



EUROPEAN
TELECOMMUNICATION
STANDARD

DRAFT
pr **ETS 300 436-4**

July 1998

Source: SPS

Reference: DE/SPS-05125-2

ICS: 33.020

Key words: ATM, B-ISDN, AAL, LAYER2, SSCOP, SSCF, ATS, PIXIT

**Broadband Integrated Services Digital Network (B-ISDN);
Signalling ATM Adaptation Layer (SAAL);
Service Specific Connection Oriented Protocol (SSCOP);
Part 4: Abstract Test Suite (ATS) and partial Protocol
Implementation eXtra Information for Testing (PIXIT)
proforma specification for the user**

ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address: F-06921 Sophia Antipolis CEDEX - FRANCE

Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE

Internet: secretariat@etsi.fr - <http://www.etsi.fr> - <http://www.etsi.org>

Tel.: +33 4 92 94 42 00 - Fax: +33 4 93 65 47 16

Copyright Notification: No part may be reproduced except as authorized by written permission. The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 1998. All rights reserved.

Contents

Foreword	5
1 Scope	7
2 References	7
3 Definitions and abbreviations	8
3.1 Definitions related to conformance testing	8
3.2 Definitions related to ETS 300 436-1	8
3.3 Abbreviations	9
4 Abstract Test Method	10
4.1 Description of ATM used	10
4.1.1 Conventions for the test component and PCO	10
5 Untestable test purposes	11
6 ATS conventions	11
6.1 Declarations part	11
6.1.1 Type definitions	11
6.1.1.1 Simple type definitions	11
6.1.1.2 TTCN structured type definitions	11
6.1.1.3 ASP type definitions	12
6.1.1.4 TTCN PDU type definitions	12
6.1.2 Test suite constants	12
6.1.3 Test suite parameters	12
6.1.4 Variables	12
6.1.4.1 Test suite variables	12
6.1.4.2 Test case variables	12
6.1.5 Test suite operation definitions	12
6.2 Constraints part	12
6.2.1 Structured type constraint declaration	12
6.2.2 TTCN ASP type constraint declaration	13
6.2.3 TTCN PDU type constraint declaration	13
6.2.4 Chaining of constraints	13
6.2.4.1 Static chaining	13
6.2.4.2 Dynamic chaining	13
6.2.5 Derived constraint	13
6.2.6 Parameterized constraints	13
6.2.7 Value assignment	13
6.2.7.1 Specific values	13
6.2.7.2 Matching values	13
6.3 Dynamic part	14
6.3.1 Test cases	14
6.3.2 Test steps	14
6.3.3 Defaults	14
7 ATS to TP map	14
8 PCTR conformance	14
9 PIXIT conformance	14
10 ATS conformance	15
Annex A (normative): Protocol Conformance Test Report (PCTR) proforma	16

A.1	Identification summary.....	16
A.1.1	Protocol conformance test report.....	16
A.1.2	IUT identification.....	16
A.1.3	Testing environment.....	16
A.1.4	Limits and reservations	17
A.1.5	Comments.....	17
A.2	IUT Conformance status.....	17
A.3	Static conformance summary.....	17
A.4	Dynamic conformance summary.....	17
A.5	Static conformance review report.....	18
A.6	Test campaign report.....	18
A.7	Observations.....	24
Annex B (normative):	Partial PIXIT proforma	25
B.1	Identification summary.....	25
B.2	Abstract test suite summary	25
B.3	Test laboratory.....	25
B.4	Client (of the test laboratory)	26
B.5	SUT.....	26
B.6	Protocol information.....	27
B.6.1	Protocol identification	27
B.6.2	Configuration to be tested	27
B.6.3	Configuration options	27
B.6.4	Test management timers	28
B.6.5	Sending of messages by IUT	28
B.6.6	Parameter values	29
Annex C (normative):	Abstract Test Suite (ATS).....	30
C.1	The TTCN Graphical form (TTCN.GR)	30
C.2	The TTCN Machine Processable form (TTCN.MP)	30
Annex D (informative):	General structure of ATS.....	31
History		32

Foreword

This final draft European Telecommunication Standard (ETS) has been produced by the Signalling Protocols and Switching (SPS) Technical Committee of the European Telecommunications Standards Institute (ETSI), and is now submitted for the Voting phase of the ETSI standards approval procedure.

The present document is part 4 of a multi-part standard covering the Service Specific Connection Oriented Protocol (SSCOP) specification for the Broadband Integrated Services Digital Network (B-ISDN) as described below:

- Part 1: "Protocol specification [ITU-T Recommendation Q.2110, modified]";
- 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".**

Proposed transposition dates	
Date of latest announcement of this ETS (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

Blank page

1 Scope

This fourth part of ETS 300 436 specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma for the User and Network side of the ATM UNI reference point or the ATM NNI reference point of implementations conforming to the standard for the Service Specific Connection Oriented Protocol (SSCOP) for the European Broadband Integrated Services Digital Network (B-ISDN), ETS 300 436-1 [1].

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.

The Protocol Implementation eXtra Information for Testing (PIXIT) proforma is provided in annex B. The PIXIT questionnaire needs to be completed for a particular system equipment (Implementation under Test) prior to conformance testing.

