SLOVENSKI STANDARD

SIST EN 302 091-4 V1.1.1:2005

01-januar-2005

ü]fc_cdUgcj bc˙X][ ]HˇUˇbcˇca fYÿˆYˇnˇ]bhÝ[f]fUb]a]ˇghcf]hjˇUa]ˇf6˙!=G8˙BŁˇ]b ý]fc_cdUgcj bcˇnUgYVbcˇca fYÿˆYˇnˇ]bhÝ[f]fUb]a]ˇghcf]hjˇUa]ˇf6˙!D=GBŁˇËˇ8][ ]HˇUˇbU bUfcˇb]ýˇUˇg][bUˇ]nUW¶ˇUˇýH˝ˇ&ˇfBˇGG&łžý]fc_cdUgcj bUˇg][bUˇ]nUW¶ˇUˇa YXˇWˇbIfUˇUa] f6˙!EG˝ˇŁˇ]bˇg][bUˇ]nUW¶ˇUˇýH˝ˇ+ˇËˇDfYXdc[ˇUˆUbˆYˇËˇ("XYˇˇ˙5 VgIfUˇ_Ib]ˇdfYg_iˇýUˇb]ˇb]n f6˙HGŁˇ]bˇXYˇbUˇXcXUIbUˇ]bˇcfa UW¶ˇUˇnUˇdfYg_iˇýUb˛Yˇ]njˇYXVYˇdfchc_c`UˇfD=L+HŁˇË DfcˇZˇcfa UˇgdYW¶ˇZ_UW¶ˇU

Broadband Integrated Services Digital Network (B-ISDN) and Broadband Private Integrated Services Network (B-PISN); Digital Subscriber Signalling System No. two (DSS2) and Broadband Inter-Exchange Signalling (B-QSIG) and Signalling System No.7 (SS7); Prenegotiation; Part 4: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN).

The present document is part 4 of a multi-part standard covering the Digital Subscriber Signalling System No. 2 (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No. 7 (SS7) TSS&TP for the Broadband Integrated Services Digital Network (B-ISDN) and Broadband Private Integrated Services Network (B-PISN) Prenegotiation, 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";

Part 4:   "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification".

National transposition dates	
Date of adoption of this EN:	25 August 2000
Date of latest announcement of this EN (doa):	30 November 2000
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 May 2001
Date of withdrawal of any conflicting National Standard (dow):	31 May 2001

1 Scope

The present document provides the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma for the Prenegotiation protocol as specified in EN 302 091-1 [1].

This fourth part of EN 302 091 [1] is applicable to the Prenegotiation protocol at the Q_B, S_B, T_B and co-incident S_B/T_B reference point of implementations conforming to the standards for the Digital Subscriber Signalling System No. two (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No. 7 (SS7) protocol specification for Broadband Integrated Services Digital Network (B-ISDN) and Broadband Private Integrated Services Network (B-PISN).

A further part of the present document specifies the Test Suite Structure and Test Purposes (TSS&TP) related to this ATS and partial PIXIT proforma.

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.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, subsequent revisions do apply.

[1] ETSI EN 302 091-1: "Broadband Integrated Services Digital Network (B-ISDN) and Broadband Private Integrated Services Network (B-PISN); Digital Subscriber Signalling System No. two (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No. 7 (SS7); Prenegotiation; Part 1: Protocol specification".

[2] ETSI EN 302 091-2: "Broadband Integrated Services Digital Network (B-ISDN) and Broadband Private Integrated Services Network (B-PISN); Digital Subscriber Signalling System No. two (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No.7 (SS7); Prenegotiation; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".

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

[4] ISO/IEC 9646-2: "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 2: Abstract test suite specification".

[5] ISO/IEC 9646-4: "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 4: Test realization".

[6] ISO/IEC 9646-5: "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 5: Requirements on test laboratories and clients for the conformance assessment process.

[7] ETSI EN 302 092-1: "Broadband Integrated Services Digital Network (B-ISDN) and Broadband Private Integrated Services Network (B-PISN); Digital Subscriber Signalling System No. two (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No. 7 (SS7); Call control in a separated call and bearer control environment; Part 1: Protocol specification".

[8] ISO/IEC 9646-3: "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 3: The Tree and Tabular Combined Notation (TTCN)".

3   Definitions and abbreviations

3.1   Definitions

For the purposes of the present document, the following terms and definitions apply in addition to the definitions in EN 302 092-1 [7]:

Abstract test case: refer to ISO/IEC 9646-1 [3]

Abstract Test Method (ATM): refer to ISO/IEC 9646-1 [3]

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

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

Lower tester (LT): refer to ISO/IEC 9646-1 [3]

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

PICS proforma: refer to ISO/IEC 9646-1 [3]

Protocol Implementation eXtra Information for Testing (PIXIT): refer to ISO/IEC 9646-1 [3]

PIXIT proforma: refer to ISO/IEC 9646-1 [3]

Point of Control and Observation (PCO): refer to ISO/IEC 9646-1 [3]

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

Test Purpose (TP): refer to ISO/IEC 9646-1 [3]

