

**Broadband Integrated Services Digital Network (B-ISDN);  
AAL Type 2 Signalling Protocol;  
Capability Set 1;  
Part 4: Abstract Test Suite (ATS) and partial Protocol  
Implementation eXtra Information for Testing (PIXIT)  
proforma specification**

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Reference

DEN/SPAN-130211-4

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Keywords

AAL, ATM, ATS, B-ISDN, broadband, DSS2,  
PIXIT, testing

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## Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN), and is now submitted for the Vote phase of the ETSI standards Two-step Approval Procedure.

The present document is part 4 of a multi-part deliverable covering the User-Network Interface (UNI) and the Network-Network Interface (NNI) signalling protocol specification for the Broadband Integrated Services Digital Network (B-ISDN) for AAL Type 2 bearer connection control, as identified below:

- Part 1: "Protocol specification [ITU-T Recommendation Q.2630.1 (1999), 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".**

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

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# 1 Scope

The present document provides the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma for the AAL type 2 Signalling Protocol as specified in EN 301 816-1 [1].

The present document is applicable between AAL type 2 nodes and describes nodal functions that are used to control AAL type 2 point-to-point bearer connections.

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.

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# 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 and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

- [1] ETSI EN 301 816-1 (V1.1.1): "Broadband Integrated Services Digital Network (B-ISDN); AAL Type 2 Signalling protocol; Capability Set 1; Part 1: Protocol specification [ITU-T Recommendation Q.2630.1 (1999), modified]".
- [2] ETSI EN 301 816-2 (V1.1.1): "Broadband Integrated Services Digital Network (B-ISDN); AAL Type 2 Signalling protocol; Capability Set 1; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".
- [3] ETSI EN 301 816-3 (V1.1.1): "Broadband Integrated Services Digital Network (B-ISDN); AAL Type 2 Signalling protocol; Capability Set 1; Part 3: Test Suite Structure and Test Purposes (TSS&TP) specification".
- [4] ETSI ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [5] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [6] ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".
- [7] ISO/IEC 9646-3: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".
- [8] ISO/IEC 9646-4: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 4: Test realization".
- [9] 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".

