (except if it is untestable).

NOTE: In this ETS final test purposes are either combined TPs or uncombined (i.e. individual) TPs.

**originating PINX:** See ETS 300 239 [1].

**PICS proforma:** See ISO/IEC 9646-1 [5].

**PIXIT proforma:** See ISO/IEC 9646-1 [5].

**Protocol Implementation Conformance Statement (PICS):** See ISO/IEC 9646-1 [5].

**Protocol Implementation eXtra Information For Testing (PIXIT):** See ISO/IEC 9646-1 [5].

**Super Test Purpose (STP):** A general test purpose from which one or more test purposes may be derived. These derived test purposes may be more detailed than the Super Test Purpose.

**terminating PINX:** See ETS 300 239 [1].

**transit PINX:** See ETS 300 239 [1].

**uncombined test purpose:** An individual test purpose which is not combined into any Combined Test Purpose.

NOTE 2: These terms are not defined in ISO/IEC 9646 but correspond to items referred to in ISO/IEC 9646-2 [12] subclause 10.3. The "more specific test objectives" referred to in subclause 10.3.1 are here referred to as Super Test Purposes. The terms Individual Test Purpose and Combined Test Purpose have the same meanings here as in subclause 10.3.3.

### 3.2 Abbreviations

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

APDU	Application Protocol Data Unit
ATS	Abstract Test Suite
BI	Basic Interconnection test
BV	ValiBehaviour tests
CA	CApability test
CF	Co-ordination Function
CISC	Call Independent Signalling Connection
CLTA	ConnectionLess Transport of APDUs
COTA	Connection Oriented Transport of APDUs
COTN	Connection Oriented Transport of Notifications
CR	Call Related procedures
DSE	Dialogue Service Element
GFT	Generic Functional Transport
GFTC	Generic Functional Transport Control
IE	Information Element
IO	InOpportune behaviour tests
ISO	International Organization for Standardization
IUT	Implementation Under Test
IV	InValid behaviour tests
MI	Mixed
MSI	Manufacturer Specific Information
MTS	Methods for testing and specification
NFE	Network Facility Extension
NFE	Network Facility Extension
PC	Protocol Control
PICS	Protocol Implementation Conformance Statement
PINX	Private Integrated Services Network eXchange
PISN	Private Integrated Services Network
PIXIT	Protocol Implementation eXtra Information For Testing
QSIG	Q interface Signalling protocol

ROSE	Remote Operations Service Element
SCM	Signalling Carriage Mechanism
STP	Super Test Purpose
TI	Timers
TP	Test Purpose
TSS	Test Suite Structure

## 4 Test Suite Structure (TSS)

Two separate Test Suite Structures (TSSs) have been designed, one to cover the individual TPs, and another one to cover the combined TPs (CTPs) and uncombined TPs.

### 4.1 TSS for individual TPs

Following the rules described in ETS 300 406 [3], subclause 7.4.1.1, the test suite for the individual TPs is structured as a tree with the following levels:

**1st level:** the name representing the base specification (ETS 300 239 [1]);  
Generic Functional Protocol (GFP).

**2nd level:** the entities of the base specification;

- Protocol Control (PC);
- Generic Functional Transport Control (GFTC);
- Co-ordination Function (CF);
- ROSE (RO).

**3rd level:** the type of signalling connection;

- Call Related procedures (CR);
- Call Independent procedures (CISC);
- Procedures.

**4th level:** the type of transport mechanism;

- Connection Oriented Transport of APDUs (COTA);
- Connection Oriented Transport of Notifications (COTN);
- ConnectionLess Transport of APDUs (CLTA);
- Transport of APDUs (TA).

**5th level:** the nature of the test;

- Basic Interconnection test (BI);
- CApability test (CA);
- ValiBehaviour tests (BV);
- InValid behaviour tests (IV);
- InOpportune behaviour tests (IO);
- Timers (TI).

NOTE 1: All Basic Interconnection and Capability test purposes are also Valid Behaviour test purposes. Basic interconnection test purposes are also Capability test purposes.

NOTE 2: As the scope of this ETS does not cover the whole of ETS 300 239 [1] certain groups in the TSS contain no test purposes.

Figure 1 shows the GFP Test Suite Structure overview. Not all the branches have been expanded to the final details.

