



INTERIM
EUROPEAN
TELECOMMUNICATION
STANDARD

FINAL DRAFT
pr I-ETS 300 697-2

December 1997

Source: TE

Reference: DI/TE-02028-3

ICS: 33.020

Key words: ISDN, PCI, ATS, testing

**Integrated Services Digital Network (ISDN);
Conformance testing for the Euro-ISDN Programming
Communication Interface (PCI);
Part 2: Abstract Test Suite (ATS) specification
for the PCI User Facility (PUF)**

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Foreword

the second part of this draft Interim European Telecommunication Standard (I-ETS) has been produced by the Terminal Equipment (TE) Technical Committee of the European Telecommunications Standards Institute (ETSI), and is now submitted for the Voting phase of the ETSI standards approval procedure.

An ETSI standard may be given I-ETS status either because it is regarded as a provisional solution ahead of a more advanced standard, or because it is immature and requires a "trial period". The life of an I-ETS is limited to three years after which it can be converted into an ETS, have its life extended for a further two years, be replaced by a new version, or be withdrawn.

This is the second part of a draft I-ETS which comprises four Parts:

"Integrated Services Digital Network (ISDN); Conformance testing for the Euro-ISDN Programming Communication Interface (PCI);

part 1: "Test Suite Structure and Test Purposes (TSS&TP) for the PCI User Facility (PUF);

part 2: "Abstract Test Suite (ATS) for the PCI User Facility (PUF);

part 3: "Test Suite Structure and Test Purposes (TSS&TP) for the Network Access Facility (NAF);

part 4: "Abstract Test Suite (ATS) for the Network Access Facility (NAF)".

Annexes A, B and C to this part of the I-ETS are normative whereas annex D is informative.

Proposed announcement date	
Date of latest announcement of this I-ETS (doa):	3 months after ETSI publication

Introduction

I-ETS 300 697, Parts 1 to 4 comprises the Test Suite Structure and Test Purposes (TSS&TP) and the Abstract Test Suites (ATS) to ETS 300 325 [1]. The Euro-ISDN PCI is a PCI which provides access to the Euro-ISDN. The basic model of the ISDN PCI consists of two entities, a service user called the PCI User Facility (PUF) and a service provider called the Network Access Facility (NAF). For the purpose of conformance testing, the PUF and the NAF are treated separately. This is because the PUF manufacturer and the NAF manufacturer may be completely different and their testing needs should be treated separately. Each part is tested to ensure that they each meet the conformance requirements of the ETS and to increase their probability of inter-operating. This is the reason why a separate TSS&TP and a separate ATS has been produced for each of the PCI User Facility (PUF) and the Network Access Facility (NAF).

All Parts have been produced according to ISO/IEC 9646 [2, 3, 4, 5, 6] and ETS 300 406 [8].

As stated above, this I-ETS is structured in four parts:

- part 1 contains the TSS&TP for the PUF;
- **part 2 contains the ATS for the PUF;**
- part 3 contains the TSS&TP for the NAF;
- part 4 contains the ATS for the NAF.

Part 1 (TSS&TP for the PUF) contains all Test Purposes (TPs) for the PUF (PCI messages). It describes what is covered by the TPs for the PUF and what areas of the ETS are not covered. The Test Suite Structure is described and the convention followed in naming the TPs is described. A list of basic interconnection tests is given.

This second Part of the I-ETS (ATS for the PUF) contains the ATS for the PUF (PCI messages). The test method used is described in detail and diagrams explaining the test method are presented. The reasons for choosing that test method are also given. The ATS is written in Tree and Tabular Combined Notation language (TTCN) and the TTCN is contained in annex A. Annex B contains the Protocol Conformance Test Report (PCTR), annex C contains the Implementation eXtra Information for Testing (IXIT) and annex D contains an Implementation Conformance Statement (ICS).

Part 3 (TSS&TP for the NAF) contains all the TPs for the NAF (PCI messages and Exchange Mechanism). It describes what is covered by the TPs for the NAF and what areas of the ETS are not covered. The TSS is described and the TPs are given. A list of basic interconnection tests is given.

Part 4 (ATS for the NAF) contains the ATS for the NAF (PCI messages and Exchange Mechanism). The test method used is described in detail and a diagram explaining the test method is given. The reasons for choosing that test method is also given. The ATS is written in concurrent TTCN and the TTCN is contained in annex A. Annex B contains the PCTR, annex C contains the IXIT and annex D contains an ICS.

NOTE: The ICS in annexes D of part 2 and part 4 are informative as ETS 300 325 [1] already contains an ICS. However, the ICS in ETS 300 325 [1] is not adequate for these ATSS and should eventually be replaced by annex D of part 2 and part 4.

1 Scope

Part 2 of this draft I-ETS contains the Abstract Test Suite (ATS) for the PUF (PCI messages). The test method used is described in detail and diagrams explaining the test method are presented. The reasons for choosing this test method are also given. The Abstract Test Suite is written in TTCN and the TTCN is contained in annex A. Annex B contains the PCTR, annex C contains the IXIT and annex D contains an ICS.

2 References

Part 2 of this draft I-ETS incorporates by dated or 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 this draft I-ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] ETS 300 325 (1994): "Integrated Services Digital Network (ISDN); Programming Communication Interface (PCI) for Euro-ISDN".
- [2] ISO/IEC 9646-1 (1991): "Information Technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [3] ISO/IEC 9646-2 (1991): "Information Technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".
- [4] ISO/IEC 9646-3 (1992): "Information Technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".
- [5] ISO/IEC 9646-5 (1994): "Information Technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 5: Requirements on test laboratories and clients for the conformance assessment process".
- [6] ISO/IEC DIS 9646-7 (1991): "Information Technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statement".
- [7] Draft prETS 300 697-1: "Integrated Services Digital Network (ISDN); Conformance testing for the Euro-ISDN Programming Communication Interface (PCI); Part 1: Test Suite Structure and Test Purposes (TSS&TP) for the PCI User facility (PUF)".
- [8] ETS 300 406 (1995): "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization Methodology".
- [9] ETS 300 080: "Integrated Services Digital Network (ISDN); ISDN lower layer protocols for telematic terminals".
- [10] ISO/IEC 8208 (1990): "Information technology; Data communications - X.25 Packet Layer Protocol for Data Terminal Equipment".
- [11] CCITT Recommendation T.70 (1998): "Network-independent basic transport service for the telematic services".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of part 2 of this draft I-ETS, the terms defined in ETS 300 325 [1], ISO/IEC 9646, Parts 1, 2, 3, 5 and 7 ([2] to [6]) and its amendments and draft amendments apply.

3.2 Abbreviations

For the purposes of this draft I-ETS, the following abbreviations apply:

AOC-E	Advice Of Charging at End of call
API	Application Programming Interface
ASP	Abstract Service Primitive
ATM	Abstract Test Method
ATS	Abstract Test Suite
CLIR	Calling Line Identification Restriction
DDI	Direct Dialling In
ExID	Exchange IDentifier
HDLC	High level Data Link Control
ICS	Implementation Conformance Statement
ISDN	Integrated Services Digital Network
IUT	Implementation Under Test
IXIT	Implementation eXtra Information for Testing
LT	Lower Tester
MTS	Methods for Testing and Specification
NAF	Network Access Facility
NCO	Network Connection Object
NCOID	Network Connection Object Identifier
NMA	Network layer Message Access
OSI	Open Systems Interconnection
PCI	Programming Communication Interface
PCO	Point of Control and Observation
PCTR	Protocol Conformance Test Report
PDU	Protocol Data Unit
PUF	PCI User Facility
SCS	System Conformance Statement
SUT	System Under Test
TC	Test Case
TCV	Test Case Variable
TMA	Transparent Message Access
TP	Test Purpose
TSC	Test Suite Constant
TSO	Test Suite Operation
TSS	Test Suite Structure
TSS&TP	Test Suite Structure & Test Purposes
TSV	Test Suite Variable
TTCN	Tree and Tabular Combined Notation
UT	Upper Tester

4 General constraints for testing and applicable test methods

4.1 Testing model

A Euro-ISDN PCI is an interface and not a protocol standard. ISO/IEC 9646-2 [3] explicitly states that it applies only to protocols of the Open Systems Interconnection (OSI) stack. This means that ISO/IEC 9646-3 [4] cannot be used directly for testing ETS 300 325 [1]. This is why, whilst testing, the layer model is applied to the EURO-ISDN PCI even though this notion does not exist in the ETS itself.

In the EURO-ISDN PCI, it is as if the Exchange Mechanism is a layer below the three planes, Administration, Control and User. The Exchange Mechanism transports the messages of the three planes, just as Layer 2 of a protocol transports Layer 3 Protocol Data Units (PDUs). The Exchange Mechanism provides a service to the 3 planes.

Within this ATS, the upper layer, i.e. the layer of messages of the three planes, is referred to as the "message layer" and the lower layer, i.e. the Exchange Mechanism, is referred to as the "Exchange Mechanism layer". By using this model, ISO 9646, Parts 1, 2 and 3 [2,3,4] terminology can be used and abstract test methods can be defined for each of the layers of this interface standard.

Using this model, PCI messages and the Exchange Mechanism should be tested in two different test suites. Only PCI message testing is dealt with here.

4.2 Test methods for PCI message testing

a) Definitions

As previously stated, ISO 9646, Parts 1, 2 and 3 [2], [3], [4] can be used by mapping its concepts onto PCI concepts.

PDUs: In ISO 9646, Parts 1, 2 and 3 [2,3,4] the data unit tested is called a "PDU", only because it normally applies to protocols. However, the important concept behind this word is "what is tested" In this case, what is tested are PCI messages. However, they shall still be called PDUs in the test suite.

Abstract Service Primitives (ASPs): In ISO 9646, Parts 1, 2 and 3 [2], [3], [4], ASPs are an implementation-independent description of an interface between a service-user and a service-provider. In particular, ASPs transport PDUs between the tested layer N+1 (service-user) and the layer N below (service-provider) in the Lower Tester (LT). In this case, the Exchange Mechanism is the layer below the message layer. Consequently, the description of Exchange Mechanism functions, independent of the operating system, shall be called ASPs in the test suite. According to the test methods described below, they are used within the LT (the NAF emulator).

Each function is translated into a pair of "FunctionName_Ind"/"FunctionName_Rsp" ASPs. A "FunctionName_Ind" contains parameters provided by the PUF and a "FunctionName_Rsp" contains the return parameters provided by the NAF.