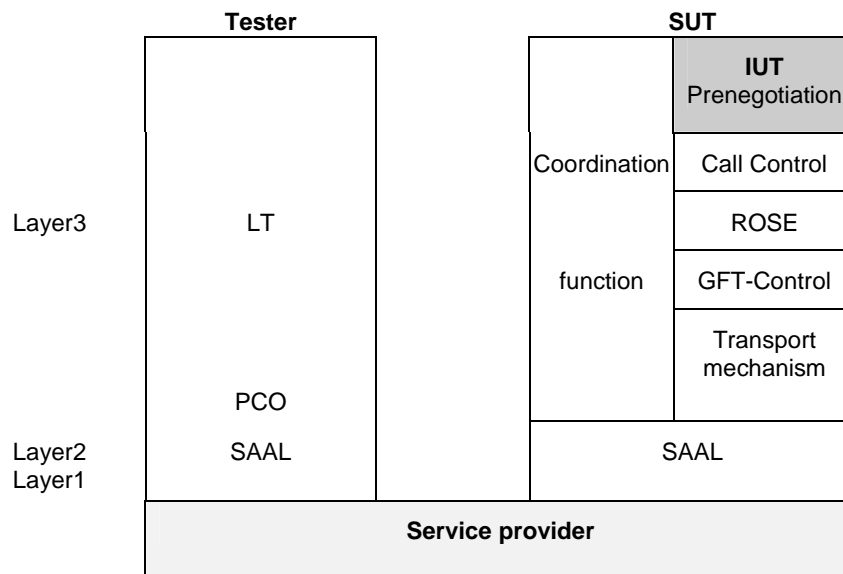**Upper Tester (UT):** refer to ISO/IEC 9646-1 [3]

3.2   Abbreviations

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

ATM	Abstract Test Method
ATS	Abstract Test Suite
B-ISDN	Broadband Integrated Services Digital Network
B-PISN	Broadband Private Integrated Services Network
B-QSIG	Broadband Inter-Exchange Signalling System
CM	Co-ordination Message
CP	Co-ordination Point
DSS2	Digital Subscriber Signalling System No. two
ExTS	Executable Test Suite
IUT	Implementation Under Test
LT	Lower Tester
MOT	Means Of Testing
PCO	Point of Control and Observation
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
PTC	Parallel Test Component
SUT	System Under Test
TCP	Test Co-ordination Procedures
TP	Test Purpose
TTCN	Tree and Tabular Combined Notation
UT	Upper Tester

4 Abstract Test Method

The remote test method is applied for the ATS. The Point of Control and Observation (PCO) resides at the service access point between Layer 2 and 3. This PCO is named "L0" (for Lower). The L0 PCO is used to control and observe the behaviour of the Implementation Under Test (IUT) and test case verdicts are assigned depending on the behaviour observed at this PCO.

(Figure 1: Remote test method)

ISO/IEC 9646-2 [4] allows the informal expression of Test Co-ordination Procedures (TCP) between the System Under Test (SUT) upper layer(s) and the Lower Tester (LT). In the ATS contained in annex C, TCP is achieved by use of a second "informal" PCO, called "O" (for Operator). This PCO is used to specify control but not observation above the IUT and consequently, events at this PCO are never used to generate test case verdicts. The use of this O PCO is regarded as a preferred alternative to the use of the implicit send event, in that it allows the ATS to specify in a clear and meaningful way what actions are required to be performed on the IUT.

5 Untestable test purposes

There are no untestable test purposes associated with this ATS.

6 ATS to TP map

The identifiers used for the TPs are reused as test case names. Thus there is a straightforward one-to-one mapping.

7   PCTR conformance

A test laboratory, when requested by a client to produce a PCTR, is required, as specified in ISO/IEC 9646-5 [6], to produce a PCTR conformant with the PCTR template given in annex B of ISO/IEC 9646-5 [6].

Furthermore, a test laboratory, offering testing for the ATS specification contained in annex C, when requested by a client to produce a PCTR, is required to produce a PCTR conformant with the PCTR proforma contained in annex A of the present document.

A PCTR which conforms to this PCTR proforma specification shall preserve the content and ordering of the clauses contained in annex A. Clause A.6 of the PCTR may contain additional columns. If included, these shall be placed to the right of the existing columns. Text in italics may be retained by the test laboratory.

8   PIXIT conformance

A test realizer, producing an executable test suite for the Abstract Test Suite (ATS) specification contained in annex C, is required, as specified in ISO/IEC 9646-4 [5], to produce an augmented partial PIXIT proforma conformant with this partial PIXIT proforma specification.

An augmented partial PIXIT proforma which conforms to this partial PIXIT proforma specification shall, as a minimum, have contents which are technically equivalent to annex B. The augmented partial PIXIT proforma may contain additional questions that need to be answered in order to prepare the Means Of Testing (MOT) for a particular Implementation Under Test (IUT).

A test laboratory, offering testing for the ATS specification contained in annex C, is required, as specified in ISO/IEC 9646-5 [6], to further augment the augmented partial PIXIT proforma to produce a PIXIT proforma conformant with this partial PIXIT proforma specification.

A PIXIT proforma which conforms to this partial PIXIT proforma specification shall, as a minimum, have contents which are technically equivalent to annex B. The PIXIT proforma may contain additional questions that need to be answered in order to prepare the test laboratory for a particular IUT.

9   ATS Conformance

The test realizer, producing a Means Of Testing (MOT) and Executable Test Suite (ExTS) for this Abstract Test Suite (ATS) specification, shall comply with the requirements of ISO/IEC 9646-4 [5]. In particular, these concern the realization of an Executable Test Suite (ExTS) based on each ATS. The test realizer shall provide a statement of conformance of the MOT to this ATS specification.

An ExTS which conforms to this ATS specification shall contain test groups and test cases which are technically equivalent to those contained in the ATS in annex C. All sequences of test events comprising an abstract test case shall be capable of being realized in the executable test case. Any further checking which the test system might be capable of performing is outside the scope of this ATS specification and shall not contribute to the verdict assignment for each test case.

Test laboratories running conformance test services using this ATS shall comply with ISO/IEC 9646-5 [6].

A test laboratory which claims to conform to this ATS specification shall use an MOT which conforms to this ATS.