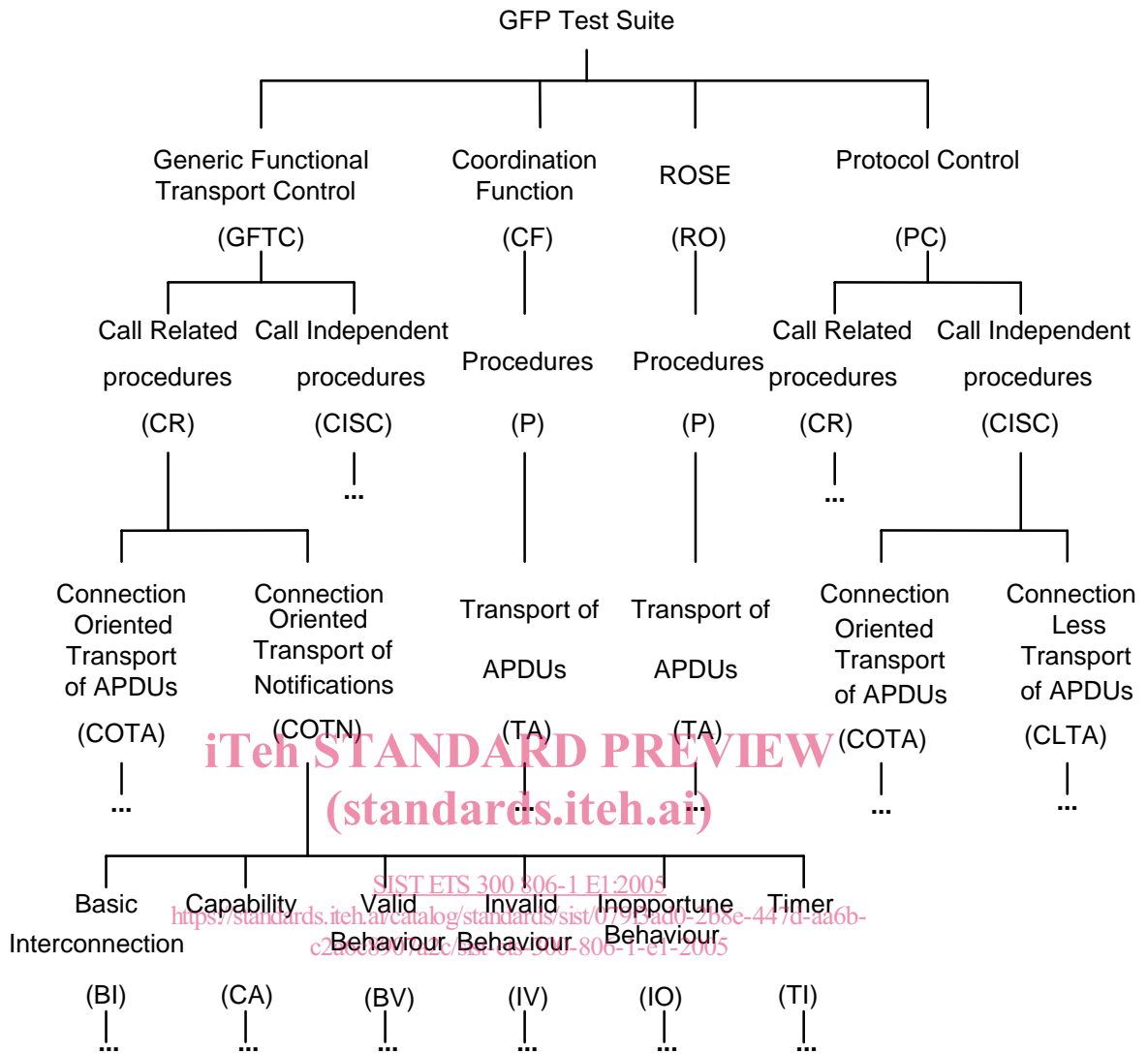


Figure 1: GFP TSS overview for individual TPs

Figure 2 shows the details of the GFP TSS.