EXAMPLE 1: PciDeregister function is translated into two ASPs: PciDeregister_ind with ExID parameter, and PciDeregisterRsp with ErrorCode parameter.

b) Abstract Test Methods (ATMs)

There are two kinds of Test Purposes (TPs):

- one for which a point of observation is located in the LT and the control at the upper interface is not specified and consists only of an implicit specification such as "do whatever is necessary within the System Under Test (SUT) in order to provoke the required behaviour". In TTCN it is specified using the implicit send event, with a reference to a procedural information item in the IXIT in annex C;

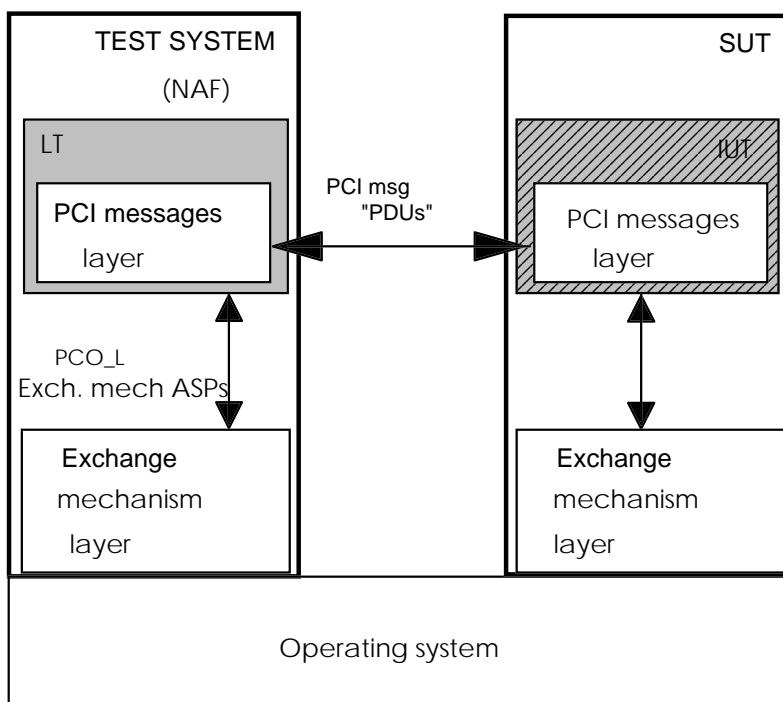
EXAMPLE 2: Ensure that the IUT in order to initiate an outgoing call sends a CConnectReq.

- one for which the point of observation is located at the upper interface of the Implementation Under Test (IUT) (the verdict shall be assigned by the test operator who observes the behaviour of the IUT at the upper interface). What is to be observed at this interface is not defined in ETS 300 325 [1] and may vary greatly from IUT to IUT, therefore, the required observations are described as upper interface observation items in the IXIT. The point of control is located in the LT. These TPs are the "OP" (optional) TPs and may be de-selected as a group by answering "NO" to an IXIT item. For more details, see draft prETS 300 697-1 [7].

EXAMPLE 3: Ensure that the IUT, on receiving a CAAlertInd message, reacts as stated in the IXIT.

There are two different ATMs to deal with these two kinds of TPs:

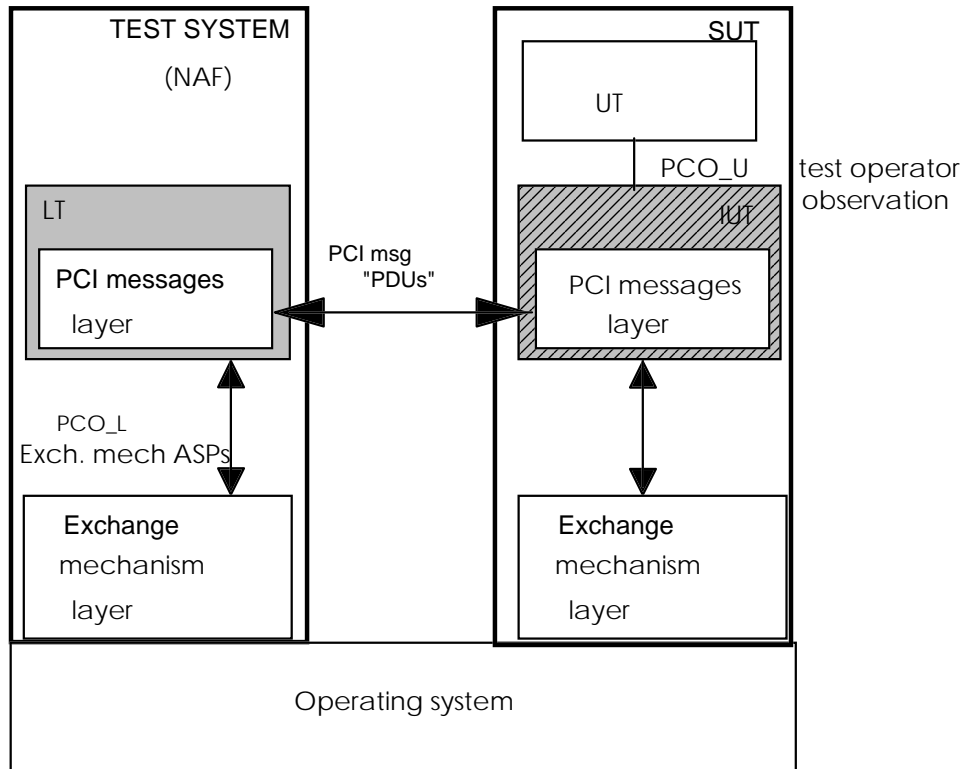
- a remote test method for the first case, called the PCIMsgRemote ATM (see figure 1);
- a distributed test method for the second one, called the PCIMsgDistributed ATM (see figure 2).



Key:

- | | |
|------------------|---|
| ASP | Abstract Service Primitive |
| Exch mech ASPs | Exchange Mechanism ASPs |
| IUT | Implementation Under test |
| LT | Lower Tester |
| NAF emul. | NAF emulator |
| Operating system | Operating system used by the Exchange Mechanism |
| PCI Msg PDUs | PCI message PDUs |
| PCO_L | Point of Control and Observation (Lower) |
| SUT | System Under Test |

Figure 1: PCIMsgRemote ATM



Key:

ASP	Abstract Service Primitive
Exch mech ASPs	Exchange Mechanism ASPs
IUT	Implementation Under Test
LT	Lower Tester
NAF emul.	NAF emulator
Operating system	Operating system used by the Exchange Mechanism
PCI Msg PDUs	PCI message PDUs
PCO_L	Point of Control and Observation (Lower)
PCO_U	Point of Control and Observation (Upper)
SUT	System Under Test
UT	Upper Tester

Figure 2: PCIMsgDistributed ATM

4.3 Default values for directions in the Control and User Planes

There are very few mandatory features in a PUF, including the direction of calls on the Control and User planes. When directions are not specified in a TP, the default direction is incoming for both planes. However, this can only be if the IUT has claimed to support the incoming direction in answer to an Implementation Conformance Statement (ICS) question.

An outgoing user connection can only be supported on an outgoing call in the Control Plane. In this instance, for TCs about outgoing connection establishment on the User Plane, (the direction of the Control Plane is not specified in such TPs), the direction for the Control Plane shall be outgoing.

IXIT items indicate the CDirection/UDirection combinations supported by the IUT, and allow the tester to select the direction of the Control Plane.

The same problem can arise for the direction of data transfer and the direction of a user connection. It is also dealt with by IXIT items used to indicate the UDirection/data transfer direction combinations.

5 ATS naming conventions and use of language conventions

The naming conventions described here have been chosen to ensure easy understanding of the ATS. As far as possible, the names reflect their role in the ATS. When a name is used to represent an item from the ETS, then the name shall be taken directly from the ETS and prefixed with the correct prefix. Where an identifier is made up of one or more words, the words shall each start with a capital letter.

- The term IUT refers to the PUF under test.
- The term tester refers to the NAF emulator which performs the testing on the IUT.
- The test suite comprises one **test component** called the Lower Tester (LT).
- There are two **Points of Control and Observation** (PCO) used. A PCO is prefixed by PCO_

EXAMPLE 1: PCO_L PCO in the LT.

- **Selection expressions** start with SE_.

EXAMPLE 2: SE_NCOTypeC.

- **Test suite operations** start with TSO_.

EXAMPLE 3: TSO_CalculNCOType.

- **Test suite constants** start with TSC_.

EXAMPLE 4: TSC_CalledDTEAddress.

- When a TSC is used for to fill a field of a structured type, the name shall be generated as follow:

EXAMPLE 5: TSC_<structured type><field name><digit>, e.g.TSC_NCROIDValue1.

- **Test suite variables** start with TSV_.

EXAMPLE 6: TSV_NCOTypeVal.

- **Test suite parameters** start with TSP_.

EXAMPLE 7: TSP_LocalNumber.

- **Structured type definitions** are named to reflect the nature of the type. Parameters of PCI messages, e.g. GroupID, are denoted by par_GroupID and shall always be of type <parameter>, e.g. GroupID.

EXAMPLE 8: GroupID is a structured type definition for the PCI parameter GroupID. and par_GroupID is of type GroupID.

- **Simple type definitions** are named to reflect the nature of the type.

EXAMPLE 9: OCTETSTRING4 is a type definition for octetstrings of length 4.

- **Test case variables** start with TCV_.

EXAMPLE 10: TCV_Pci.

- **Timers** start with T_.

EXAMPLE 11: T_OptAct.

- **PCI messages** use the same names as in the ETS.

EXAMPLE 12: ACreateNCOREq.

- **PCI message parameters** use the same names as in the ETS but are prefixed by par_. The fields of the parameters use the same names as the fields of the parameters in the ETS.

EXAMPLE 13: par_GroupID.

- When a parameter is used in the **formal parameter** list of a TTCN object, e.g. test step, constraint etc., it is prefixed by p_.

EXAMPLE 14: p_Cause.

- There is a one-to-one mapping between the **test purpose identifiers** in draft prETS 300 697-1 [7] and the **test case names** used in this test suite. The TPxxxxxx maps to TCxxxxxx.

EXAMPLE 15: TP431001 maps to TC431001.

- **Test step** names reflect the purpose of the test step. Those which are concerned with preambles are prefixed with pre_ and those concerned with postambles are prefixed with post_.

EXAMPLE 16: pre_C2.

For each PDU a **base constraint** is defined, with the same name as the PDU followed by the digit 0. In the base constraint of a message which is used in the direction from the tester to the PUF, optional fields shall be omitted and mandatory fields shall have a value. In the direction from the PUF to the tester, mandatory fields may take any legal value and optional fields can contain any value if present.

EXAMPLE 17: CDisconnectReq0.

Each **modified constraint** on the PDU shall be a modification of the base constraint. The modified constraint shall be named by appending a mnemonic to the name of the base constraint. When a base constraint is used, fields of the modified constraint which remain the same as fields of the base constraint shall not appear in the subsequent constraint.

EXAMPLE 18: base constraint: CConnectInd0;
 modified constraint: CConnectIndAlert.

6 Typical scenario for a Test Case

The initial state for all tests is that the NAF shall have declared itself.

The state of the interface may be either NULL or REGISTERED. The tester shall keep track of this state because calls to Exchange Mechanism functions shall only allowed in certain states.

If the interface is in the REGISTERED state, then the test may proceed, else the PUF shall register.

If the test requires that an NCO be created because none exists at the moment, then the IUT shall be asked to create an NCO with the correct characteristics.

