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European Standard (Telecommunications series)

Integrated Services Digital Network (ISDN); Explicit Call Transfer (ECT) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 4: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the user

Reference

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Keywords

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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 ETSI standards One-step Approval Procedure.

The present document is part 4 of a multi-part deliverable covering the Explicit Call Transfer (ECT) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol, as described below:

Part 1: "Protocol specification";

Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";

Part 3: "Test Suite Structure and Test Purposes (TSS&TP) specification for the user";

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

Part 5: "Test Suite Structure and Test Purposes (TSS&TP) specification for the network";

Part 6: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network".

Proposed national transposition dates	
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

1   Scope

The present document specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma for the User side of the T reference point or coincident S and T reference point of implementations conforming to the stage three standard for the Explicit Call Transfer (ECT) supplementary service for the pan-European Integrated Services Digital Network (ISDN) by means of the Digital Subscriber Signalling System No. one (DSS1) protocol, EN 300 369-1 [1].

EN 300 369-3 [3] specifies the Test Suite Structure and Test Purposes (TSS&TP) related to this ATS and partial PIXIT proforma specification. Other parts specify the TSS&TP and the ATS and partial PIXIT proforma for the Network side of the T reference point or coincident S and T reference point of implementations conforming to EN 300 369-1 [1].

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 300 369-1 (V1.2.4): "Integrated Services Digital Network (ISDN); Explicit Call Transfer (ECT) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[2]   ETSI EN 300 369-2 (V1.2.4): "Integrated Services Digital Network (ISDN); Explicit Call Transfer (ECT) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".

[3]   ETSI EN 300 369-3 (V1.2.4): "Integrated Services Digital Network (ISDN); Explicit Call Transfer (ECT) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 3: Test Suite Structure and Test Purposes (TSS&TP) specification for the user".

[4]   ETSI EN 300 196-1: "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[5]   ETSI TR 101 101 (V1.1.1): "Methods for Testing and Specification (MTS); TTCN interim version including ASN.1 1994 support [ISO/IEC 9646-3] (Second Edition Mock-up for JTC1/SC21 Review)".

[6]   ISO/IEC 9646 (all parts): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework".

[7]   ISO/IEC 8825-1 (1998): "Information technology - ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)".

3   Definitions and abbreviations

3.1   Definitions

For the purposes of the present document, the terms and definitions given in ISO/IEC 9646 apply.

3.2   Abbreviations

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

ASN.1	Abstract Syntax Notation One
ASP	Abstract Service Primitive
ATS	Abstract Test Suite
BER	Basic Encoding Rules
ECT	Explicit Call Transfer
ETS	Executable Test Suite
ISDN	Integrated Services Digital Network
IUT	Implementation Under Test
LT	Lower Tester
MOT	Means Of Testing
OID	Object IDentifier
PCO	Point of Control and Observation
PCTR	Protocol Conformance Test Report
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
SCS	System Conformance Statement
SCTR	System Conformance Test Report (ISO 9646)
SUT	System Under Test
TP	Test Purpose
TTCN	Tree and Tabular Combined Notation

4   Abstract Test Method

The remote test method is applied for the ECT user ATS.

A Point of Control and Observation (PCO) resides at the service access point between layers 2 and 3 in the test system. This PCO is named "L" (for Lower). The L PCO is used to control and observe the behaviour of the Implementation Under Test (IUT) and test case verdicts are assigned depending on the behaviour observed at this PCO.

A second "informal" PCO, called "O" (for Operator) is used to specify control but not observation above the IUT; events at this PCO are never used to generate test case verdicts. Messages sent by the tester at this PCO explicitly indicate to the operator actions which are to be performed on the SUT. This is regarded as a preferred alternative to the use of the implicit send event.
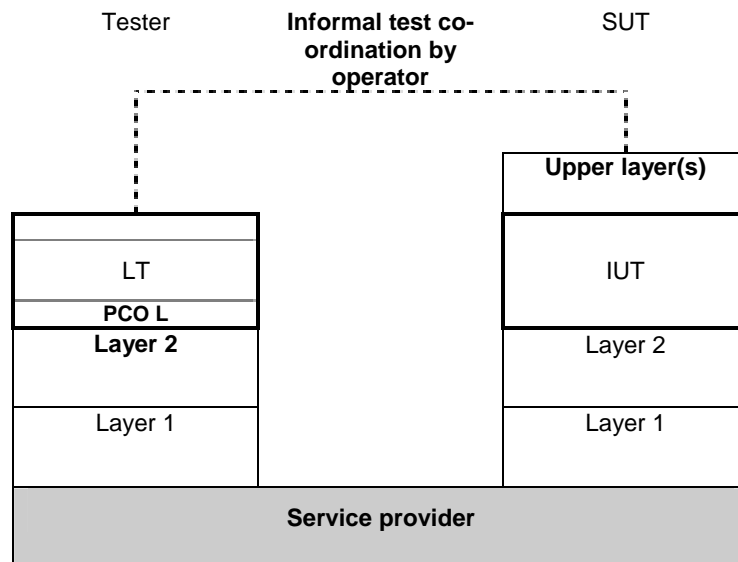
Figure 1: Remote test method with PCO O for test co-ordination