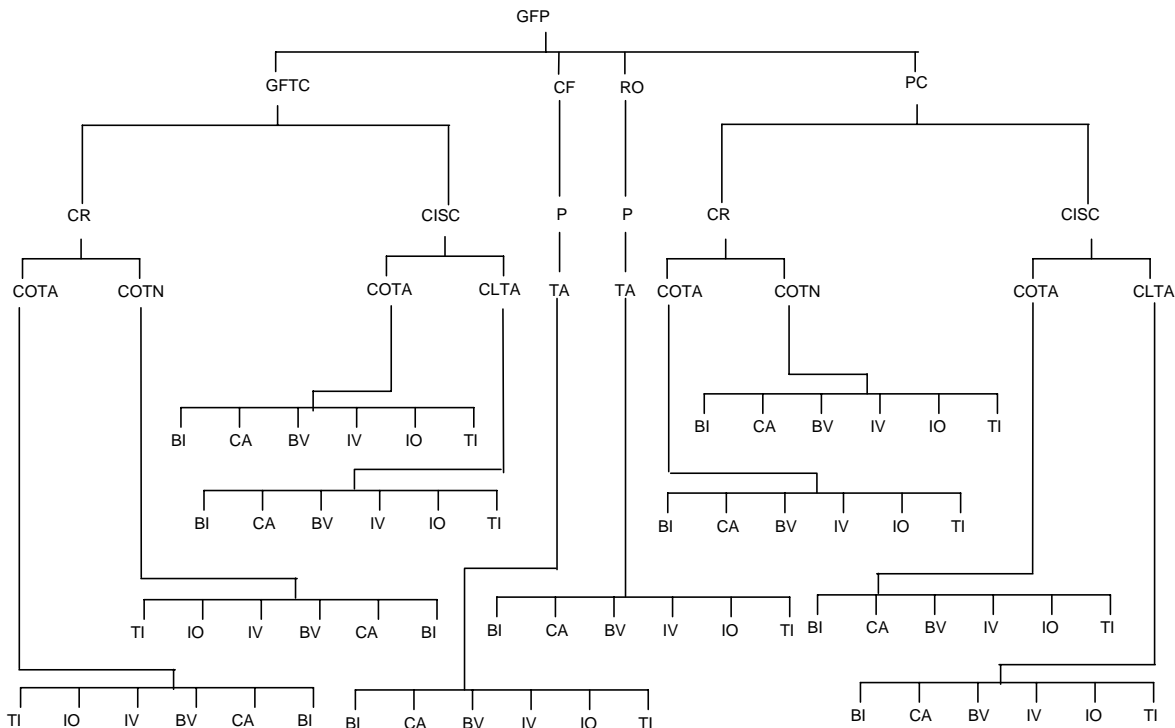


Figure 2: Detailed GFP TSS for individual TPs

#### 4.2 TSS for combined TPs

Following the rules described in ETS 300 406 [3], subclause 7.4.12.1, the test suite for the combined TPs (CTPs) and TPs which remain uncombined is structured as a tree with the following levels:

**1st level:** the name representing the base specification (ETS 300 239 [1]);  
Generic Functional Protocol (GFP).

**2nd level:** the type of signalling connection;

- Call Related procedures (CR);
- Call Independent procedures (referred by CISC).

**3rd level:** the type of transport mechanism;

- Connection Oriented Transport of APDUs (COTA);
- Connection Oriented Transport of Notifications (COTN);
- ConnectionLess Transport of APDUs (CLTA).

**4th level:** the nature of the test;

- Basic Interconnection test (BI);
- CApability test (CA);
- Valid behaviour tests (BV);
- InValid behaviour tests (IV);
- InOpportune behaviour tests (IO);
- Timers (TI);
- Mixed (MI) (This group contains CTPs combining Valid and Invalid behaviour).

NOTE: All Basic Interconnection and Capability test purposes are also Valid Behaviour test purposes.

Figure 3 shows the GFP Test Suite Structure overview. Not all the branches have been expanded to the final details.