If the test requires a D-channel to be present and there is none at the moment, then the NAF emulator can initiate setting up a D-channel. This shall be used by both User Plane tests and tests such as disconnection messages on the D-channel. One reason for the NAF emulator to initiate the call is that this can be automated and, therefore, speed up execution of the test suite. In order to test more paths through the ETS, some tests shall use the PUF to initiate the D-channel setup and they shall allow either en bloc or overlap sending.

7 Order of parameters

The parameters in either a PCI message or an ISDN message can be sent by the NAF in any order. This has not been taken into account in the test suite because all PDUs are represented in TTCN tabular form. This shall be dealt with by the implementor of the ATS.

8 Test Purpose (TP) to Test Case (TC) mapping

There is a one-to-one mapping between the TCs and the TP identifiers, and they both have the same identifier except for the TPs starting with TP and the TCs starting with TC.

Annex A (normative): Abstract Test Suite for ETS 300 325 PUF

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

The TTCN.GR representation of this ATS is contained in a Postscript file (DEP6972.PS) which can be found on the diskette which accompanies this I-ETS.

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

The TTCN.MP representation corresponding to this ATS is contained in an ASCII file (DEP6972.MP) which can be found on the diskette which accompanies this I-ETS.

NOTE: According to ISO/IEC 9646-3 [4], 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 B (normative): PCTR for ETS 300 325 PUF

This annex contains a PCTR proforma which shall be used by a test laboratory to document the results of conformance testing against ETS 300 325 [1] for the PUF, using the ATS specification in annex A, for a specific client.

Text in *italics* is comment for guidance only and shall not to be included in the actual PCTR.

The name of the test laboratory, the PCTR number, the page number and the total number of pages should appear on every page of the PCTR.

The PCTR shall use the format given as follows:

B.1 Identification summary

B.1.1 Protocol Conformance Test Report (PCTR)

PCTR Number:

PCTR Date:

Test laboratory:

Accreditation status:

Accreditation reference:

Technical Authority:

Job Title:

Signature:

Test Laboratory Manager:

Signature:

B.1.2 IUT

Name:

Version:

Protocol specification(s):

Information object specification(s)

ICS:

B.1.3 Testing environment

IXIT:

ATS specification:

Abstract Test Method:

Means of testing identification:

Period of testing:

Conformance Log references(s):

Retention Date for Log reference(s):

B.1.4 Limits and reservations

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

The order of TCs listed in clause B.6 of this PCTR corresponds to the ordering of TCs defined in the ATS referenced in subclause B.1.3. This does not indicate that the TCs were executed in this order.

The test results presented in this report apply only to the particular IUT declared in subclause B.1.2 of this PCTR, for functionality described in the relevant protocol Implementation Conformance Statement (ICS), as presented for test in the period declared in subclause B.1.3 and configured as declared in the relevant protocol Implementation eXtra Information for Testing (IXIT).

B.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.

B.2 IUT conformance status

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

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

B.3 Static conformance summary

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

Strike the appropriate words in this sentence.

B.4 Dynamic conformance summary

The test campaign did/did not reveal errors.

Strike the appropriate words in this sentence; if there are no "FAIL" verdicts to be recorded in clause B.6 of this report strike the work "did/" otherwise strike the words "/did not".

In addition, a summary of the results of groups of TCs may be given. The detailed results of testing are provided in the table of clause B.6. This summary may, for example, give totals for the number of passes, fails and inconclusives in each test group, and also allow the test laboratory to make observations on those results, such as "All the TCs concerned with segmented data transfer failed".

B.5 Static conformance review report

If clause B.3 indicates non-conformance, this clause itemises the mismatches between the ICS(s) and the static conformance requirements of the referenced base specification(s).

B.6 Test campaign report

This clause shall use the following table which indicates both the TC selection that was performed by the test laboratory, and the results of testing. The list of ATSs shall appear in this table in the same order as defined in the ATS specification. Notes on the information that the test laboratory shall complete in the columns are provided below.

Additional columns may be added for attaching other information which may be provided, e.g. mappings from ATS to ETS or conformance log reference for TCs that led to Fail or Inconclusive verdicts.

Table B.1

ATS Reference (a)	Selected? Yes/No (b)	Run? Yes/No (c)	Verdict P/F/I (d)	Observations any (e)
AD				
CA				
C1				
TC411001				
TC411002				
TC411003				
TC411004				
TC411005				
TC411006				
TC411007				
TC411008				
TC411009				
TC411010				
TC411011				
TC411012				
TC411013				
BV				
C1				
TC421001				
TC421002				
TC421003				
TC421004				
TC421005				
TC421006				
TC421007				
TC421008				
TC421009				
TC421010				
TC421011				
TC421012				
TC421013				
TC421014				
TC421015				
TC421016				
IV				
C1				
TC431001				
CO				
CA				
C1				
IC				
TC511101				
TC511102				
TC511103				
OC				
TC511201				

Table B.1 (continued)

ATS Reference (a)	Selected? Yes/No (b)	Run? Yes/No (c)	Verdict P/F/I (d)	Observations any (e)
TC511202				
TC511203				
TC511204				
TC511205				
DI				
TC511301				
TC511302				
TC511303				
BV				
C1				
CO				
TC521101				
OC				
TC521201				
TC511202				
TC511203				
TC511204				
TC511205				
TC511206				
TC511207				
TC511208				
TC511209				
TC511210				
TC511211				
TC511212				
DI				
TC521301				
TC521302				
TC521303				
TC521304				
TC521305				
IV				
C1				
TC531001				
TC531002				
TC531003				
US				
CA				
C1				
ICPC				
TC611101P				
ICNC				
TC611101N				
OCPC				
TC611201P				
TC611202P				

Table B.1 (continued)

ATS Reference (a)	Selected? Yes/No (b)	Run? Yes/No (c)	Verdict P/F/I (d)	Observations any (e)
OCNC				
TC611201N				
TC611202N				
DI				
TC611301				
TC611302				
TC611303				
DA				
TC611401				
TC611402				
TC611403				
TC611404				
TC611405				
TC611406				
TC611407				
TC611408				
TC611409				
TC611410				
TC611411				
TC611412				
ED				
TC611501				
TC611502				
RE				
TC611601				
TC611602				
TC611603				
TC611604				
BV				
C1				
IC				
TC621101				
OC				
TC621201				
TC601202				
TC601203				
TC601204				
DI				
TC621301				
DA				
TC621401				
IV				
C1				
TC631001				
TC631002				

Table B.1 (concluded)

<i>Key:</i>	
(a)	<i>Reference to the abstract TC from the ATS specification. This is the same as the TP identifier in the TSS&TP.</i>
(b)	<i>Indicate whether the TC was selected for execution against the IUT identified in subclause 1.2 according to the analysis of the information in the ICS and IXIT for the IUT. If the TC is de-selected on the basis of the IXIT then the test laboratory shall indicate why, by use of the observation column, by reference to the relevant IXIT clause. The test laboratory may also provide clarification regarding which ICS entries led to de-selection, whether the de-selection is as a result of evaluating the selection expression or directly as a result of ICS entries.</i>
(c)	<i>If the test was selected, indicate whether or not the test was run to completion. If the status of the test was "not run", indicate why by use of the observation column.</i>
(d)	<i>Enter the verdict as assigned during the test campaign for each TC run.</i>
(e)	<i>Enter an observation or a reference to any relevant observations made in clause B.7 of this PCTR.</i>

B.7 Observations

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

Annex C (normative): Partial IXIT proforma for ETS 300 325 PUF

C.1 Identification summary

IXIT Number:

Test Laboratory Name:

Date of Issue:

Issued to:

C.2 Abstract Test Suite summary

Protocol specification:

ATS specification:

Abstract test method:

C.3 Test laboratory

Test Laboratory Identification:

Accreditation status of the test service:

Accreditation reference:

Test Laboratory Manager:

Test Laboratory Contact:

Means of Testing:

Instructions for Completion:

C.4 Client

Client Identification:

Client Test Manager:

Client contact:

Test Facilities Required:

C.5 Sut

Name:

Version:

SCS Reference:

Machine Configuration:

Operating System Identification:

IUT Identification:

ICS:

Limitations of the SUT:

Environmental Conditions:

C.6 Protocol information for ETS 300 325 PUF

C.6.1 Protocol identification

Specification reference:

Protocol version:

ICS reference:

C.6.2 IUT information

This IXIT contains extra information necessary for the testing of the PUF implementation. In some tables specific information is requested and in others the client is requested to select an option.

C.6.2.1 Addresses and compatible incoming parameters

The tables in this subclause provide information about the local and remote addresses and values for parameters to ensure that parameters provided by the tester shall be compatible with the IUT.

If a parameter is not supported by the IUT then "-" should be filled in.

C.6.2.1.1 Exchange Mechanism

The next table indicates the NAF-property parameters that the tester shall return in the NAFProperty buffer when PCiGetProperty is called, in order for the NAF to be compatible with the PUF.

NOTE: Some parameters may be repeated in the buffer. In such an event, the repetitions are identified by a letter, e.g. APlaneClass_a, APlaneClass_b, etc. In this example, each APlaneClass is a class of messages on the Administration Plane, either class 2 or class 3 and the allowed values for these classes are 2 and 3.

Table C.1: Accepted NAF-Property parameters (reference: ETS 300 325 [1], subclause 7.1.3, table 36)

Item N°	Parameter name	Parameter type	Parameter range	Parameter value
1	Product	OCTETSTRING1_32		
2	Manufacturer	OCTETSTRING1_32		
3	AccessClass	OCTETSTRING1		
4	UserProtocolL3	OCTETSTRING1_4		
5	UserProtocolL2	OCTETSTRING1_2		
6	BChannels	OCTETSTRING1		
7	BPermanent	OCTETSTRING1		
8	DPermanent	OCTETSTRING1		
9	APlaneClass_a	OCTETSTRING1	[2..3]	
10	APlaneClass_b	OCTETSTRING1	[2..3]	
11	CPlaneClass_a	OCTETSTRING1	[2..6]	
12	CPlaneClass_b	OCTETSTRING1	[2..6]	
13	CPlaneClass_c	OCTETSTRING1	[2..6]	
14	CPlaneClass_d	OCTETSTRING1	[2..6]	
15	CPlaneClass_e	OCTETSTRING1	[2..6]	
16	SuppService_a	OCTETSTRING1_16	ref[1] table 37	
17	SuppService_b	OCTETSTRING1_16	ref[1] table 37	
18	SuppService_c	OCTETSTRING1_16	ref[1] table 37	
19	SuppService_d	OCTETSTRING1_16	ref[1] table 37	
20	SuppService_e	OCTETSTRING1_16	ref[1] table 37	
21	SuppService_f	OCTETSTRING1_16	ref[1] table 37	
22	SuppService_g	OCTETSTRING1_16	ref[1] table 37	
23	SuppService_h	OCTETSTRING1_16	ref[1] table 37	
24	SuppService_h	OCTETSTRING1_16	ref[1] table 37	
25	SuppService_j	OCTETSTRING1_16	ref[1] table 37	
26	ExtEquipName_a	OCTETSTRING1_16	ref [1] 6.6.29	
27	ExtEquipName_b	OCTETSTRING1_16	ref [1] 6.6.29	
28	ExtEquipName_c	OCTETSTRING1_16	ref [1] 6.6.29	
29	ExtEquipName_d	OCTETSTRING1_16	ref [1] 6.6.29	
30	ExtEquipName_e	OCTETSTRING1_16	ref [1] 6.6.29	

C.6.2.1.2 Control Plane**Table C.2: Remote addresses**

Item N°	Parameter name	Parameter type	Parameter range	Parameter value
1	NumberRemote	IA5String1_20		
2	SubAddRemote	IA5String1_20		
NOTE: This table shall be completed by the test operator.				