---

## 3 Definitions and abbreviations

### 3.1 Definitions

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

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

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

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

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

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

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

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

**Lower Tester (LT):** See ISO/IEC 9646-1 [5].

**Upper Tester (UT):** See ISO/IEC 9646-1 [5].

**Point of Control and Observation (PCO):** See ISO/IEC 9646-1 [5].

### 3.2 Abbreviations

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

ATS	Abstract Test Suite
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

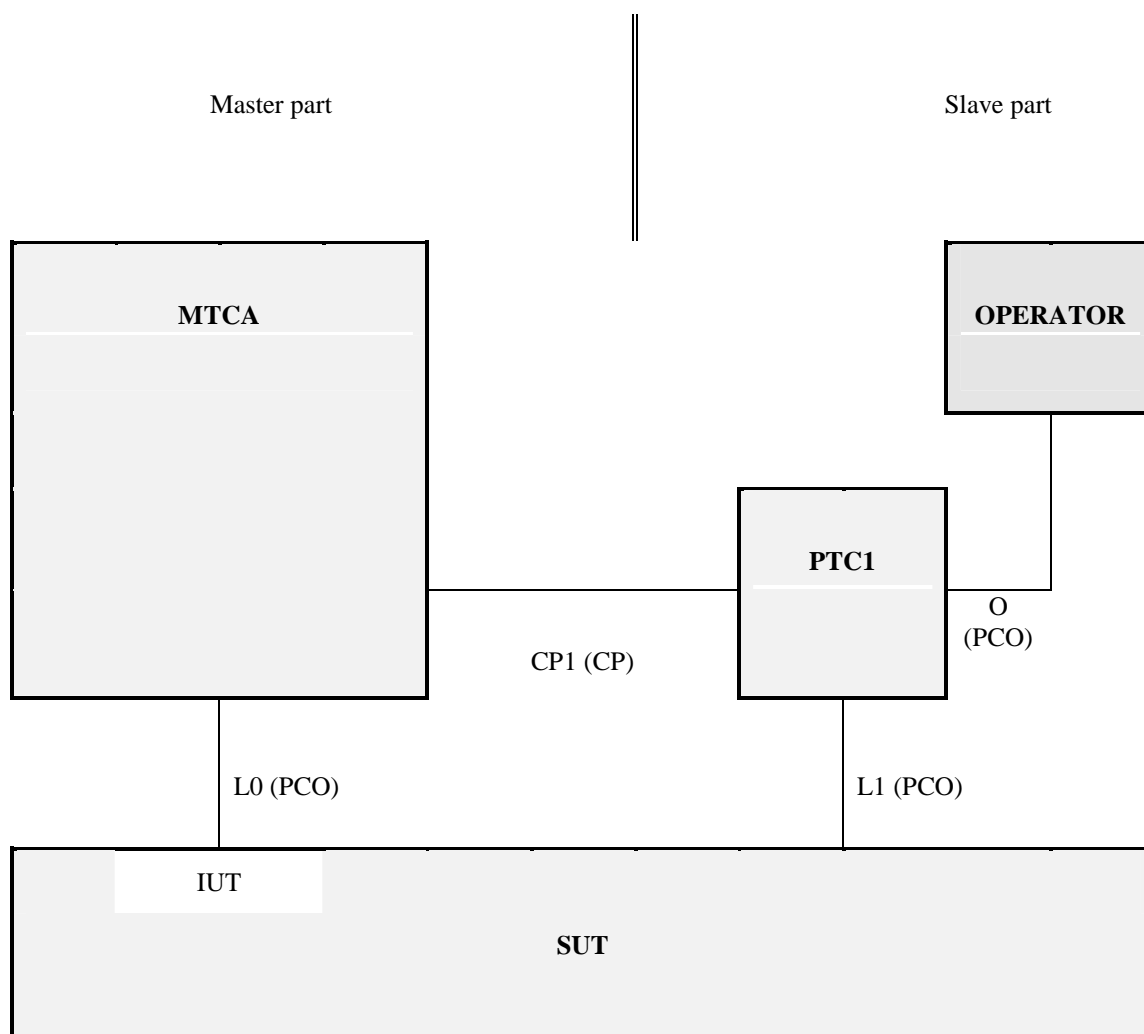
### 4.1 Description of ATM used

For AAL type 2 signalling, the protocol defines different roles that an AAL2 entity can play: it can be an end or transit entity. In the first case, only one interface is used and in the second case, two interfaces are used for testing purposes.

It is possible to specify an ATS based on a single party (remote) test method for such an IUT when acting as an end entity. However, it is considered that an ATS based on such an approach is of limited use as the only way to specify IUT generated PDUs is to use the "implicit send" statement. Many users of such an ATS would replace the "implicit send" statements with descriptions of the behaviour at other interfaces.

An ATS based on a multi-party test method is considered to be more useful in that it is closer to how a real test suite would be constructed. Such a test method specifies behaviour at multiple network interfaces. One very important limitation here is that tests are focussed on one particular interface. Thus the test system is made up one Main Test Component (MTC) and one or more Parallel Test Components (PTC), see figure 1.

## 4.2 Conventions for test components and PCOs



**Figure 1: Multi-party test method**

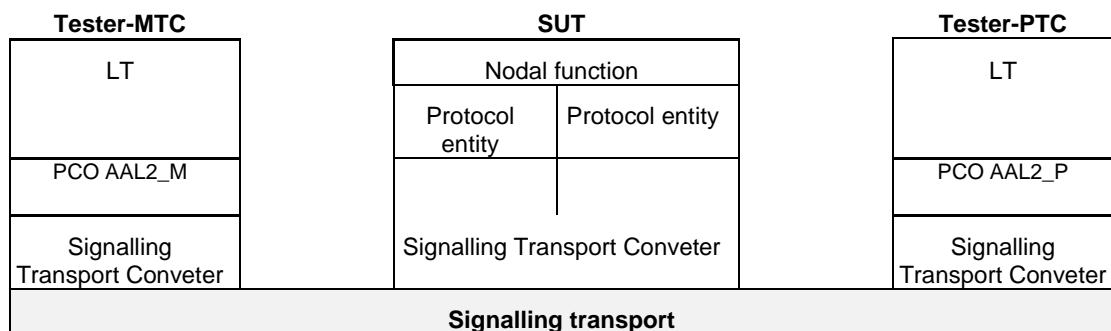
In a master/slave arrangement, the MTC is considered to be the master while the PTCs are the slaves. The "slave" testers are only an explicit description of how to deal with the remote interfaces during the testing process, i.e. "how to make the IUT send the required message".

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. A failure in the correlation between the protocol at the different interfaces to which the different testers are connected, i.e. in the mechanism of the functional service itself, will not cause a FAIL verdict. For instance, if the IUT fails to send a message on the tested interface after another interface has received the proper stimulus, the verdict will be INCONCLUSIVE.