5 Untestable test purposes

There are no untestable test purposes associated with this ATS.

6 ATS conventions

6.1 Version of TTCN used

The version of TTCN used is that defined in TR 101 101 [5].

6.2 Use of ASN.1

6.2.1 Situations where ASN.1 is used

ASN.1 has been used for three major reasons:

1) types defined in ASN.1 can model problems that "pure" TTCN cannot. For instance, data structures modelling ordered or unordered sequences of data are preferably defined in ASN.1;

2) ASN.1 provides a better restriction mechanism for type definitions by using sub-type definitions;

3) it is necessary to use ASN.1 to reproduce the type definitions for remote operation components specified in the base standards in ASN.1.

The possibility to use TTCN and ASN.1 in combination is used, i.e. referring to an ASN.1 type from a TTCN type.

6.2.2 Specification of encoding rules

There is a variation in the encoding rules applied to ASN.1 types and constraints specified in this ATS and therefore a mechanism is needed to differentiate the encoding rules. However the mechanism specified in ISO/IEC 9646-3/AM2 [6] and in TR 101 101 [5] does not facilitate definition of the encoding rules as needed for this ATS. A solution is therefore used which is broadly in the spirit of ISO/IEC 9646-3/AM2 [6] in which comment fields have been used as a means of encoding rules.

For ASN.1 used in this ATS, two variations of encoding rules are used. One is the commonly known Basic Encoding Rules (BER) as specified in ISO/IEC 8825-1 [7]. In the second case the encoding is according to ISDN, i.e. the ASN.1 data types are a representation of structures contained within the ISDN specification (basic call, Generic functional protocol or individual supplementary service). For example, if octets of an information element are specified in ASN.1 as a SEQUENCE then this should be encoded in an Executable Test Suite (ETS) as any other ISDN information element specified using tabular TTCN. This ISDN encoding variation is the default encoding rule for this ATS. This means that all ASN.1 constraint tables are encoded using ISDN (non-BER) encoding unless stated otherwise. BER encoding should never be applied to an ASN.1 constraint where BER encoding has not been specified. This encoding rule is sometimes named "Direct Encoding".

For BER encoding, an indication is given in the comments field of the table header. For this ATS such indications appear in the ASN.1 type constraint declaration tables only. In the first line of the table header comment field, the notation "ASN1_Encoding: *BER*" is used.

    NOTE: Within BER, there are a number of variations for the encoding of lengths of fields.

According to EN 300 196-1 [4], an IUT should be able to interpret all length forms within BER for received PDUs. When sending PDUs containing BER encoding, EN 300 196-1 [4] gives guidelines but makes no restrictions on the length forms within BER which an IUT may apply.

In this particular ATS all ASN.1 type constraints which are of type "Component" are to be encoded using BER.

Table 1: ASN.1 type constraint declaration showing use of encoding variation

ASN.1 Type Constraint Declaration
Constraint Name :   Beg3PTYinv
ASN.1 Type   :   Component
Derivation Path   :
Comments   :   ASN1_Encoding: BER
Receive component: BeginECT invoke component

Description
begin3PTY_Components
begin3PTY_InvokeComp
{ invokeID   ?,
operation_value   localValue   4}
Detailed comments :

7 ATS to TP map

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

8 PCTR conformance

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

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

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

9   PIXIT conformance

A test realizer, producing an executable test suite for the ATS specification contained in annex C, is required, as specified in ISO/IEC 9646-4 [6], to produce an augmented partial PIXIT proforma conformant with this partial PIXIT proforma specification.