Table C.3: Parameters in CConnectInd message to get an CAlertReq from the IUT

Item N°	Parameter name	Parameter type	Parameter range	Parameter value
1	BearerCap	OCTETSTRING1_12		
2	CalledNumber_NumberType	OCTETSTRING1	(255, 0,1,2,3,4,6)	
3	CalledNumber_NumberPlan	OCTETSTRING1	(255,0,1,3,8,9)	
4	CalledNumber_Number	IA5String1_20		
5	CalledSubAd_NumberType	OCTETSTRING1	(0,2)	
6	CalledSubAd_Indicator	OCTETSTRING1	(0,1)	
7	CalledSubAd_Number	IA5String1_20		
8	LLC_Negotiation	BOOLEAN	(TRUE, FALSE)	
9	LLC_L2protocol	OCTETSTRING1	[0..31] or 255	
10	LLC_L2optional	OCTETSTRING1	[0..127] or 255	
11	LLC_L3protocol	OCTETSTRING1	[0..31] or 255	
12	LLC_L3optional	OCTETSTRING1	[0..127] or 255	
13	HLC_standard	OCTETSTRING1	(255,0,1,2,3)	
14	HLC_identification	OCTETSTRING1	(1,33,36,40,49,50,53,56,65,94,95)	
15	HLC_extidentification	OCTETSTRING1	(1,33,36,40,49,50,53,56,65)	

Table C.4: Answer to a CConnectInd message

Item N°	Question
1	Before accepting an incoming call, does the IUT always send a CAlertReq message?:

Table C.5: Parameters in CConnectInd message to get an CConnectRsp from the IUT

Item N°	Parameter name	Parameter type	Parameter range	Parameter value
1	BearerCap	OCTETSTRING1_12		
2	CalledNumber_NumberType	OCTETSTRING1	(255, 0,1,2,3,4,6)	
3	CalledNumber_NumberPlan	OCTETSTRING1	(255,0,1,3,8,9)	
4	CalledNumber_Number	IA5String1_20		
5	CalledSubAd_NumberType	OCTETSTRING1	(0,2)	
6	CalledSubAd_Indicator	OCTETSTRING1	(0,1)	
7	CalledSubAd_Number	IA5String1_20		
8	LLC_Negotiation	BOOLEAN	(TRUE, FALSE)	
9	LLC_L2protocol	OCTETSTRING1	[0..31] or 255	
10	LLC_L2optional	OCTETSTRING1	[0..127] or 255	
11	LLC_L3protocol	OCTETSTRING1	[0..31] or 255	
12	LLC_L3optional	OCTETSTRING1	[0..127] or 255	
13	HLC_standard	OCTETSTRING1	(255,0,1,2,3)	
14	HLC_identification	OCTETSTRING1	(1,33,36,40,49,50,53,56,65,94,95)	
15	HLC_extidentification	OCTETSTRING1	(1,33,36,40,49,50,53,56,65)	

Table C.6: Parameters in CConnectInd message to get an CDisconnectReq with "incompatible destination" from the IUT

Item N°	Parameter name	Parameter type	Parameter range	Parameter value
1	HLC_Identification	OCTETSTRING1	(1,33,36,40,49,50,53,56,65,94,95)	

C.6.2.1.3 User Plane

Table C.7: Parameters in U3ConnectInd message to get a U3ConnectRsp from the IUT

Item N°	Parameter name	Parameter type	Parameter range	Parameter value
1	CalledDTEAddress	IA5String1_15		
2	CalledDTEAddressExt	IA5String1_40		
3	CallingDTEAddress	IA5String1_15		
4	CallingDTEAddressExt	IA5String1_40		
5	PacketSize_Negotiation	OCTETSTRING1		
6	PacketSize_Invalue	OCTETSTRING1		
7	PacketSize_outvalue	OCTETSTRING1		
8	WindowSize_Negotiation	OCTETSTRING1		
9	WindowSize_Invalue	OCTETSTRING1		
10	WindowSize_outvalue	OCTETSTRING1		

Table C.8: PacketSize parameter in U3ConnectInd message to get a U3ConnectRsp from the IUT with a new PacketSize parameter

Item N°	Parameter name	Parameter type	Parameter range	Parameter value
1	PacketSize_Negotiation	OCTETSTRING1		
2	PacketSize_Invalue	OCTETSTRING1		
3	PacketSize_outvalue	OCTETSTRING1		

Table C.9: Data buffer in U3DataInd, U1DataInd and UserData in U3ExpeditedDataInd

Item N°	Parameter name	Parameter type	Parameter range	Parameter value
1	Data	OCTETSTRING		
2	ExpeditedUserData	OCTETSTRING1_128		

Table C.10: Value passed in KeyPad parameter and value transmitted in the UserToUserInfo parameter

Item N°	Parameter name	Parameter type	Parameter range	Parameter value
1	Keypad	OCTETSTRING1_32		
2	UserToUserInfo	OCTETSTRING1_128		

C.6.2.2 Information about connection

The following two tables shall be used to get information about the allowed combinations of directions for user connections and Control Plane connections and then to find out the allowed directions for data transfer on the User Plane in combination with the Control Plane direction.

Table C.11: Supported directions for user connections, according to Control Plane direction

Item N°	Control Plane direction	User Plane direction	Supported (Y/N)
1	incoming	incoming	
2	incoming	outgoing	
3	outgoing	incoming	
4	outgoing	outgoing	

Table C.12: Supported directions for data transfer, according to User Plane direction

Item N°	Control Plane direction	User Plane direction	Supported (Y/N)
1	incoming	incoming	
2	incoming	outgoing	
3	outgoing	incoming	
4	outgoing	outgoing	

C.6.2.3 Procedural information

This subclause describes procedures performed by the test operator at the upper interface. Each item corresponds to an implicit send in the ATS, i.e. where the test operator is asked to perform an action. The information given in this subclause describes how the test operator shall control the upper interface of the IUT. It may be used to select TCs.

If the corresponding ICS item is not supported then the answer shall be "-", i.e. the value of the item is FALSE.

If the corresponding ICS item is supported but there is no way of initiating the action at the upper interface, then the answer shall be "-", i.e. the value of the item is FALSE.

If the corresponding ICS item is supported and there is a way of initiating the action, the question should be answered appropriately, the value of the item is TRUE.

If the corresponding ICS item is supported in the ICS but the action is performed automatically in response to a PCI message, then a "*" shall be filled in and the value of the item is TRUE. Questions where this is possible are marked.

C.6.2.3.1 Exchange Mechanism

Table C.13 bis: Exchange Mechanism

Item N°	Procedural information
1	How does the IUT register?:
2	How does the IUT deregister?:

C.6.2.3.2 Administration Plane

Table C.13: NCO creation and NCOType

Item N°	Procedural information
1	How does the IUT request the creation of an NCO of type C?:
2	How does the IUT request the creation of an NCO of type C/U1?:
3	How does the IUT request the creation of an NCO of type C/U3?:
4	How does the IUT request the creation of an NCO of type U3?:
5	How does the IUT request the creation of an NCO of type U3G?:

Table C.14: NCO creation and layer 3 protocols

Item N°	Procedural information
1	How does the IUT request the creation of an NCO which allows it to deal with an ETS 300 080 [9] connection?:
2	How does the IUT request the creation of an NCO which allows it to deal with an ISO/IEC 8208 [10] connection?:
3	How does the IUT request the creation of an NCO which allows it to deal with a CCITT Recommendation T.70 [11] connection?:
4	How does the IUT request the creation of an NCO which allows it to deal with a NMA NULL connection?:

Table C.15: NCO creation and other parameters

Item N°	Procedural information
1	How does the IUT request the creation of an NCO which allows it to receive an incoming call?:
2	How does the IUT request the creation of an NCO which allows it to initiate an outgoing call?:
3	How does the IUT request the creation of an NCO which allows it to receive an incoming user connection?:
4	How does the IUT request the creation of an NCO which allows it to initiate an outgoing user connection?:
5	How does the IUT request the creation of an NCO with a RequestID?:
6	How does the IUT request the creation of an NCO which indicates the signalling attribute set (CAttribute parameters or CAttributeName)?:
7	How does the IUT request the creation of an NCO which indicates the user attribute set (UAttribute parameters or UAttributeName)?:
8	How does the IUT request the creation of an NCO which indicates the Control Plane address?:
9	How does the IUT request the creation of an NCO which indicates the user address?:
10	How does the IUT request the creation of 2 NCOs with the same SelectorId?:
11	How does the IUT request the creation of an NCO with no CalledNumber, no CalledSubAddress and no BearerCap?:

Table C.15(concluded): NCO creation and other parameters

Item N°	Procedural information
12	How does the IUT request the creation of an NCO with CalledNumber, no CalledSubAddress and no BearerCap?:
13	How does the IUT request the creation of 2 NCOs?:

Table C.16: Other actions on NCO

Item N°	Procedural information
1	How does the IUT request the destruction an NCO?:
2	How does the IUT request information about an NCO?:

C.6.2.3.3 Control Plane**Table C.17: Call establishment**

Item N°	Procedural information
1	How does the IUT accept an incoming call, in state C3 (call received)?:
2	How does the IUT initiate an outgoing call, in state C0 (idle)?:
3	How does the IUT initiate a block mode dialling outgoing call (DDI in block mode), in state C0 (idle)?:
4	How does the IUT initiate an outgoing call with a CalledSubaddress (SUB supplementary service), in state C0 (idle)?:
5	How does the IUT initiate an outgoing call which indicates its local address in CallingNumber, in state C0 (idle)?:

Table C.17 (concluded): Call establishment

Item N°	Procedural information
6	How does the IUT initiate an outgoing call which overrides the default value of CLIR supplementary service with "allowed", in state C0 (idle)?:
7	How does the IUT initiate an outgoing call which activates the AOC-E supplementary service, in state C0 (idle)?:
8	How does the IUT initiate an outgoing call which activates the AOC-D supplementary service, in state C0 (idle)?:
9	How does the IUT initiate 2 outgoing calls?:
10	How does the IUT initiate an outgoing call which overrides the CalledNumber, the CalledSubaddress and the BearerCap previously specified during the NCO creation?:
11	How does the IUT initiate an outgoing call which indicates the channel identification, in state C0 (idle)?:
12	How does the IUT initiate an outgoing call with a keypad facility, in state C0 (idle)?:
13	How does the IUT initiate an outgoing call with user to user information, in state C0 (idle)?:
14	How does the IUT initiate an outgoing call with HLC and LLC, in state C0 (idle)?:

Table C.18: Disconnection

Item N°	Procedural information
1	How does the IUT initiate a disconnection, in state C4 (active)?:
2	How does the IUT indicate that it refuses an incoming call because the destination is incompatible?: (answer with an "*" if the action is performed automatically)
3	How does the IUT indicate that an incoming call is rejected?: (answer with an "*" if the action is performed automatically)
4	How does the IUT initiate a disconnection which indicates that it is a normal disconnection, in state C4 (active)?:

C.6.2.3.4 User Plane

Table C.19: Connection management

Item N°	Procedural information
1	How does the IUT initiate an outgoing user connection, in state PU1 (idle, PUF co-ordination)?:
2	How does the IUT initiate an outgoing user connection, in state NU1 (idle, NAF co-ordination)?:
3	How does the IUT initiate an outgoing user connection and request confirmation of data receipt, in state U1 (idle)?:
4	How does the IUT initiate an outgoing user connection and invoke the use of the fast select facility, in state U1 (idle)?:
5	How does the IUT initiate an outgoing user connection and request the use of expedited data, in state U1 (idle)?
6	How does the IUT initiate 2 outgoing user connections, in state U1 (idle) for 2 grouped NCOs?:
7	How does the IUT initiate an outgoing user connection and request confirmation of data receipt, in state U1 (idle)?:
8	How does the IUT remove a user connection, in state U4 (data transfer ready)?:
9	How does the IUT reset a user connection, in state U4 (data transfer ready)?:
10	How does the IUT indicate that it has dealt with the reset and is ready to proceed, on receiving a U3ResetInd message in state U4 (data transfer ready)?: (answer with "" if the action is performed automatically)

Table C.20: Data transfer

Item N°	Procedural information
1	How does the IUT send a data packet, in state U4 (data transfer ready)?:
2	How does the IUT send a data packet which requests confirmation of receipt of data and which indicates that there is no more data, in state U4 (data transfer ready)?:
3	How does the IUT indicate to the NAF that it can accept incoming data, in state U4 (data transfer ready)?:
4	How does the IUT indicate to the NAF that it cannot accept incoming data, in state U4 (data transfer ready)?:
5	How does the IUT send transparent data, after having established a TMA connection on the Control Plane?:
6	How does the IUT send expedited data, in state U4 (data transfer ready)?:

C.6.2.4 Upper interface observation

Some tests can only be assigned a verdict by the test operator after observing some behaviour at the upper interface of the PUF. As this behaviour to be observed is not defined in the ETS and depends on the answers given in this IXIT, these tests are optional and shall only be selected if the answer to the question table C.21 is YES. The tables C.22 to C.24 provide information on individual scenarios for the three planes. If no information is provided, the test suite parameter corresponding to the item shall be deemed FALSE and the test shall be de-selected.

Table C.21: Upper interface observable

Item N°	Question
1	Do you want to select the optional TCs (upper interface observation)?:

C.6.2.4.1 Administration Plane

Table C.22: Administration Plane

Item N°	Upper interface observation
1	How does the IUT react on receiving an ACreateNCOCnf message containing a CompletionStatus parameter with the status field encoded as "NAFNotAvailable", in response to a previously sent ACreateNCOREq message?:
2	How does the IUT react on receiving an ADestroyNCOCnf message, in response to a previously sent ADestroyNCOREq message?:
3	How does the IUT react on receiving an AGetNCOInfoCnf message, in response to a previously sent ADestroyNCOREq message?:
4	How does the IUT react on receiving an ADestroyNCOCnf message containing no CompletionStatus parameter (mandatory parameter missing) in response to a previously sent ADestroyNCOREq message?:

C.6.2.4.2 Control Plane

Table C.23: Control Plane

Item N°	Upper interface observation
1	How does the IUT react on receiving a CAlertInd message, in state C1 (call initiated) for a telephony call?:
2	How does the IUT react on receiving a CConnectCnf message, in state C1 (call initiated) for a telephony call?:
3	How does the IUT react on receiving a CProgressInd message, in state C1 (call initiated) for a telephony call?:
4	How does the IUT react on receiving a compatible CConnectInd message containing a Display parameter encode as "HELLO", in state C0 (idle)?:
5	How does the IUT react on receiving a CDisconnectCnf message containing a Facility parameter with FacilityTag field encoded as "charginginfo" and with FacilityValue field with TypeOfTotal subfield encoded as "total", the TypeOfCharge subfield encoded as "unitinfo", the value subfield encoded as "33.0", in C5 state (disconnect request)?:
6	How does the IUT react on receiving a CConnectInd message (inopportune), in state C1 (call initiated)?:
7	How does the IUT react on receiving a CConnectCnf message containing a NCROID parameter with a Value field encoded as a non-existent NCROID (mandatory parameter content error), in state C1 (call initiated)?:
8	How does the IUT react on receiving a CDisconnectInd message without a CauseToPUF parameter (mandatory parameter missing), in state C1 (call initiated)?:

C.6.2.4.3 User Plane

Table C.24: User Plane

Item N°	Upper interface observation
1	How does the IUT react on receiving a U3DisconnectInd message, in state U2 (outgoing connection pending)?:
2	How does the IUT react on receiving a U3DisconnectInd message containing a X213Cause parameter with a Value field encoded as "NoReasonPerm", in state U2 (outgoing connection pending)?:
3	How does the IUT react on receiving a U3DisconnectInd message, in state U4 (data transfer ready)?:
4	How does the IUT react on receiving a U3DataInd message, in state U4 (data transfer ready)?:
5	How does the IUT react on receiving a U3DataAcknowledgeInd message, in U4 state (data transfer ready) after having sent a U3DataReq message with a Bit_DQM parameter encoded as "confirmation required" and "no more data"?:
6	How does the IUT react on receiving a U3ExpeditedDataInd message, in state U4 (data transfer ready) on a connection which allows expedited data?:
7	How does the IUT react on receiving a U3ErrorInd message with a CompletionStatus parameter encoded as "overflow", in state U4 (data transfer ready)?:
8	How does the IUT react on receiving a U1DataInd message, for a TMA call?:
9	How does the IUT react on receiving a U1ErrorInd message with a CompletionStatus parameter encoded as "overflow", for a TMA call?:
10	How does the IUT react on receiving U3ResetRsp message (inopportune), in state U4 (data transfer ready)?:
11	How does the IUT react on receiving a U3ConnectCnf message containing no PacketSize parameter (mandatory parameter missing), in state U2 (outgoing connection pending)?:

Table C.25: Miscellaneous

Item N°	Parameter name	Parameter type	Parameter range	Parameter value
1	MaxMsgSize (table 38, ETS 300 325 [1])	INTEGER		
NOTE: To be filled by the test operator.				

Annex D (informative): ETS 300 325 PUF PCI ICS proforma

ETS 300 325 [1], annex G (normative) contains a PCI ICS for the whole of the ETS. That ICS is not sufficient for the ATS in annex A of this part of the ETS, therefore this informative annex contains the ICS applicable to annex A. This annex should, eventually, supersede ETS 300 325 [1], annex G.

This annex contains a PCI ICS Proforma for the PUF part of ETS 300 325 [1]. The PUF PCI ICS Proforma lists all mandatory, conditional and optional items of the ISDN PCI specification relating to the Exchange Mechanism and the messages. It should be used in the process of evaluating a particular PUF implementation when claiming conformance in its use of ETS 300 325 [1]. The PCI ICS Proforma is a record of which items are supported by the tested PUF.

Conformance requirement concerning the PCI ICS

A conforming ICS proforma should be technically equivalent to annex D and preserve the numbering and ordering of the items in annex A.

An ICS which conforms to this I-ETS will:

- a) describe an implementation which conforms to ETS 300 325 [1];
- b) be a conforming ICS proforma, which has been completed in accordance with the instructions given in clause D.1;
- c) include the information necessary to uniquely identify both the supplier and the implementation.

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

D.1 Instructions for completing the PUF PCI ICS proforma

D.1.1 Purposes and structure

The purpose of this PCI ICS is to provide a mechanism whereby a supplier of an implementation of the requirements of ETS 300 325 [1] may provide information in a standard form.

The PCI ICS proforma is subdivided into sections for the following categories of information:

- implementation identification;
- PCI identification;
- global statement conformance;
- static requirements;
 - Major capabilities:
 - Operating systems;
 - Exchange Mechanism;
 - Connection type;
 - Dialling mode;
 - User Plane protocols;
 - Messages:
 - Administration Plane messages;
 - Control Plane Messages;
 - User Plane messages;
 - Message parameters:
 - Administration Plane message parameters;
 - Control Plane message parameters;
 - User Plane message parameters;
 - Miscellaneous and supplementary services.

NOTE 1: According to ISO/IEC 9646-5 [5] if a message is mandatory and all its parameters are mandatory, then a table asking whether or not the parameters are supported should not be included.

NOTE 2: According to ISO/IEC 9646-5 [5] if a message is optional and it is mandatory that its parameters are supported, then a table asking whether or not the parameters are supported should not be included.

To say that the PUF supports an item in this ICS, does not have the same meaning for items which are sent as for items which are received. In the case of items which are sent, it means that the PUF is able to send the message or parameter requesting some feature as described in ETS 300 325 [1] and, in the case of receiving, it means that the PUF is able to receive the message or parameter and to react as described in ETS 300 325 [1].

NOTE 3: The behaviour of the PUF on receiving an item is often not described in ETS 300 325 [1] and in such an instance, to say that the PUF supports the item means only that the PUF continues to behave normally (i.e. does not crash, does not disconnect the call, ...). In the case of receiving, it is mandatory to support all parameters applicable for the supported user protocols.

When all parameters of a message are mandatory if the message is supported, parameters are not detailed in a table. There is only one question asked: are all parameters supported? However this is only the case if all the parameters of it are applicable for all user protocols which use the message.

EXAMPLE 1: U3ReadyToReceiveInd: this is a received message, applicable for ETS 300 080 [9] and ISO/IEC 8208 [10] and both parameters are applicable for both protocols. In this case, all parameters are mandatory if the message is supported, thus the table does not detail the parameters.

Table D.1

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C1	
C1: IF "U3ReadyToReceiveInd supported" THEN M				

EXAMPLE 2: U3DataInd: this is a received message, applicable for the four user protocols, but Bit_DQM parameter is only applicable for ETS 300 080 [9], ISO/IEC 8208 [10] and CCITT Recommendation T.70 [11] (not for NULL protocol). In this case, parameters are detailed in the table.