2 References

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

- [1] ETS 300 436-1: "Broadband Integrated Services Digital Network (B-ISDN); ATM Adaptation Layer (AAL); Service Specific Connection Oriented Protocol (SSCOP); Part 1: Protocol specification [ITU-T Recommendation Q.2110, modified]".
- [2] ETS 300 436-3: "Broadband Integrated Services Digital Network (B-ISDN); ATM Adaptation Layer (AAL); Service Specific Connection Oriented Protocol (SSCOP); Part 3: Test Suite Structure and Test Purposes (TSS&TP) specification".
- [3] ETS 300 437-1: "Broadband Integrated Services Digital Network (B-ISDN); Signalling ATM Adaptation Layer (SAAL); Service Specific Co-ordination Function (SSCF) for support of signalling at the User-Network Interface (UNI); Part 1: Specification of SSCF at UNI [ITU-T Recommendation Q.2130, modified]".
- [4] ETS 300 438-1: "Broadband Integrated Services Digital Network (B-ISDN); Signalling ATM Adaptation Layer (SAAL); Service Specific Co-ordination Function (SSCF) for support of signalling at the Network-Node Interface (NNI); Part 1: Specification of SSCF at NNI [ITU-T Recommendation Q.2140, modified]".
- [5] EN 300 443-1: "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; B-ISDN user-network interface layer 3 specification for basic call/bearer control; Part 1: Protocol specification [ITU-T Recommendation Q.2931, modified]".
- [6] ISO/IEC 9646-1: "Information Technology; Open Systems Interconnection; Conformance Testing Methodology and Framework; Part 1: General Concepts".
- [7] ISO/IEC 9646-2: "Information Technology; Open Systems Interconnection; Conformance Testing Methodology and Framework; Part 2: Abstract Test Suite 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)".

- [9] ISO/IEC 9646-4: "Information Technology; Open Systems Interconnection; Conformance Testing Methodology and Framework; Part 4: Test realization".
- [10] 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".
- [11] ITU-T Recommendation I.411 (1993): "ISDN user-network interfaces; Reference configurations".

3 Definitions and abbreviations

3.1 Definitions related to conformance testing

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

Abstract Test Suite (ATS): See ISO/IEC 9646-1 [6].

Implementation Under Test (IUT): See ISO/IEC 9646-1 [6].

Implicit Send Event (IUT): See ISO/IEC 9646-1 [6].

Lower Tester (LT): See ISO/IEC 9646-1 [6].

PICS proforma: See ISO/IEC 9646-1 [6].

PIXIT proforma: See ISO/IEC 9646-1 [6].

Point of Control and Observation (PCO): See ISO/IEC 9646-1 [6].

Protocol Implementation Conformance Statement (PICS): See ISO/IEC 9646-1 [6].

Protocol Implementation eXtra Information for Testing (PIXIT): See ISO/IEC 9646-1 [6].

System Under Test (SUT): See ISO/IEC 9646-1 [6].

Test Purpose (TP): See ISO/IEC 9646-1 [6].

Test Suite Structure (TSS): See ISO/IEC 9646-1 [6].

Upper Tester (UT): See ISO/IEC 9646-1 [6].

3.2 Definitions related to ETS 300 436-1

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

VT(S): See ETS 300 436-1 [1], subclause 7.4.

VT(PS): See ETS 300 436-1 [1], subclause 7.4.

VT(A): See ETS 300 436-1 [1], subclause 7.4.

VT(MS): See ETS 300 436-1 [1], subclause 7.4.

VT(PD): See ETS 300 436-1 [1], subclause 7.4.

VT(CC): See ETS 300 436-1 [1], subclause 7.4.

VT(SQ): See ETS 300 436-1 [1], subclause 7.4.

VR(R): See ETS 300 436-1 [1], subclause 7.4.

VR(H): See ETS 300 436-1 [1], subclause 7.4.
VR(MR): See ETS 300 436-1 [1], subclause 7.4.
VR(SQ): See ETS 300 436-1 [1], subclause 7.4.
N(S): See ETS 300 436-1 [1], subclause 7.5.
N(PS): See ETS 300 436-1 [1], subclause 7.5.
N(R): See ETS 300 436-1 [1], subclause 7.5.
N(MR): See ETS 300 436-1 [1], subclause 7.5.
SSCOP-UU: See ETS 300 436-1 [1], subclause 7.5.
N(SQ): See ETS 300 436-1 [1], subclause 7.5.
MaxCC: See ETS 300 436-1 [1], subclause 7.7.
MaxPD: See ETS 300 436-1 [1], subclause 7.7.
MaxSTAT: See ETS 300 436-1 [1], subclause 7.7.
seq1: See ETS 300 436-1 [1], subclause 8.2.
seq2: See ETS 300 436-1 [1], subclause 8.2.

3.3 Abbreviations

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

AAL	ATM Adaptation Layer
ASP	Abstract Service Primitive
ATM	Abstract Test Method
ATS	Abstract Test Suite
BGN	Begin (PDU)
B-ISDN	Broadband Integrated Services Digital Network
BR	Buffer Release Parameter
CM	Co-ordination Message
CP	Co-ordination Point
CPCS	
END	END (PDU)
ENDAK	End Acknowledge (PDU)
ER	Error Recovery (PDU)
ERAK	Error Recovery Acknowledge (PDU)
ExTS	Executable Test Suite
IUT	Implementation Under Test
LT	Lower Tester
MaxCC	Maximum Connection Control (Count)
MaxPD	Maximum Poll Data (Count)
MaxSTAT	Maximum STAT (Count)
MOT	Means Of Testing
MTC	Main Test Component
MTCA	
NNI	Network-Node Interface
PCO	Point of Control and Observation
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
PHY	PHYSical layer
POLL	POLL (PDU)