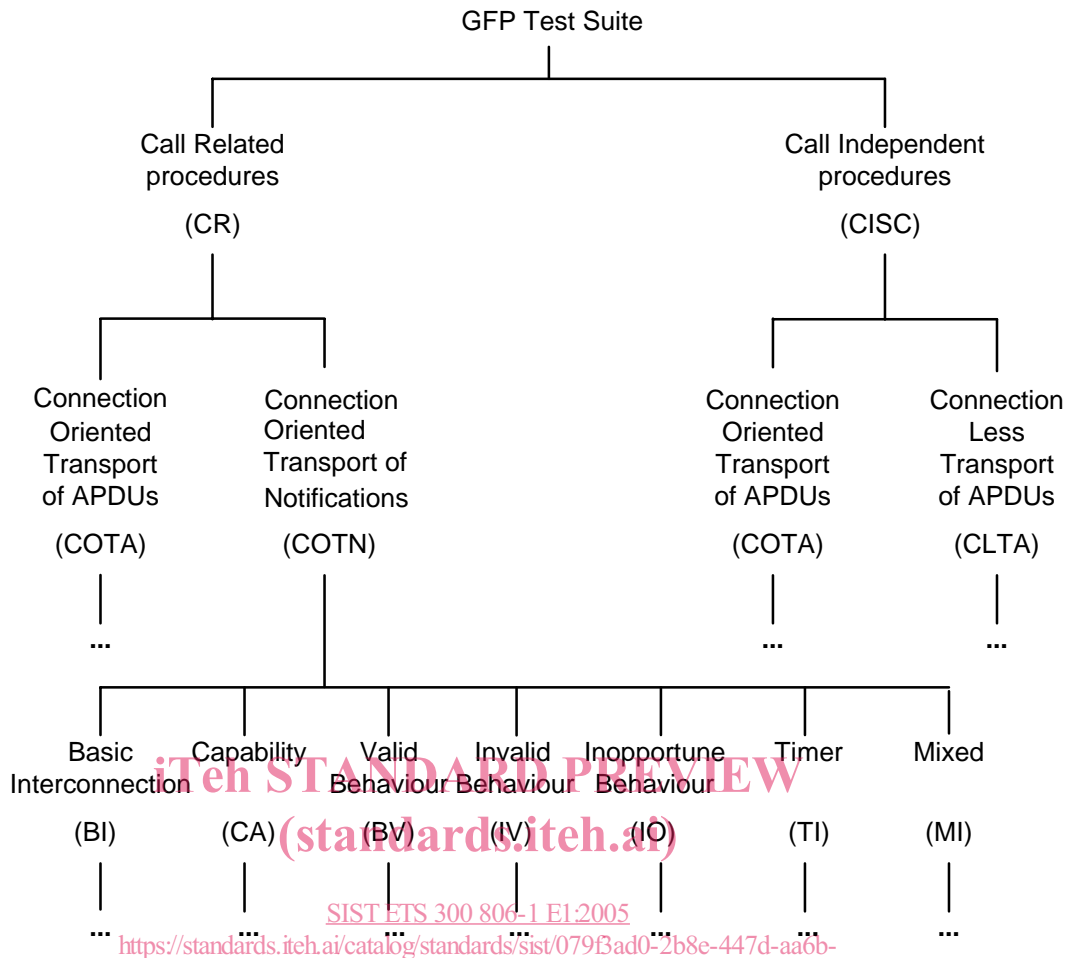


Figure 3: GFP TSS overview for combined TPs

Figure 4 shows the details of the GFP TSS.

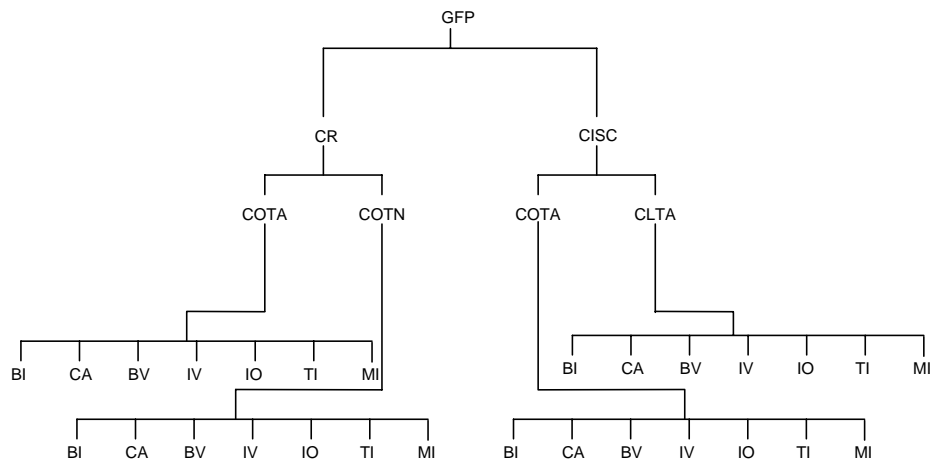


Figure 4: Detailed GFP TSS for combined TPs