Table D.2

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C1	
2	Bit_DQM		C2	
3	data in data buffer		C1	
C1: IF "U3DataInd supported" THEN M				
C2: IF "U3DataInd supported" AND ("ETS 300 080" OR "ISO/IEC 8208" OR "CCITT Recommendation T.70 supported") THEN M				

Because there are a lot of optional features for a PUF, the PUF PCI ICS is more complex than the NAF PCI ICS.

D.1.2 Symbols, abbreviations and conventions

The PCI ICS proforma contained in this annex comprises information in a tabular form in accordance with the guidelines presented in ISO/IEC DIS 9646-7 [6].

References within tables are to ETS 300 325 [1], except where otherwise stated.

D.1.2.1 Standardized symbols for the status column

The following notations, defined in ISO/IEC DIS 9646-7 [6], are used in the proforma to indicate the status of a question:

M (mandatory):	the capability shall be implemented, in conformance with the ETS 300 325 [1];
O (optional):	the capability may be implemented, and if it is implemented it is required to conform to the PCI specification (cf ISO/IEC 9646-1 [2], clause D.3);
O.n (optional):	the capability may be implemented, and if it is implemented it is required to conform to the PCI specification, and the option is mutually exclusive or selectable among a set (cf ISO/IEC 9646-1 [2], clause D.3);
X (prohibited):	there is a requirement not to use this capability in a given context;
C (conditional):	the requirement on this capability depends on the selection of other optional or conditional items;
N/A (not applicable)	in the given context the base specification makes it impossible to use this capability.

If appropriate, a "C" followed by an integer is placed in the status column, providing a reference to a conditional status expression (i.e. predicate expression) defined as a note inside the table. As defined in ISO/IEC DIS 9646-7 [6], this predicate expression is consistent with TTCN boolean expressions (i.e. IF ... THEN (IF ... THEN ELSE) ELSE). In all cases, "ELSE N/A" is implied if an ELSE clause is omitted. The mathematical negation symbol, "-", is used for logical negation.

D.1.2.2 Standardized symbols for the support column

To specify the level of support for entries, the standard symbols for the support column are as follows:

Y (supported):	the capability is implemented in conformance with the ETS;
N (not supported):	the capability is not implemented;
N/A or no answer required:	the question has a status value of either not applicable or outside scope.

D.1.3 Instructions for completing the PCI ICS

The supplier of the implementation enters an explicit statement in each of the support columns provided using the notation described in subclause D.1.2.

D.2 Identification of the implementation

D.2.1 Date of statement

D.2.2 Implementation Under Test (IUT) identification

IUT name:

.....
.....

IUT version:

.....

D.2.3 System Under Test (SUT) identification

SUT name:

.....
.....

Hardware configuration:

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

Operating system:

.....

D.2.4 Product supplier

Name:

.....

Address:

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

Telephone number:

.....

Facsimile number:

.....

Additional information:

.....

.....

.....

D.2.5 Client

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

Additional information:

.....

.....

.....

D.2.6 ICS contact person

Name:

.....

Telephone number:

.....

Facsimile number:

.....

Additional information:

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

D.3 PCI ICS/System Conformance Statement (SCS)

Provide the relationship of the PCI ICS with the SCS for the system:

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

D.4 Identification of the PCI

This PCI ICS proforma applies to the following standard: ETS 300 325 [1] for the PUF.

D.5 Global statement of conformance

The supplier of the implementation to confirm whether or not all mandatory capabilities are implemented for ETS 300 325 [1].

Table D.1: Global statement of conformance

Are all mandatory capabilities implemented?	
---	--

NOTE: Answering "No" to one of these questions indicates non-conformance to the PCI specification. Non-supported mandatory capabilities are to be identified in the PCI ICS, with an explanation of why the implementation is non-conformant.

D.6 Static requirements

D.6.1 Major capabilities

D.6.1.1 Underlying Operating System

Table D.2: Underlying Operating System

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	DOS	ETS 300 325 [1], annex F, clause F.1	O.Error! Bookmark not defined.	
2	UNIX	ETS 300 325 [1], annex F, clause F.3	O.Error! Bookmark not defined.	
3	Windows	ETS 300 325 [1], annex F, clause F.2	O.Error! Bookmark not defined.	
O.1:	It is mandatory to support at least one of these options.			

D.6.1.2 Exchange Mechanism

Table D.3: Exchange Mechanism

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	PciGetHandles	ETS 300 325 [1], subclause 7.1.2	O	
2	PciGetProperty	ETS 300 325 [1], subclause 7.1.3	O	
3	PciRegister	ETS 300 325 [1], subclause 7.1.4	M	
4	PciPutMessage	ETS 300 325 [1], subclause 7.3.6	M	
5	PciGetMessage	ETS 300 325 [1], subclause 7.3.7	M	
6	PciSetSignal with the signal procedure mechanism	ETS 300 325 [1], subclause 7.3.8	O	
7	PciSetSignal with the user message mechanism	ETS 300 325 [1], subclause 7.3.8	O	
8	PciDeregister	ETS 300 325 [1], subclause 7.2.1	M	

D.6.1.3 Connection types**Table D.4: Connection types**

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	telephony (NCOType C)		O	
2	data transfer TMA (NCOType C/U1)		O	
3	data transfer NMA PUF co-ordination (NCOType C/U3)		O	
4	data transfer NMA NAF co-ordination (NCOType U3)		O	
5	grouping NCO (NCOType U3G)		O	
6	incoming call in Control Plane		O	
7	outgoing call in Control Plane		O	
8	incoming call in User Plane		O	
9	outgoing call in User Plane		O	
10	several connections at the same time		O	

D.6.1.4 Dialling mode**Table D.5: Dialling mode**

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	en-bloc sending		O.2	
2	overlap sending		O.2	
O.2:	IF D.4/7 THEN it is mandatory to support at least one of these items.			

D.6.1.5 User Plane protocols**Table D.6: User Plane protocols**

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	Network layer protocol according to ETS 300 080 [9]	-	O	
2	Network layer protocol according to ISO/IEC 8208 [10]	-	O	
3	Transparent User Plane protocol	-	O	
4	Network layer protocol according to network layer of CCITT Recommendation T.70 [11]	-	O	
5	Network layer protocol using Null Layer 3 with access to CCITT Recommendation X.75 on Layer 2	-	O	
6	Network layer protocol using Null Layer 3 with transparent access to High level Data Link Control (HDLC) framing	-	O	

D.6.2 Messages**D.6.2.1 Administration Plane messages****Table D.7: Administration Plane messages**

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	ACreateNCOReq	ETS 300 325 [1], subclause 6.2.1	M	
2	ACreateNCOConf	ETS 300 325 [1], subclause 6.2.3	M	
3	ADestroyNCOReq	ETS 300 325 [1], subclause 6.2.4	M	
4	ADestroyNCOConf	ETS 300 325 [1], subclause 6.2.5	M	
5	AGetNCOInfoReq	ETS 300 325 [1], subclause 6.2.7	O	
6	AGetNCOInfoConf	ETS 300 325 [1], subclause 6.2.8	C1	
7	AErrorInd	ETS 300 325 [1], subclause 6.2.6	M	
8	ASecurityReq	ETS 300 325 [1], subclause 6.2.9	O	
9	ASecurityConf	ETS 300 325 [1], subclause 6.2.10	C2	
10	AManufacturerReq	ETS 300 325 [1], subclause 6.2.11	O	
11	AManufacturerInd	ETS 300 325 [1], subclause 6.2.12	C3	
C1:	IF D.7/5 THEN M			
C2:	IF D.7/8 THEN M			
C3:	IF D.7/10 THEN M			

D.6.2.2 Control Plane messages

Table D.8: Control Plane messages

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	CAAlertReq	6.3.2	C4	
2	CAAlertInd	6.3.3	C6	
3	CConnectReq	6.3.4	C6	
4	CConnectInd	6.3.5	C7	
5	CConnectRsp	6.3.6	C7	
6	CConnectCnf	6.3.7	C6	
7	CDisconnectReq	6.3.8	C4	
8	CDisconnectInd	6.3.9	C5	
9	CDisconnectRsp	6.3.10	C5	
10	CDisconnectCnf	6.3.11	C4	
11	CProgressInd	6.3.12	C6	
12	CStatusInd	6.3.13	C5	
13	CSetupAckInd	6.3.14	C8	
14	CConnectInfoReq	6.3.15	C8	
15	CProceedingInd	6.3.16	C8	
16	CUserInformationReq	6.3.17	C4	
17	CUserInformationInd	6.3.18	C4	
18	CCongestionControlReq	6.3.19	C4	
19	CCongestionControlInd	6.3.20	C4	
20	CSuspendReq	6.3.21	C4	
21	CSuspendCnf	6.3.22	C4	
22	CResumeReq	6.3.23	C4	
23	CResumeCnf	6.3.24	C4	
24	CNotifyInd	6.3.25	C4	
25	CFacilityReq	6.3.26	C4	

Table D.8 (concluded): Control Plane messages

26	CFacilityInd	6.3.27	C4	
27	CExtEquipAvailabilityInd	6.3.28	C4	
28	CExtEquipBlockDiallingInd	6.3.29	C4	
29	CExtEquipKeyPressedInd	6.3.30	C4	
30	CExtEquipOffHookInd	6.3.31	C4	
31	CExtEquipOnHookInd	6.3.32	C4	
<p>C4: IF D.4/1 OR D.4/2 OR D.4/3 THEN O C5: IF D.4/1 OR D.4/2 OR D.4/3 THEN M C6: IF D.4/5 THEN M C7: IF D.4/4 THEN M C8: IF D.5/2 THEN M</p> <p>NOTE: The reference given in column 3 is to subclauses within ETS 300 325 [1].</p>				

D.6.2.3 User Plane messages

Table D.9: User Plane messages

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	U3ConnectReq	6.4.3	C11	
2	U3ConnectInd	6.4.4	C12	
3	U3ConnectRsp	6.4.5	C12	
4	U3ConnectCnf	6.4.6	C11	
5	U3DisconnectReq	6.4.7	C10	
6	U3DisconnectInd	6.4.8	C9	
7	U3DataReq	6.4.9	C13	
8	U3DataInd	6.4.10	C13	
9	U3ExpeditedDataReq	6.4.11	C14	
10	U3ExpeditedDataInd	6.4.12	C14	
11	U3ResetReq	6.4.13	C15	
12	U3ResetInd	6.4.14	C15	
13	U3ResetRsp	6.4.15	C15	
14	U3ResetCnf	6.4.16	C15	
15	U3DataAcknowledgeReq	6.4.17	C14	
16	U3DataAcknowledgeInd	6.4.18	C14	
17	U3ReadyToReceiveReq	6.4.19	C15	
18	U3ReadyToReceiveInd	6.4.20	C15	
19	U3ErrorInd	6.4.21	C16	
20	U1DataReq	6.4.22	C17	
21	U1DataInd	6.4.23	C17	
22	U1ErrorInd	6.4.24	C17	
C9: IF (D.6/1 or D.6/2 or D.6/4) THEN M C10: IF (D.6/1 or D.6/2 or D.6/4) THEN O C11: IF D.4/9 THEN M C12: IF D.4/8 THEN M C13: IF D.6/1 or D.6/2 or D.6/4 or D.6/5 or D.6/6 THEN O C14: IF D.6/2 THEN O C15: IF D.6/1 or D.6/2 THEN O C16: IF D.6/6 THEN O C17: IF D.6/3 THEN O NOTE: The reference given in column 3 is to subclauses within ETS 300 325 [1].				