RS	Resynchronization (PDU)
S	Source (field)
SAAL	Signalling ATM Adaptation Layer
SD	Sequenced Data (PDU)
SSCF	Service Specific Coordination Function
SSCOP	Service Specific Connection Oriented Protocol
STAT	Solicited Status (PDU)
SUT	System Under Test
TCP	Test Co-ordination Procedures
TP	Test Purpose
TTCN	Tree and Tabular Combined Notation
UD	Unnumbered Data (PDU)
UNI	User Network Interface
UT	Upper Tester
UU	User-to-User
VR	Receiver state Variable
VT	Transmitter state Variable

4 Abstract Test Method

4.1 Description of ATM used

The requirement for testing the IUT is to focus on the behaviour of the IUT at the ATM user-network interface and also at the network-node interface. Thus the IUT includes the SSCOP protocol entity at a particular user-network interface or at a particular network-node interface, as well as the Service Specific Coordination Function (SSCF) and a higher layer, such as DSS2.

It is necessary to specify an ATS based on the Remote single layer embedded (RSE) test method for such an IUT. For the remote single layer testing for the SSCOP, the tester has only one Point of Control and Observation (PCO). Thus the test system is made up of one Main Test Component (MTC), see figure 1.

The notation used in this abstract test suite is the Tree and Tabular Combined Notation (TTCN) as described in [8].

4.1.1 Conventions for the test component and PCO

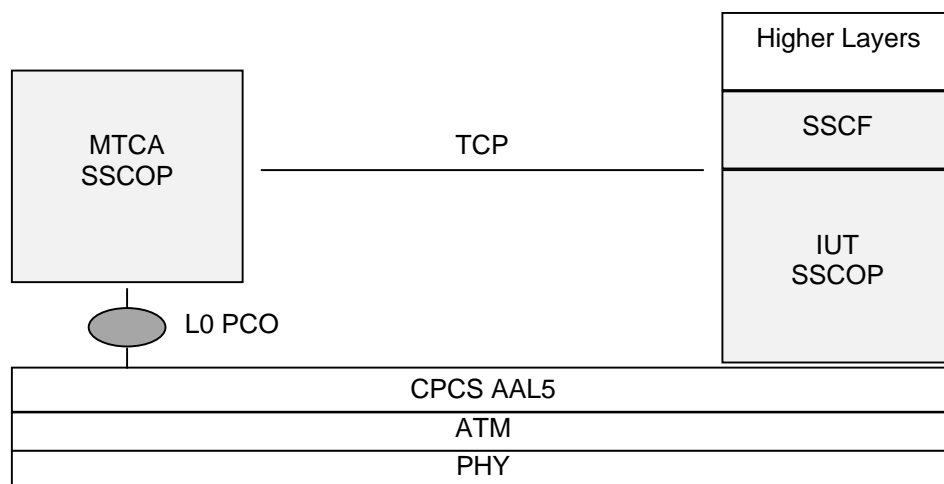


Figure 1: Remote single layer embedded test method

In the RSE arrangement, the MTC is considered to be the master tester. The tester on the IUT side is only an explicit description of how to deal with the interface during the testing process, i.e. "how to make the IUT send the required message".

This means, in particular, that the verdict will only be assigned from the protocol aspects observed on the interface under test (i.e. by the "master" tester), as it would be observed by a terminal connected to this interface.

The MTC PCO is named "L0" ("L" for Lower). The L0 PCO is used to control and observe the behaviour of the IUT and test case verdicts are assigned depending on the behaviour observed at this PCO.

5 Untestable test purposes

Only test cases which can be build from the base test purposes [2] are considered. The states 03 Incoming Connection Pending, 06 Incoming Resynchronization Pending, 08 Recovery Response Pending and 09 Incoming Recovery Pending are instable states. Therefore no test cases are generated from these states associated with this ATS and ATM.

The test purposes concerning the data retrieval function are not testable: the test suite operator could only assign the verdict, if there is an access to the SSCF interface for implicit operator interaction. Thus the following test purposes of [2] become untestable:

SSCOP_S01_V_003
SSCOP_S01_V_004
SSCOP_S04_V_004
SSCOP_S04_V_005
SSCOP_S04_V_006

For consistency these test cases are not inserted in the test campaign report list, but in the corresponding TSS&TP document [2].

6 ATS conventions

This clause is structured similarly to the structure of a general TTCN ATS.

6.1 Declarations part

6.1.1 Type definitions

6.1.1.1 Simple type definitions

Where appropriate, simple types have a length, a value list or a range restriction attached.

Simple types defined as being of some string type (e.g. BITSTRING, OCTETSTRING), have a length restriction or a value list attached.

Simple types, defined as being of INTEGER type, have a value list or a range restriction attached.

6.1.1.2 TTCN structured type definitions

All structured type definitions are provided with a full name.

All elements in every structured type definition, defined as being of some string type (e.g. BITSTRING, OCTETSTRING), have a length restriction attached.

If an element in a structured type definition is defined as being of a referenced type, the (possible) restriction is defined in that referenced type.

For information elements the identifier, which is unique for each element, has its type defined as a simple type where the value list is restricted to the single value which is the identifier itself. This has the advantage that it allows a test system derived from this ATS to easily identify information elements embedded in messages. An ATS where information element identifiers are represented as unrestricted types can present difficulties for a derived test system in the case where it needs to find one information element embedded in a number of others and the constraints for the other elements have the any-or-omit value. In such a case the test system cannot easily find the beginning of each information element.

6.1.1.3 ASP type definitions

TTCN ASP type definitions only contain one PDU or no PDU at all. The relationship between an ASP type and a PDU type is one-to-one. That is, there exists one ASP type definition for each PDU type definition (if that ASP type contains a PDU).