The MTC MTCA has two functions in this configuration. Firstly, it has the MTC function of controlling the one PTC. Thus it is responsible for starting the PTC and afterwards coordinates activities by exchanging Coordination Messages (CM) with the PTCs. Secondly it is responsible for the behaviour of the Lower Tester (LT) at PCO AAL2\_M.

A combination of the remote and multi-party test methods is applied. As can be seen from figure 1, several PCOs are used.





**Figure 2: Combination of the remote and multi-party test methods**

The MTC PCO is named "AAL2\_M" ("M" for Main). The AAL2\_M 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. The PTC PTC1 uses PCOs AAL2\_P and O. These PCOs are used to control and, in a limited way, observe the behaviour of the network equipment at interface other than the one under test. No verdicts are assigned at this PCO. The AAL2\_P PCO is only used for transit AAL type 2 entity.

ISO/IEC 9646-2 [6] 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. As an alternative of L1, the O PCO is used for an end AAL type 2 entity.

As stated in a previous clause, the non-receipt of network generated messages at AAL2\_M, which are stimulated by events at the AAL2\_M, will result in INCONCLUSIVE rather than FAIL verdicts being assigned.

In test cases which verify that the IUT rejects invalid or unacceptable PDUs, no PTC is activated at all, as these procedures are considered local to the access between IUT and MTC.

### 4.3 Implementation instructions

The sequence of the parameters in an AAL type 2 message is unconstrained according to EN 301 816-1 [1] clause 7.1.1 c). Thus there is no possibility to define such types and constraints in TTCN the parameters appear in a message in ascending numeric order of the parameter identifiers. If a message is received in different order, the implementors task is to put the parameters in the received message such order before the execution of TTCN matching mechanism.

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## 5 Untestable test purposes

There are no untestable test purposes associated with this ATS.

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## 6 ATS to TP map

The identifiers used for the TPs (see EN 301 816-3 [3]) are reused as test case names. Thus there is a straightforward one-to-one mapping except the test purposes for releasing a connection. These TPs are duplicated for the Incoming and the Outgoing protocol entities. In this case the TP name is used ended with "a" for Outgoing and "b" for Incoming protocol entities.

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## 7 PCTR conformance

A test laboratory, when requested by a client to produce a PCTR, is required, as specified in ISO/IEC 9646-5 [9], to produce a PCTR conformant with the PCTR template given in annex B of ISO/IEC 9646-5 [9].

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.

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## 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 [8], 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 [9], 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.

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## 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 [8]. 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 [9].

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:	EN 301 816-1
PICS:	
Previous PCTRs (if any):	

#### A.1.3 Testing environment

PIXIT Reference number:	
ATS Specification:	EN 301 816-4
Abstract Test Method:	Remote 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.*

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## 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.*

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## A.2 IUT Conformance status

This IUT has or 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 the present document) 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".*

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## A.3 Static conformance summary

The PICS for this IUT is or 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 or 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 the present document) strike the words "did or", otherwise strike the words "or did not".*

Summary of the results of groups of tests:

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## A.5 Static conformance review report

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

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## A.6 Test campaign report

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
AAL2_111_01				
AAL2_111_02				
AAL2_111_03				
AAL2_111_04				
AAL2_112_01				
AAL2_112_02				
AAL2_112_03				
AAL2_112_04				
AAL2_112_05				
AAL2_112_06				
AAL2_112_07				
AAL2_112_08				
AAL2_112_09				
AAL2_112_10				
AAL2_112_11				
AAL2_112_12				
AAL2_112_13				
AAL2_112_14				
AAL2_112_15				
AAL2_112_16				
AAL2_112_17				
AAL2_112_18				
AAL2_112_19				

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
AAL2_112_20				
AAL2_112_21				
AAL2_112_22				
AAL2_112_23				
AAL2_113_01				
AAL2_113_02				
AAL2_121_01				
AAL2_121_02				
AAL2_121_03				
AAL2_121_04				
AAL2_121_05				
AAL2_121_06				
AAL2_121_07				
AAL2_121_08				
AAL2_121_09				
AAL2_121_10				
AAL2_121_11				
AAL2_121_12				
AAL2_121_13				
AAL2_121_14				
AAL2_121_15				
AAL2_122_01				
AAL2_122_02				
AAL2_122_03				
AAL2_122_04				
AAL2_122_05				
AAL2_122_06				
AAL2_122_07				
AAL2_122_08				
AAL2_122_09				
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AAL2_122_11				
AAL2_122_12				
AAL2_122_13				
AAL2_122_14				
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AAL2_122_17				
AAL2_122_18				
AAL2_122_19				
AAL2_122_20				
AAL2_122_21				
AAL2_123_01				
AAL2_211_01a				
AAL2_211_02a				
AAL2_211_03a				
AAL2_211_04a				
AAL2_211_05a				
AAL2_211_06a				
AAL2_211_07a				
AAL2_212_01a				
AAL2_212_02a				
AAL2_212_03a				
AAL2_212_04a				
AAL2_212_05a				
AAL2_212_06a				
AAL2_212_07a				
AAL2_212_08a				
AAL2_212_09a				
AAL2_212_10a				
AAL2_212_11a				
AAL2_212_12a				