D.6.3 Messages parameters**D.6.3.1 Administration Plane messages parameters****D.6.3.1.1 ACreateNCOReq**

Reference: ETS 300 325 [1], subclause 6.2.1.

Table D.10: ACreateNCOReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	RequestID		O	
2	NCOType		M	
3	CDirection		C18	
4	UDirection		C19	
5	CAttributeName		C20	
6	CAttribute parameters		C21	
7	UAttributeName		C22	
8	UAttribute parameters		C23	
9	CAddress parameters		C24	
10	UAddress parameters		O	
11	GroupID		C25	
12	SelectorID		O	
C18: IF D.4/1 OR D.4/2 OR D.4/3 THEN M ELSE O C19: IF D.4/3 OR D.4/4 THEN M C20: IF (D.4/1 OR D.4/2 OR D.4/3) AND -D.10/6 THEN M ELSE O C21: IF (D.4/1 OR D.4/2 OR D.4/3) AND -D.10/5 THEN M ELSE O C22: IF (D.4/2 OR D.4/3 OR D.4/4) AND -D.10/8 THEN M ELSE O C23: IF (D.4/2 OR D.4/3 OR D.4/4 AND -D.10/7) THEN M ELSE O C24: IF (D.4/7 AND (-D.25/4 OR -D.25/5)) THEN M ELSE O C25: IF D.4/5 THEN M				

Table D.11: CAttribute parameters (reference: ETS 300 325 [1], subclause 6.6.72)

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	ChannelIdentification		C26	
2	HLC		C26	
3	LLC		C26	
4	BearerCap		C27	
C26: IF D.10/6 THEN O C27: IF (D.10/6 AND D.4/5 AND -D.25/7) THEN M ELSE IF D.10/6 THEN O				

Table D.12: CAddress parameters (reference: ETS 300 325 [1], subclause 6.6.74)

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	CalledNumber		C28	
2	CalledSubaddress		C29	
3	CallingNumber		C30	
4	CallingSubaddress		C30	
C28: IF D.10/9 AND D.4/5 AND -D.25/4 THEN M ELSE IF D.10/9 THEN O C29: IF D.10/9 AND D.4/5 AND -D.25/5 THEN M ELSE IF D.10/9 THEN O C30: IF D.10/9 THEN O				

D.6.3.1.2 ACreateNCOCnf

Reference: ETS 300 325 [1], subclause 6.2.3.

Table D.13: ACreateNCOCnf

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		M	

D.6.3.1.3 ADestroyNCOREq

Reference: ETS 300 325 [1], subclause 6.2.4.

Table D.14: ADestroyNCOREq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	RequestID		O	
2	NCOID		M	

D.6.3.1.4 ADestroyNCOCnf

Reference: ETS 300 325 [1], subclause 6.2.5.

Table D.15: ADestroyNCOCnf

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		M	

D.6.3.1.5 AErrorInd

Reference: ETS 300 325 [1], subclause 6.2.6.

Table D.16: AErrorInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		M	

D.6.3.1.6 AGetNCOInfoReq

Reference: ETS 300 325 [1], subclause 6.2.7.

Table D.17: AGetNCOInfoReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C31	
C31: IF D.7/5 THEN M				

D.6.3.1.7 AGetNCOInfoCnf

Reference: ETS 300 325 [1], subclause 6.2.8.

Table D.18: AGetNCOInfoCnf

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C32	
C32: IF D.7/6 THEN M				

D.6.3.1.8 ASecurityReq

Reference: ETS 300 325 [1], subclause 6.2.9.

Table D.19: ASecurityReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	RequestID		C34	
2	NCOID		C33	
3	Algorithm		C33	
4	Key		C34	
C33: IF D.7/8 THEN M				
C34: IF D.7/8 THEN O				

D.6.3.1.9 ASecurityCnf

Reference: ETS 300 325 [1], subclause 6.2.10.

Table D.20: ASecurityCnf

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C35	
C35: IF D.7/9 THEN M				

D.6.3.1.10 AManufacturerReq

Reference: ETS 300 325 [1], subclause 6.2.11.

Table D.21: AManufacturerReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C36	
C36: IF D.7/10 THEN M				

D.6.3.1.11 AManufacturerInd

Reference: ETS 300 325 [1], subclause 6.2.12.

Table D.22: AManufacturerInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C37	
C37: IF D.7/11 THEN M				

D.6.3.2 Control Plane messages parameters

D.6.3.2.1 CAlertReq

Reference: ETS 300 325 [1], subclause 6.3.2.

Table D.23: CAlertReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C38	
2	Facility		C39	
3	UserToUserInfo		C39	
C38: IF D.8/1 THEN M				
C39: IF D.8/1 THEN O				

D.6.3.2.2 CAAlertInd

Reference: ETS 300 325 [1], subclause 6.3.3.

Table D.24: CAAlertInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C40	
C40: IF D.8/2 THEN M				

D.6.3.2.3 CConnectReq

Reference: ETS 300 325 [1], subclause 6.3.4.

Table D.25: CConnectReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C41	
2	CallingNumber		C45	
3	CallingSubaddress		C45	
4	CalledNumber		C42	
5	CalledSubaddress		C43	
6	ChannelIdentification		C45	
7	BearerCap		C44	
8	LLC		C45	
9	HLC		C45	
10	Keypad		C45	
11	Facility		C45	
12	UserToUserInfo		C45	
C41: IF D.8/3 THEN M C42: IF D.8/3 AND (-D.10/9 OR -D.12/1 THEN M ELSE IF D.8/3 THEN O C43: IF D.8/3 AND (-D.10/9 OR -D.12/2 THEN M ELSE IF D.8/3 THEN O C44: IF D.8/3 AND (-D.10/6 OR -D.11/4) THEN M ELSE IF D.8/3 THEN O C45: IF D.8/3 THEN O				

D.6.3.2.4 CConnectInd

Reference: ETS 300 325 [1], subclause 6.3.5.

Table D.26: CConnectInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C46	
C46: IF D.8/4 THEN M				

D.6.3.2.5 CConnectRsp

Reference: ETS 300 325 [1], subclause 6.3.6.

Table D.27: CConnectRsp

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C47	
2	Channellidentification		C48	
3	LLC		C48	
4	Facility		C48	
5	UserToUserInfo		C48	
C47: IF D.8/5 THEN M				
C48: IF D.8/5 THEN O				

D.6.3.2.6 CConnectCnf

Reference: ETS 300 325 [1], subclause 6.3.7.

Table D.28: CConnectCnf

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C49	
C49: IF D.8/6 THEN M				

D.6.3.2.7 CDisconnectReq

Reference: ETS 300 325 [1], subclause 6.3.8.

Table D.29: CDisconnectReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C50	
2	CauseToNAF		C51	
3	Facility		C51	
4	UserToUserInfo		C51	
C50: IF D.8/7 THEN M				
C51: IF D.8/7 THEN O				

Table D.30: CauseToNAF values (reference: ETS 300 325 [1], subclause 6.8.8, table 31)

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	Normal call clearing		O.3	
2	Call rejected		O.3	
3	Normal unspecified		O.3	
4	incompatible destination		O.3	
O.3: IF D.29/2 THEN it is mandatory to support at least one of these items				

D.6.3.2.8 CDisconnectInd

Reference: ETS 300 325 [1], subclause 6.3.9.

Table D.31: CDisconnectInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C52	
C52: IF D.8/8 THEN M				

D.6.3.2.9 CDisconnectRsp

Reference: ETS 300 325 [1], subclause 6.3.10.

Table D.32: CDisconnectRsp

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C53	
2	Facility		C54	
C53: IF D.8/9 THEN M				
C54: IF D.8/9 THEN O				

D.6.3.2.10 CDisconnectCnf

Reference: ETS 300 325 [1], subclause 6.3.11.

Table D.33: CDisconnectCnf

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C55	
C55: IF D.8/10 THEN M				

D.6.3.2.11 CProgressInd

Reference: ETS 300 325 [1], subclause 6.3.12.

Table D.34: CProgressInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C56	
C56: IF D.8/11 THEN M				

D.6.3.2.12 CStatusInd

Reference: ETS 300 325 [1], subclause 6.3.13.

Table D.35: CStatusInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C57	
C57: IF D.8/12 THEN M				

D.6.3.2.13 CSetupAckInd

Reference: ETS 300 325 [1], subclause 6.3.14.

Table D.36: CSetupAckInd

Item N ^o	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C58	
C58: IF D.8/13 THEN M				

D.6.3.2.14 CConnectInfoReq

Reference: ETS 300 325 [1], subclause 6.3.15.

Table D.37: CConnectInfoReq

Item N ^o	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C59	
C59: IF D.8/14 THEN M				

D.6.3.2.15 CProceedingInd

Reference: ETS 300 325 [1], subclause 6.3.16.

Table D.38: CProceedingInd

Item N ^o	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C60	
C60: IF D.8/15 THEN M				

D.6.3.2.16 CUserInfoReq

Reference: ETS 300 325 [1], subclause 6.3.17.

Table D.39: CUserInfoReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C61	
2	MoreData		C62	
3	UserToUserInfo		C61	
C61:	IF D.8/16 THEN M			
C62:	IF D.8/16 THEN O			

D.6.3.2.17 CUserInfoInd

Reference: ETS 300 325 [1], subclause 6.3.18.

Table D.40: CUserInfoInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C63	
C63:	IF D.8/17 THEN M			

D.6.3.2.18 CCongestionControlReq

Reference: ETS 300 325 [1], subclause 6.3.19.

Table D.41: CCongestionControlReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C64	
2	CongestionLevel		C64	
3	CauseToNAF		C65	
C64:	IF D.8/18 THEN M			
C65:	IF D.8/18 THEN O			

D.6.3.2.19 CCongestionControlInd

Reference: ETS 300 325 [1], subclause 6.3.20.

Table D.42: CCongestionControlInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C66	
C66: IF D.8/19 THEN M				

D.6.3.2.20 CSuspendReq

Reference: ETS 300 325 [1], subclause 6.3.21.

Table D.43: CSuspendReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C67	
C67: IF D.8/20 THEN M				

D.6.3.2.21 CSuspendCnf

Reference: ETS 300 325 [1], subclause 6.3.22.

Table D.44: CSuspendCnf

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C68	
C68: IF D.8/21 THEN M				

D.6.3.2.22 CResumeReq

Reference: ETS 300 325 [1], subclause 6.3.23.

Table D.45: CResumeReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C69	
C69: IF D.8/22 THEN M				

D.6.3.2.23 CResumeCnf

Reference: ETS 300 325 [1], subclause 6.3.24.