All TTCN ASP type definitions are provided with a full identifier.

6.1.1.4 TTCN PDU type definitions

The TTCN PDU type reflects the actual data being transferred or received. All PDUs are embedded in ASPs.

If a specific PDU type definition contains elements defined in terms of a pre-defined type, that element has a restriction attached to it.

6.1.2 Test suite constants

No test suite constants are used or defined in this ATS.

6.1.3 Test suite parameters

Each test suite parameter is defined in terms of a predefined type or a referenced type. A referenced type is used when it is necessary to attach restrictions to these type definitions (it is not allowed to include restrictions directly in the test suite parameter table). The referenced type can have a length or value restriction attached to it in its declaration table.

6.1.4 Variables

6.1.4.1 Test suite variables

No test suite variables are used or defined in this ATS.

6.1.4.2 Test case variables

Each test case variable is defined in terms of a predefined type or a referenced type. A referenced type is used when it is necessary to attach restrictions to these type definitions (it is not allowed to include restrictions directly in the test case variable table). The referenced type can have a length or value restriction attached to it in its declaration table.

Where test case variables are used in constraints, they are passed as formal parameters.

6.1.5 Test suite operation definitions

The description part of a test suite operation definition uses either natural language or meta C.

6.2 Constraints part

6.2.1 Structured type constraint declaration

For every structured type definition there exists one or more structured type constraint.

6.2.2 TTCN ASP type constraint declaration

For TTCN ASP constraint declarations there is a one-to-one relationship between its type and the constraint. That is, there is only one constraint for each TTCN ASP Type Declaration. The reason for this is that the ASPs are used only for carrying a specific PDU value. The many ASP constraints (and types) could have been avoided by using the meta type **PDU**, but that was not suitable as values inside a specific PDU have to be referenced. To reference elements inside a value of meta type **PDU** is not allowed according to ISO/IEC 9646-3 [8], so each ASP has to be defined as having a parameter of a specific PDU type.

In all ASP constraints the embedded PDU constraint is either chained static or "semi-dynamic". That is, the PDU constraint is always fixed to a specific ASP constraint but it (the PDU) may be parameterized.

All ASP constraints have a specific value for its parameter. No matching symbols are used in ASPs.

6.2.3 TTCN PDU type constraint declaration

PDU constraints are used for assigning values or patterns to the data being sent or received.

6.2.4 Chaining of constraints

6.2.4.1 Static chaining

Static chaining, that is a fixed reference to a specific constraint, is used in this ATS. The static chaining is used for static binding of both variables and sub-structures.

6.2.4.2 Dynamic chaining

Dynamic chaining is achieved when having a reference to a value which is unknown. The only thing known (before run-time) is the type of that reference. The reference is passed as a parameter. Strict dynamic chaining is not used in this ATS. What is used is something that is called "semi-dynamic chaining". The definition of semi-dynamic chaining is that the fixed reference is parameterized with an unknown value. That value is received as a parameter.

6.2.5 Derived constraint

No derivation of any constraints is used. All constraints are considered to be base constraints.

6.2.6 Parameterized constraints

Parameterized constraints are used in this ATS.

6.2.7 Value assignment

6.2.7.1 Specific values

For specific value assignment both explicit values and references to explicit values are used.

6.2.7.2 Matching values

As matching values the following mechanisms are used:

Instead of Value:

AnyOrOmit	"**"
AnyValue	"?"
Omit	"_"

Inside value:

AnyOne "?"
AnyOrNone "**"

6.3 Dynamic part

6.3.1 Test cases

Each test case contains the test purpose text from ETS 300 436-3 [2]. To be able to read and understand the test case dynamic behaviour it is recommended that the test steps are understood first.

6.3.2 Test steps

There are no test steps defined associated with this ATS.

6.3.3 Defaults

Note the use of the RETURN statement which is defined in DAM1 of ISO/IEC 9646-3 [8]. This allows valid background behaviour to be handled in the default tree with a possibility to return to the original set of alternatives in the test case.

7 ATS to TP map

The identifiers used for the TPs [2] are reused as test case names. Thus there is a straightforward one-to-one mapping.

8 PCTR conformance

A test laboratory, when requested by a client to produce a PCTR, is required, as specified in ISO/IEC 9646-5 [10], to produce a PCTR conformant with the PCTR template given in annex B of ISO/IEC 9646-5 [10].

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.

9 PIXIT conformance

A test realizer, producing an executable test suite (ExTS) for the ATS specification contained in annex C, is required, as specified in ISO/IEC 9646-4 [9], 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 IUT.

A test laboratory, offering testing for the ATS specification contained in annex C, is required, as specified in ISO/IEC 9646-5 [10], 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.

10 ATS conformance

The test realizer, producing MOT and ExTS for this ATS specification, shall comply with the requirements of ISO/IEC 9646-4 [9]. In particular, these concern the realization of an 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 [10].

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

Annex A (normative): Protocol Conformance Test Report (PCTR) proforma

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document may freely reproduce the PCTR proforma in this annex so that it can be used for its intended purposes and may further publish the completed PCTR.