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
AAL2_212_13a				
AAL2_212_14a				
AAL2_212_15a				
AAL2_212_16a				
AAL2_212_17a				
AAL2_212_18a				
AAL2_212_19a				
AAL2_212_20a				
AAL2_212_21a				
AAL2_212_22a				
AAL2_212_23a				
AAL2_212_24a				
AAL2_212_25a				
AAL2_213_01a				
AAL2_213_02a				
AAL2_221_01a				
AAL2_222_01a				
AAL2_222_02a				
AAL2_222_03a				
AAL2_222_04a				
AAL2_222_05a				
AAL2_222_06a				
AAL2_222_07a				
AAL2_222_08a				
AAL2_222_09a				
AAL2_222_10a				
AAL2_222_11a				
AAL2_211_01b				
AAL2_211_02b				
AAL2_211_03b				
AAL2_211_04b				
AAL2_211_05b				
AAL2_211_06b				
AAL2_211_07b				
AAL2_212_01b				
AAL2_212_02b				
AAL2_212_03b				
AAL2_212_04b				
AAL2_212_05b				
AAL2_212_06b				
AAL2_212_07b				
AAL2_212_08b				
AAL2_212_09b				
AAL2_212_10b				
AAL2_212_11b				
AAL2_212_12b				
AAL2_212_13b				
AAL2_212_14b				
AAL2_212_15b				
AAL2_212_16b				
AAL2_212_17b				
AAL2_212_18b				
AAL2_212_19b				
AAL2_212_20b				
AAL2_212_21b				
AAL2_212_22b				
AAL2_212_23b				
AAL2_212_24b				
AAL2_212_25b				
AAL2_213_01b				
AAL2_213_02b				
AAL2_221_01b				

ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
AAL2_222_01b				
AAL2_222_02b				
AAL2_222_03b				
AAL2_222_04b				
AAL2_222_05b				
AAL2_222_06b				
AAL2_222_07b				
AAL2_222_08b				
AAL2_222_09b				
AAL2_222_10b				
AAL2_222_11b				
AAL2_311_01				
AAL2_311_02				
AAL2_311_03				
AAL2_311_04				
AAL2_311_05				
AAL2_311_06				
AAL2_311_07				
AAL2_312_01				
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AAL2_312_03				
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AAL2_312_06				
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AAL2_312_09				
AAL2_312_10				
AAL2_312_11				
AAL2_312_12				
AAL2_312_13				
AAL2_312_14				
AAL2_312_15				
AAL2_312_16				
AAL2_313_01				
AAL2_313_02				
AAL2_321_01				
AAL2_321_02				
AAL2_321_03				
AAL2_321_04				
AAL2_321_05				
AAL2_322_01				
AAL2_322_02				
AAL2_322_03				
AAL2_322_04				
AAL2_322_05				
AAL2_322_06				
AAL2_322_07				
AAL2_411_01				
AAL2_411_02				
AAL2_411_03				
AAL2_411_04				
AAL2_411_05				
AAL2_411_06				
AAL2_412_01				
AAL2_412_02				
AAL2_412_03				
AAL2_412_04				
AAL2_412_05				
AAL2_412_06				
AAL2_412_07				
AAL2_412_08				



ATS Reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
AAL2_412_09				
AAL2_412_10				
AAL2_412_11				
AAL2_412_12				
AAL2_412_13				
AAL2_412_14				
AAL2_412_15				
AAL2_412_16				
AAL2_413_01				
AAL2_413_02				
AAL2_421_01				
AAL2_421_02				
AAL2_422_01				
AAL2_422_02				
AAL2_422_03				
AAL2_422_04				
AAL2_422_05				
AAL2_422_06				
AAL2_422_07				
AAL2_422_08				
AAL2_422_09				
AAL2_422_10				
AAL2_422_11				
AAL2_422_12				
AAL2_422_13				
AAL2_422_14				

---

## 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 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: EN 301 816-1

ATS Specification: EN 301 816-4

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: EN 301 816-1

Protocol Version:

PICS Reference:

.....