Table D.46: CResumeCnf

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C70	
C70: IF D.8/23 THEN M				

D.6.3.2.24 CNotifyInd

Reference: ETS 300 325 [1], subclause 6.3.25.

Table D.47: CNotifyInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C71	
C71: IF D.8/24 THEN M				

D.6.3.2.25 CFacilityReq

Reference: ETS 300 325 [1], subclause 6.3.26.

Table D.48: CFacilityReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C73	
2	Facility		C72	
C72: IF D.8/25 THEN M				
C73: IF D.8/25 THEN O				

D.6.3.2.26 CFacilityInd

Reference: ETS 300 325 [1], subclause 6.3.25.

Table D.49: CFacilityInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C74	
C74: IF D.8/26 THEN M				

D.6.3.2.27 CExtEquipAvailabilityInd

Reference: ETS 300 325 [1], subclause 6.3.28.

Table D.50: CExtEquipAvailabilityInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C75	
C75: IF D.8/27 THEN M				

D.6.3.2.28 CExtEquipBlockDiallingInd

Reference: ETS 300 325 [1], subclause 6.3.29.

Table D.51: CExtEquipBlockDiallingInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C76	
C76: IF D.8/28 THEN M				

D.6.3.2.29 CExtEquipKeyPressedInd

Reference: ETS 300 325 [1], subclause 6.3.30.

Table D.52: CExtEquipKeyPressedInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C77	
C77: IF D.8/29 THEN M				

D.6.3.2.30 CExtEquipOffHookInd

Reference: ETS 300 325 [1], subclause 6.3.31.

Table D.53: CExtEquipOffHookInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C78	
C78: IF D.8/30 THEN M				

D.6.3.2.31 CExtEquipOnHookInd

Reference: ETS 300 325 [1], subclause 6.3.32.

Table D.54: CExtEquipOnHookInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C79	
C79: IF D.8/31 THEN M				

D.6.3.3 User Plane messages parameters

D.6.3.3.1 U3ConnectReq

Reference: ETS 300 325 [1], subclause 6.4.3.

Table D.55: U3ConnectReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C80	
2	CalledDTEAddress		C82	
3	CalledDTEAddressExt		C82	
4	CallingDTEAddress		C82	
5	CallingDTEAddressExt		C82	
6	ReceiptConfirm		C82	
7	ExpeditedData		C81	
8	QOSParameters		C82	
9	UserData		C82	
10	Bcug		C82	
11	FastSelect		C82	
12	PacketSize		C81	
13	WindowSize		C82	
14	FacilityData		C82	
C80: IF D.9/1 THEN M				
C81: IF D.9/1 AND D.6/2 THEN O				
C82: IF D.9/1 AND (D.6/2 OR D.6/1) THEN O				

D.6.3.3.2 U3ConnectInd

Reference: ETS 300 325 [1], subclause 6.4.4.

Table D.56

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C83	
2	CalledDTEAddress		C85	
3	CalledDTEAddressExt		C85	
4	CallingDTEAddress		C85	
5	CallingDTEAddressExt		C85	
6	ReceiptConfirm		C85	
7	ExpeditedData		C84	
8	QOSParameters		C85	
9	UserData		C85	
10	Bcug		C85	
11	FastSelect		C85	
12	PacketSize		C84	
13	WindowSize		C85	
14	FacilityData		C85	
C83: IF D.9/2 THEN M C84: IF D.9/2 AND D.6/2 THEN M C85: IF D.9/2 AND (D.6/2 OR D.6/1) THEN M				

D.6.3.3.3 U3ConnectRsp

Reference: ETS 300 325 [1], subclause 6.4.5.

Table D.57: U3ConnectRsp

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C86	
2	CalledDTEAddress		C88	
3	CalledDTEAddressExt		C88	
4	CallingDTEAddress		C88	
5	CallingDTEAddressExt		C88	
6	RespondingDTEAddress		C88	
7	RespondingDTEAddressExt		C88	
8	ReceiptConfirm		C88	
9	ExpeditedData		C87	
10	QOSParameters		C88	
11	UserData		C88	
12	PacketSize		C87	
13	WindowSize		C88	
14	FacilityData		C88	
C86:	IF D.9/3 THEN M			
C87:	IF D.9/3 AND (D.6/2 THEN O			
C88:	IF D.9/3 AND (D.6/2 OR D.6/1) THEN O			

D.6.3.3.4 U3ConnectCnf

Reference: ETS 300 325 [1], subclause 6.4.6.

Table D.58: U3ConnectCnf

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C89	
2	CalledDTEAddress		C91	
3	CalledDTEAddressExt		C91	
4	CallingDTEAddress		C91	
5	CallingDTEAddressExt		C91	
6	RespondingDTEAddress		C91	
7	RespondingDTEAddressExt		C91	
8	ReceiptConfirm		C91	
9	ExpeditedData		C90	
10	QOSParameters		C91	
11	UserData		C91	
12	PacketSize		C90	
13	WindowSize		C91	
14	FacilityData		C91	
C89: IF D.9/4 THEN M C90: IF D.9/4 AND D.6/2 THEN M C91: IF D.9/4 AND (D.6/2 OR D.6/1) THEN M				

D.6.3.3.5 U3DisconnectReq

Reference: ETS 300 325 [1], subclause 6.4.7.

Table D.59: U3DisconnectReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C92	
2	X213Cause		C94	
3	RespondingDTEAddress		C94	
4	RespondingDTEAddressExt		C94	
5	UserData		C94	
6	X25Cause		C94	
7	X25Diagnostic		C93	
8	FacilityData		C94	
C92: IF D.9/5 THEN M C93: IF D.9/5 AND -D.61/6 THEN X ELSE IF D.9/5 AND (D.6/2 OR D.6/1) THEN O C94: IF D.9/5 AND (D.6/2 OR D.6/1) THEN O				

D.6.3.3.6 U3DisconnectInd

Reference: ETS 300 325 [1], subclause 6.4.8.

Table D.60: U3DisconnectInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C95	
2	X213Origin		C96	
3	X213Cause		C96	
4	UserData		C96	
5	RespondingDTEAddress		C96	
6	RespondingDTEAddressExt		C96	
7	X25Cause		C96	
8	X25Diagnostic		C96	
9	FacilityData		C96	
C95: IF D.9/6 THEN M C96: IF D.9/6 AND (D.6/2 OR D.6/1) THEN M				

D.6.3.3.7 U3DataReq

Reference: ETS 300 325 [1], subclause 6.4.9.

Table D.61: U3DataReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C97	
2	Bit_DQM		C98	
3	data in data buffer		C97	
C97: IF D.9/7 THEN M				
C98: IF D.9/7 AND (D.6/2 OR D.6/1 OR D.6/4) THEN O				

D.6.3.3.8 U3DataInd

Reference: ETS 300 325 [1], subclause 6.4.10.

Table D.62: U3DataInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C99	
2	Bit_DQM		C100	
3	data in data buffer		C99	
C99: IF D.9/8 THEN M				
C100: IF D.9/8 AND (D.6/2 OR D.6/1 OR D.6/4) THEN M				

D.6.3.3.9 U3ExpeditedDataReq

Reference: ETS 300 325 [1], subclause 6.4.11.

Table D.63: U3ExpeditedDataReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C101	
C101: IF D.9/9 THEN M				

D.6.3.3.10 U3ExpeditedDataInd

Reference: ETS 300 325 [1], subclause 6.4.12.

Table D.64: U3ExpeditedDataInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C102	
C102: IF D.9/10 THEN M				

D.6.3.3.11 U3ResetReq

Reference: ETS 300 325 [1], subclause 6.4.13.

Table D.6654: U3ResetReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	NCOID		C103	
2	X213Cause		C105	
3	X25Cause		C105	
4	X25Diagnostic		C104	
C103: IF D.9/11 THEN M				
C104: IF D.9/11 AND -D.64/3 THEN X ELSE IF D.9/11 AND (D.6/2 OR D.6/1) THEN O				
C105: IF D.9/11 AND (D.6/2 OR D.6/1) THEN O				

D.6.3.3.12 U3ResetInd

Reference: ETS 300 325 [1], subclause 6.4.14.

Table D.66: U3ResetInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C106	
C106: IF D.9/12 THEN M				

D.6.3.3.13 U3ResetRsp

Reference: ETS 300 325 [1], subclause 6.4.15.

Table D.67: U3ResetRsp

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C107	
C107: IF D.9/13 THEN M				

D.6.3.3.14 U3ResetCnf

Reference: ETS 300 325 [1], subclause 6.4.16.

Table D.68: U3ResetCnf

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C108	
C108: IF D.9/14 THEN M				

D.6.3.3.15 U3DataAcknowledgeReq

Reference: ETS 300 325 [1], subclause 6.4.17.

Table D.69: U3DataAcknowledgeReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C109	
C109: IF D.9/15 THEN M				

D.6.3.3.16 U3DataAcknowledgeInd

Reference: ETS 300 325 [1], subclause 6.4.18.

Table D.70: U3DataAcknowledgeInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C110	
C110: IF D.9/16 THEN M				

D.6.3.3.17 U3ReadyToReceiveReq

Reference: ETS 300 325 [1], subclause 6.4.19.

Table D.71: U3ReadyToReceiveReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C111	
C111: IF D.9/17 THEN M				

D.6.3.3.18 U3ReadyToReceiveInd

Reference: ETS 300 325 [1], subclause 6.4.20.

Table D.72: U3ReadyToReceiveInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C112	
C112: IF D.9/18 THEN M				

D.6.3.3.19 U3ErrorInd

Reference: ETS 300 325 [1], subclause 6.4.21.

Table D.73: U3ErrorInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C113	
C113: IF D.9/19 THEN M				

D.6.3.3.20 U1DataReq

Reference: ETS 300 325 [1], subclause 6.4.22.

Table D.74: U1DataReq

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C114	
C114: IF D.9/20 THEN M				

D.6.3.3.21 U1DataInd

Reference: ETS 300 325 [1], subclause 6.4.23.

Table D.75: U1DataInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		C115	
C115: IF D.9/21 THEN M				

D.6.3.3.22 U1ErrorInd

Reference: ETS 300 325 [1], subclause 6.4.24.

Table D.76: U1ErrorInd

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	All parameters		CError! Bookmark not defined.	
C116: IF D.9/22 THEN M				

D.6.4 Miscellaneous features and supplementary services**Table D.77: Miscellaneous features**

Item N°	Item of ISDN PCI	Ref./note	Status	Support
1	Transparent coding of facility information element	6.6.31	O	
2	Calling Line Identification restriction	6.3.34.4	O	
3	Advice of Charge during call	6.3.34.6	O	
4	Advice of charge at the end of the call	6.3.34.7	O	
NOTE: The references given in column 3 in this table are from ETS 300 325 [1].				

History

Document history			
July 1995	Public Enquiry	PE 87:	1995-07-10 to 1995-11-03
December 1997	Vote	V 9809:	1997-12-30 to 1998-02-27