A.1 Identification summary

A.1.1 Protocol conformance test report

PCTR number:	
PCTR date:	
Corresponding SCTR number:	
Corresponding SCTR date:	
Test laboratory identification:	
Test laboratory manager:	
Signature:	

A.1.2 IUT identification

Name:	
Version:	
Protocol specification:	ETS 300 436-1
PICS:	ETS 300 436-2
Previous PCTRs (if any)	

A.1.3 Testing environment

PIXIT Reference number:	
ATS Specification:	ETS 300 436-4
Abstract Test Method:	Remote single layer embedded test method (see ISO/IEC 9646-2)
Means of Testing identification:	
Dates of testing:	
Conformance log reference(s):	
Retention date for log reference(s):	

A.1.4 Limits and reservations

Additional information relevant to the technical contents or further use of the test report, or to the rights and obligations of the test laboratory and the client, may be given here. Such information may include restriction on the publication of the report.

.....
.....
.....
.....

A.1.5 Comments

Additional comments may be given by either the client or the test laboratory on any of the contents of the PCTR, for example, to note disagreement between the two parties.

.....
.....
.....
.....

A.2 IUT Conformance status

This IUT has / has not been shown by conformance assessment to be non-conforming to the specified protocol specification.

Strike the appropriate words in this sentence. If the PICS for this IUT is consistent with the static conformance requirements (as specified in clause A.3 of this report) and there are no "FAIL" verdicts to be recorded (in clause A.6) strike the words "has or", otherwise strike the words "or has not".

A.3 Static conformance summary

The PICS for this IUT is / is not consistent with the static conformance requirements in the specified protocol.

Strike the appropriate words in this sentence.

A.4 Dynamic conformance summary

The test campaign did / did not reveal errors in the IUT.

Strike the appropriate words in this sentence. If there are no "FAIL" verdicts to be recorded (in clause A.6 of this report) strike the word "did", otherwise strike the words "did not".

Summary of the results of groups of tests:

.....
.....
.....
.....
.....

A.5 Static conformance review report

If clause A.3 indicates non-conformance, this subclause itemizes the mismatches between the PICS and the static conformance requirements of the specified protocol specification.

.....

.....

.....

.....

.....

.....

.....

.....