NOTE: The PICS Reference should reference a completed PICS which is conformant with the PICS proforma contained in EN 301 816-2.

### B.6.2 Configuration to be tested

**Table B.1: Configuration to be tested**

Item	Configuration The access to be tested ...	Supported Y/N
1.1	uses NSAP type endpoint addresses.	

### B.6.3 Stimuli for the IUT

**Table B.2: Actions required to stimulate the IUT**

Item	Action What actions, if possible, have to be taken to ...	Supported Y/N	Stimulus (action taken)
2.1	configure the IUT to not pass on an unrecognized message or parameter?		
2.2	configure the IUT to not have any AAL type 2 path available?		
2.3	configure the IUT to fail SAID allocation?		
2.4	configure the IUT to not support given AAL parameters?		
2.5	configure the IUT to not have enough internal resources because of equipment congestion?		
2.6	configure the IUT to not have a selectable route?		
2.7	configure the IUT to not have resource to select a channel?		
2.8	configure the IUT to not have enough resources?		
2.9	configure the IUT to indicate the network is out of order?		
2.10	configure the IUT to indicate temporary failure?		

## B.6.4 Test management timers

**Table B.3: Timer values**

Item	Timer Give a value for the timer that is used ...	Value (in seconds)
3.1	as a timer_ERQ.	
3.2	as a timer_REL.	
3.3	as a timer_RES.	
3.4	as a timer_BLO.	
3.5	as a timer_UBL.	
3.6	to wait for the IUT to respond to a stimulus sent by the tester (TAC).	
3.7	to control that the IUT does not respond to a stimulus sent by the tester (TNOAC).	
3.8	to wait for the test operator to perform an implicit send action or to wait for a PTC to react (TWAIT).	
NOTE:	The IUT provider may fill in a value range rather than a fixed value for the test management timers. During test execution the test laboratory will choose specific values for the timers dependant on the means of testing used. These specific values may even be beyond the range given by the IUT provider, if this is necessary for achieving satisfactory test results.	

## B.6.5 Parameter Values

**Table B.4: Parameter values**

Item	Parameter values Give ...	Value
Path and channel identifiers		
4.1	an AAL type 2 path identifier that is used for testing.	
4.2	an AAL type 2 channel identifier that is used for testing.	
Service endpoint addresses		
4.3	a valid NSAP address to be sent to the IUT.	
4.4.1	a valid E.164 Nature of address to be sent to the IUT.	
4.4.2	a length of the E.164 address to be sent to the IUT.	
4.4.3	a valid E.164 address to be sent to the IUT.	
4.5	an unallocated NSAP address to be sent to the IUT.	
4.6	an unallocated E.164 address to be sent to the IUT (using the same length as a valid number).	
4.7	a NSAP address to be sent to the IUT which has no root assigned.	
4.8	an E.164 address to be sent to the IUT which has no root assigned (using the same length as a valid number).	
Service endpoint addresses of the MTC (to be sent by the PTC)		
4.9	a valid NSAP address of the MTC.	
4.10.1	a valid E.164 Nature of address of the MTC.	
4.10.2	a length of the E.164 address of the MTC.	
4.10.3	a valid E.164 address of the MTC.	
Error values		
4.11	a value for an unrecognized message type identifier.	
4.12	a value for an unrecognized parameter identifier.	
4.13	a value for another unrecognized parameter identifier.	

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## 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 [7].

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

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

The TTCN.GR representation of this ATS is contained in an Adobe Portable Document Format™ file (816\_4\_4.PDF contained in archive en\_30181604v010102v0.ZIP) which accompanies the present document.

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

The TTCN.MP representation corresponding to this ATS is contained in an ASCII file (816\_4\_4.MP contained in archive en\_30181604v010102v0.ZIP) which accompanies the present document.

**NOTE:** Where an ETSI Abstract Test Suite (in TTCN) is published in both .GR and .MP format these two forms shall be considered equivalent. In the event that there appears to be syntactical or semantic differences between the two then the problem shall be resolved and the erroneous format (whichever it is) shall be corrected.

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## History

<b>Document history</b>			
V1.1.1	July 2001	Public Enquiry	PE 20011116: 2001-07-18 to 2001-11-16
V1.1.2	February 2002	Vote	V 20020405: 2002-02-04 to 2002-04-05