A.6 Test campaign report

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
SSCOP_S01_V_001				
SSCOP_S01_V_002				
SSCOP_S01_V_005				
SSCOP_S01_V_006				
SSCOP_S01_V_007				
SSCOP_S01_V_008				
SSCOP_S01_V_009				
SSCOP_S01_V_010				
SSCOP_S01_V_011				
SSCOP_S01_V_012				
SSCOP_S01_I_013				
SSCOP_S01_I_014				
SSCOP_S01_I_015				
SSCOP_S01_I_016				
SSCOP_S01_I_017				
SSCOP_S01_I_018				
SSCOP_S01_I_019				
SSCOP_S01_I_020				
SSCOP_S01_I_021				
SSCOP_S01_I_022				
SSCOP_S01_IV_023				
SSCOP_S01_IV_024				
SSCOP_S01_IV_025				
SSCOP_S01_IV_026				
SSCOP_S01_IV_027				
SSCOP_S01_IV_028				
SSCOP_S01_IV_029				
SSCOP_S01_IV_030				
SSCOP_S01_IV_031				
SSCOP_S01_IV_032				
SSCOP_S01_IV_033				
SSCOP_S01_IV_034				
SSCOP_S01_IV_035				
SSCOP_S01_IV_036				
SSCOP_S01_IV_037				
SSCOP_S01_IV_038				
SSCOP_S01_IV_039				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
SSCOP_S01_IV_040				
SSCOP_S01_IV_041				
SSCOP_S01_IV_042				
SSCOP_S01_IV_043				
SSCOP_S01_IV_044				
SSCOP_S01_IV_045				
SSCOP_S01_IV_046				
SSCOP_S01_IV_047				
SSCOP_S01_IV_048				
SSCOP_S01_IV_049				
SSCOP_S01_IV_050				
SSCOP_S01_IV_051				
SSCOP_S01_IV_052				
SSCOP_S01_IV_053				
SSCOP_S01_IV_054				
SSCOP_S01_IV_055				
SSCOP_S01_IV_056				
SSCOP_S01_IV_057				
SSCOP_S01_IV_058				
SSCOP_S02_V_001				
SSCOP_S02_V_002				
SSCOP_S02_V_003				
SSCOP_S02_V_004				
SSCOP_S02_V_005				
SSCOP_S02_V_006				
SSCOP_S02_V_007				
SSCOP_S02_V_008				
SSCOP_S02_V_009				
SSCOP_S02_V_010				
SSCOP_S02_V_011				
SSCOP_S02_V_012				
SSCOP_S02_V_013				
SSCOP_S02_V_014				
SSCOP_S02_V_015				
SSCOP_S02_V_016				
SSCOP_S02_V_017				
SSCOP_S02_I_018				
SSCOP_S02_I_019				
SSCOP_S02_IV_020				
SSCOP_S02_IV_021				
SSCOP_S02_IV_022				
SSCOP_S02_IV_023				
SSCOP_S02_IV_024				
SSCOP_S02_IV_025				
SSCOP_S02_IV_026				
SSCOP_S02_IV_027				
SSCOP_S02_IV_028				
SSCOP_S02_IV_029				
SSCOP_S02_IV_030				
SSCOP_S02_IV_031				
SSCOP_S02_IV_032				
SSCOP_S02_IV_033				
SSCOP_S02_IV_034				
SSCOP_S02_IV_035				
SSCOP_S02_IV_036				
SSCOP_S02_IV_037				
SSCOP_S02_IV_038				
SSCOP_S02_IV_039				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
SSCOP_S02_IV_040				
SSCOP_S02_IV_041				
SSCOP_S02_IV_042				
SSCOP_S02_IV_043				
SSCOP_S02_IV_044				
SSCOP_S02_IV_045				
SSCOP_S02_IV_046				
SSCOP_S02_IV_047				
SSCOP_S02_IV_048				
SSCOP_S02_IV_049				
SSCOP_S02_IV_050				
SSCOP_S02_IV_051				
SSCOP_S02_IV_052				
SSCOP_S02_IV_053				
SSCOP_S02_IV_054				
SSCOP_S02_IV_055				
SSCOP_S02_IV_056				
SSCOP_S02_IV_057				
SSCOP_S04_V_001				
SSCOP_S04_V_002				
SSCOP_S04_V_003				
SSCOP_S04_V_007				
SSCOP_S04_V_008				
SSCOP_S04_V_009				
SSCOP_S04_V_010				
SSCOP_S04_V_011				
SSCOP_S04_V_012				
SSCOP_S04_V_013				
SSCOP_S04_V_014				
SSCOP_S04_V_015				
SSCOP_S04_V_016				
SSCOP_S04_V_017				
SSCOP_S04_V_018				
SSCOP_S04_V_019				
SSCOP_S04_V_020				
SSCOP_S04_I_021				
SSCOP_S04_I_022				
SSCOP_S04_IV_023				
SSCOP_S04_IV_024				
SSCOP_S04_IV_025				
SSCOP_S04_IV_026				
SSCOP_S04_IV_027				
SSCOP_S04_IV_028				
SSCOP_S04_IV_029				
SSCOP_S04_IV_030				
SSCOP_S04_IV_031				
SSCOP_S04_IV_032				
SSCOP_S04_IV_033				
SSCOP_S04_IV_034				
SSCOP_S04_IV_035				
SSCOP_S04_IV_036				
SSCOP_S04_IV_037				
SSCOP_S04_IV_038				
SSCOP_S04_IV_039				
SSCOP_S04_IV_040				
SSCOP_S04_IV_041				
SSCOP_S04_IV_042				
SSCOP_S04_IV_043				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
SSCOP_S04_IV_044				
SSCOP_S04_IV_045				
SSCOP_S04_IV_046				
SSCOP_S04_IV_047				
SSCOP_S04_IV_048				
SSCOP_S04_IV_049				
SSCOP_S04_IV_050				
SSCOP_S04_IV_051				
SSCOP_S04_IV_052				
SSCOP_S04_IV_053				
SSCOP_S04_IV_054				
SSCOP_S04_IV_055				
SSCOP_S04_IV_056				
SSCOP_S04_IV_057				
SSCOP_S04_IV_058				
SSCOP_S04_T_059				
SSCOP_S04_T_060				
SSCOP_S05_V_001				
SSCOP_S05_V_002				
SSCOP_S05_V_003				
SSCOP_S05_V_004				
SSCOP_S05_V_005				
SSCOP_S05_V_006				
SSCOP_S05_V_007				
SSCOP_S05_V_008				
SSCOP_S05_V_009				
SSCOP_S05_V_010				
SSCOP_S05_V_011				
SSCOP_S05_V_012				
SSCOP_S05_V_013				
SSCOP_S05_V_014				
SSCOP_S05_V_015				
SSCOP_S05_V_016				
SSCOP_S05_I_017				
SSCOP_S05_I_018				
SSCOP_S05_I_019				
SSCOP_S05_I_020				
SSCOP_S05_IV_021				
SSCOP_S05_IV_022				
SSCOP_S05_IV_023				
SSCOP_S05_IV_024				
SSCOP_S05_IV_025				
SSCOP_S05_IV_026				
SSCOP_S05_IV_027				
SSCOP_S05_IV_028				
SSCOP_S05_IV_029				
SSCOP_S05_IV_030				
SSCOP_S05_IV_031				
SSCOP_S05_IV_032				
SSCOP_S05_IV_033				
SSCOP_S05_IV_034				
SSCOP_S05_IV_035				
SSCOP_S05_IV_036				
SSCOP_S05_IV_037				
SSCOP_S05_IV_038				
SSCOP_S05_IV_039				
SSCOP_S05_IV_040				
SSCOP_S05_IV_041				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
SSCOP_S05_IV_042				
SSCOP_S05_IV_043				
SSCOP_S05_IV_044				
SSCOP_S05_IV_045				
SSCOP_S05_IV_046				
SSCOP_S05_IV_047				
SSCOP_S05_IV_048				
SSCOP_S05_IV_049				
SSCOP_S05_IV_050				
SSCOP_S05_IV_051				
SSCOP_S05_IV_052				
SSCOP_S05_IV_053				
SSCOP_S05_IV_054				
SSCOP_S05_IV_055				
SSCOP_S05_IV_056				
SSCOP_S05_T_057				
SSCOP_S05_T_058				
SSCOP_S07_V_001				
SSCOP_S07_V_002				
SSCOP_S07_V_003				
SSCOP_S07_V_004				
SSCOP_S07_V_005				
SSCOP_S07_V_006				
SSCOP_S07_V_007				
SSCOP_S07_V_008				
SSCOP_S07_V_009				
SSCOP_S07_V_010				
SSCOP_S07_V_011				
SSCOP_S07_V_012				
SSCOP_S07_I_013				
SSCOP_S07_I_014				
SSCOP_S07_I_015				
SSCOP_S07_I_016				
SSCOP_S07_I_017				
SSCOP_S07_I_018				
SSCOP_S07_I_019				
SSCOP_S07_I_020				
SSCOP_S07_I_021				
SSCOP_S07_IV_022				
SSCOP_S07_IV_023				
SSCOP_S07_IV_024				
SSCOP_S07_IV_025				
SSCOP_S07_IV_026				
SSCOP_S07_IV_027				
SSCOP_S07_IV_028				
SSCOP_S07_IV_029				
SSCOP_S07_IV_030				
SSCOP_S07_IV_031				
SSCOP_S07_IV_032				
SSCOP_S07_IV_033				
SSCOP_S07_IV_034				
SSCOP_S07_IV_035				
SSCOP_S07_IV_036				
SSCOP_S07_IV_037				
SSCOP_S07_IV_038				
SSCOP_S07_IV_039				
SSCOP_S07_IV_040				
SSCOP_S07_IV_041				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
SSCOP_S07_IV_042				
SSCOP_S07_IV_043				
SSCOP_S07_IV_044				
SSCOP_S07_IV_045				
SSCOP_S07_IV_046				
SSCOP_S07_IV_047				
SSCOP_S07_IV_048				
SSCOP_S07_IV_049				
SSCOP_S07_IV_050				
SSCOP_S07_IV_051				
SSCOP_S07_IV_052				
SSCOP_S07_IV_053				
SSCOP_S07_IV_054				
SSCOP_S07_IV_055				
SSCOP_S07_IV_056				
SSCOP_S07_IV_057				
SSCOP_S07_T_058				
SSCOP_S07_T_059				
SSCOP_S10_V_001				
SSCOP_S10_V_002				
SSCOP_S10_V_003				
SSCOP_S10_V_004				
SSCOP_S10_V_005				
SSCOP_S10_V_006				
SSCOP_S10_V_007				
SSCOP_S10_V_008				
SSCOP_S10_V_009				
SSCOP_S10_V_010				
SSCOP_S10_V_011				
SSCOP_S10_V_012				
SSCOP_S10_V_013				
SSCOP_S10_V_014				
SSCOP_S10_V_015				
SSCOP_S10_V_016				
SSCOP_S10_V_017				
SSCOP_S10_V_018				
SSCOP_S10_V_019				
SSCOP_S10_V_020				
SSCOP_S10_V_021				
SSCOP_S10_I_022				
SSCOP_S10_I_023				
SSCOP_S10_I_024				
SSCOP_S10_I_025				
SSCOP_S10_I_026				
SSCOP_S10_I_027				
SSCOP_S10_I_028				
SSCOP_S10_I_029				
SSCOP_S10_I_030				
SSCOP_S10_I_031				
SSCOP_S10_I_032				
SSCOP_S10_I_033				
SSCOP_S10_I_034				
SSCOP_S10_I_035				
SSCOP_S10_I_036				
SSCOP_S10_I_037				
SSCOP_S10_I_038				
SSCOP_S10_I_039				
SSCOP_S10_I_040				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
SSCOP_S10_I_041				
SSCOP_S10_I_042				
SSCOP_S10_I_043				
SSCOP_S10_I_044				
SSCOP_S10_IV_045				
SSCOP_S10_IV_046				
SSCOP_S10_IV_047				
SSCOP_S10_IV_048				
SSCOP_S10_IV_049				
SSCOP_S10_IV_050				
SSCOP_S10_IV_051				
SSCOP_S10_IV_052				
SSCOP_S10_IV_053				
SSCOP_S10_IV_054				
SSCOP_S10_IV_055				
SSCOP_S10_IV_056				
SSCOP_S10_IV_057				
SSCOP_S10_IV_058				
SSCOP_S10_IV_059				
SSCOP_S10_IV_060				
SSCOP_S10_IV_061				
SSCOP_S10_IV_062				
SSCOP_S10_IV_063				
SSCOP_S10_IV_064				
SSCOP_S10_IV_065				
SSCOP_S10_IV_066				
SSCOP_S10_IV_067				
SSCOP_S10_IV_068				
SSCOP_S10_IV_069				
SSCOP_S10_IV_070				
SSCOP_S10_IV_071				
SSCOP_S10_IV_072				
SSCOP_S10_IV_073				
SSCOP_S10_IV_074				
SSCOP_S10_IV_075				
SSCOP_S10_IV_076				
SSCOP_S10_IV_077				
SSCOP_S10_IV_078				
SSCOP_S10_IV_079				
SSCOP_S10_IV_080				
SSCOP_S10_T_081				
SSCOP_S10_T_082				
SSCOP_S10_T_083				
SSCOP_S10_T_084				

A.7 Observations

Additional information relevant to the technical content of the PCTR are given here.

.....

Annex B (normative): Partial PIXIT proforma

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document may freely reproduce the partial PIXIT proforma in this annex so that it can be used for its intended purposes and may further publish the completed PIXIT.

B.1 Identification summary

PIXIT number:

.....

Test laboratory name:

.....

Date of issue:

.....

Issued to:

.....

B.2 Abstract test suite summary

Protocol specification: ETS 300 436-1

ATS specification: ETS 300 436-4

Abstract test method: Remote test method (see ISO/IEC 9646-2)

B.3 Test laboratory

Test laboratory identification:

.....

Accreditation status of the test service:

.....

Accreditation reference:

.....

Test laboratory manager:

.....

Test laboratory contact:

.....

Means of Testing:

.....

Test laboratory instructions for completion:

.....

B.4 Client (of the test laboratory)

Client identification:

.....

Client test manager:

.....

Client contact:

.....

Test facilities required:

.....

B.5 SUT

Name:

.....

Version:

.....

SCS reference:

.....

Machine configuration:

.....

Operating system identification:

.....

IUT identification:

.....

PICS (all layers):

.....

.....

Limitations of the SUT:

.....

Environmental conditions:

.....

B.6 Protocol information

B.6.1 Protocol identification

Specification reference: ETS 300 436-1

Protocol version:

PICS reference:

NOTE: The PICS reference should reference a completed PICS which is conformant with the PICS proforma contained in ETS 300 436-2.

B.6.2 Configuration to be tested

Table B.1: Configuration to be tested

Item	Configuration: Can the IUT access to be tested ...	Supported? (Y/N)
1.1	... support the UNI access functionality?	
1.2	... support the NNI access functionality?	

B.6.3 Configuration options

Table B.2: Configuration options

Item	Configuration: What actions, if possible, have to be taken to configure the IUT to ...	Supported? (Y/N)	Stimulus (action taken)
2.1	subscribe to the ATM UNI?		
2.2	subscribe to the ATM NNI?		
2.3	support the Local Data Retrieve function?		
2.4	support the buffer release procedure?		
2.5	send a local signal UD queued up by the IUT?		
2.6	send a local signal MD queued up by the IUT?		
2.7	set the "Lower Layer Busy = NO" of the IUT?		
2.8	put the IUT into state 05?		

B.6.4 Test management timers

Table B.3: Timer values

Item	Timer values: Give a value for the timer used to ...	Value (in seconds)
3.1	wait between transmission of BGN, END, ER and RS PDU (TimerCC).	
3.2	wait between transmission of POLL PDU at active phase (TimerPOLL).	
3.3	wait between transmission of POLL PDU at transient phase (TimerKEEP_ALIVE).	
3.4	wait the maximum time interval during which at least one STAT PDU needs to be received (TimerNO_RESPONSE).	
3.5	wait for no action taken (TimerIDLE).	
3.6	wait, if no response is expected from the IUT (T_Wait).	

B.6.5 Sending of messages by IUT

Table B.4: Actions required to stimulate the IUT to send messages

Item	Actions: What actions, if possible, have to be taken to cause the IUT to send a ...	Supported? (Y/N)	Stimulus (action taken
4.1	RS PDU and enter in state 05?		
4.2	BGN PDU on demand from the SSCF layer?		
4.3	END PDU on demand from the SSCF layer?		
4.4	UD PDU, activating the local signal "UD queued up" when "Local layer busy = NO"?		
4.5	MD PDU, activating the local signal "MD queued up" when "Local layer busy = NO"?		
4.6	SD PDU?		
4.7	number of SD PDU equal to MaxPD before expiry of TimerPOLL?		

B.6.6 Parameter values

Table B.5: Parameter values

Item	Parameter values:	Allowed values	Value
5.1	What maximal number of transmission of a BGN, END, ER or RS PDU is used (MaxCC)?		
5.2	What maximal number of transmission of SD PDU is used before transmission of a POLL PDU (MaxPD)?		
5.3	What is the maximal number of list elements used in a STAT PDU (MaxSTAT)?	Odd value ≥ 3 ; default: 67	
5.4	What is the maximal length of the information field in a SD, DU or MD PDU (Info_Max_Len)?	Derivation of maximum length PDU size possible	
5.5	What maximal length of the variable length SSCOP-UU field is used (UU_Max_Len)?		
5.6	What value of the buffer release parameter BR is used to handle the release of the transmission buffer and the transmission queue?	"Yes" / "No"	
5.7	What value of the timer WAITtime is used to limit the test time waiting for "no response" from the IUT?	seconds	
5.8	What value of the timer TESTtime is used which is long enough to allow the test operator intervention?	seconds	

Annex C (normative): Abstract Test Suite (ATS)

This ATS has been produced using the Tree and Tabular Combined Notation (TTCN) according to ISO/IEC 9646-3 [8].

The ATS was developed on a separate TTCN software tool and therefore the TTCN tables are not completely referenced in the contents table. The ATS itself contains a test suite overview part which provides additional information and references (see also annex D).

C.1 The TTCN Graphical form (TTCN.GR)

The TTCN.GR representation of this ATS is contained in an Adobe Portable Document Format™ file (sscop.PDF contained in archive 4364_ep.LZH) which accompanies the present document.

C.2 The TTCN Machine Processable form (TTCN.MP)

The TTCN.MP representation corresponding to this ATS is contained in an ASCII file (sscop.MP contained in archive 4364_ep.LZH) which accompanies the present document.

NOTE: According to ISO/IEC 9646-3 [8], in case of a conflict in interpretation of the operational semantics of TTCN.GR and TTCN.MP, the operational semantics of the TTCN.GR representation takes precedence.

Annex D (informative): General structure of ATS

This annex gives a simple listing of the order of types of tables which appear in a typical ATS. This is intended as an aid in helping readers find particular sections quickly.

Test Suite Overview

Test Suite Structure

Test Case Index

Test Step Index

Default Index

Declarations Part

Simple Type Definitions

Structured Type Definitions

Test Suite Parameter Declarations

Test Case Selection Expression Definitions

Test Suite Constant Declarations

Test Case Variable Declarations

PCO Declarations

Timer Declarations

Test Component Declarations

Test Components Configuration Declarations

TTCN ASP Type Definition

TTCN PDU Type Definition

TTCN CM Type Definition

Alias Definitions

Constraints Part

Structured Type Constraint Declarations

TTCN ASP Constraint Declarations

TTCN PDU Constraint Declarations

TTCN CM Constraint Declarations

Dynamic Part

Test Case Dynamic Behaviour

Test Step Dynamic Behaviour

Default Dynamic Behaviour

History

Document history	
July 1998	Public Enquiry PE 9846: 1998-07-17 to 1998-11-13