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

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

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

10   ATS conformance

The test realizer, producing MOT and ETS for this ATS specification, shall comply with the requirements of ISO/IEC 9646-4 [6]. In particular, these concern the realization of an ETS based on each ATS. The test realizer shall provide a statement of conformance of the MOT to this ATS specification.

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

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

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

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

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 300 369-1
PICS:	
Previous PCTRs (if any):	

A.1.3   Testing environment

PIXIT reference number:	
ATS specification:	EN 300 369-4
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/has not been shown by conformance assessment to be non-conforming to the specified protocol specification.

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

A.3   Static conformance summary

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

Strike the appropriate words in this sentence.

A.4   Dynamic conformance summary

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

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

Summary of the results of groups of tests:

....

....

....

....

A.5   Static conformance review report

If clause A.3 indicates non-conformance, this 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
ECT_U01_001				
ECT_U01_002				
ECT_U01_003				
ECT_U01_004				
ECT_U01_005				
ECT_U01_006				
ECT_U01_007				
ECT_U01_008				
ECT_U01_009				
ECT_U02_001				
ECT_U02_002				
ECT_U02_003				
ECT_U03_001				
ECT_U03_002				
ECT_U03_003				
ECT_U03_004				
ECT_U03_005				
ECT_U03_006				
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ECT_U03_012				
ECT_U03_013				
ECT_U03_014				
ECT_U03_015				
ECT_U03_016				
ECT_U03_017				
ECT_U03_018				
ECT_U03_019				
ECT_U03_020				
ECT_U03_021				
ECT_U03_022				
ECT_U03_023				
ECT_U03_024				
ECT_U03_025				
ECT_U03_026				
ECT_U03_027				
ECT_U04_001				
ECT_U04_002				
ECT_U04_003				
ECT_U04_004				
ECT_U04_005				
ECT_U04_006				
ECT_U04_007				
ECT_U04_008				
ECT_U04_009				
ECT_U04_010				
ECT_U04_011				
ECT_U04_012				
ECT_U04_013				
ECT_U05_001				
ECT_U05_002				
ECT_U05_003				
ECT_U05_004				
ECT_U05_005				
ECT_U05_006				
ECT_U05_007				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
ECT_U05_008				
ECT_U06_001				
ECT_U06_002				
ECT_U06_003				
ECT_U06_004				
ECT_U06_005				
ECT_U06_006				
ECT_U06_007				
ECT_U06_008				
ECT_U07_001				
ECT_U08_001				
ECT_U08_002				
ECT_U09_001				
ECT_U09_002				
ECT_U09_003				
ECT_U09_004				
ECT_U09_005				
ECT_U09_006				
ECT_U09_007				
ECT_U09_008				
ECT_U09_009				
ECT_U09_010				
ECT_U10_001				
ECT_U10_002				
ECT_U10_003				
ECT_U10_004				
ECT_U10_005				
ECT_U10_006				
ECT_U10_007				
ECT_U10_008				
ECT_U10_009				
ECT_U10_010				
ECT_U10_011				
ECT_U10_012				
ECT_U10_013				
ECT_U10_014				
ECT_U11_001				
ECT_U11_002				
ECT_U11_003				
ECT_U11_004				
ECT_U11_005				
ECT_U11_006				
ECT_U11_007				
ECT_U11_008				
ECT_U11_001				
ECT_U12_002				
ECT_U13_003				
ECT_U14_004				

A.7   Observations

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

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Annex B (normative):
Partial PIXIT proforma

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

B.1   Identification summary

PIXIT number:

....

Test laboratory name:

....

Date of issue:

....

Issued to:

....

B.2   Abstract test suite summary

Protocol specification: EN 300 369-1

ATS specification: EN 300 369-4

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   System Under Test (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 300 369-1.

Protocol version:

PICS reference:

> NOTE: The PICS reference should reference a completed PICS which is conformant with the PICS proforma contained in EN 300 369-2.

B.6.2   IUT information

B.6.2.1   Parameter values

Table B.1: Parameter values

Item	Question	Supported? (Y/N)	Allowed values	Value
1.1	Does the IUT support basic access?		N/A	N/A
1.2	What length of Call Reference is used?		1, 2	
1.3	Does the IUT support three calls (two in the Idle, one in the Held auxiliary state) at a time?		N/A	N/A

B.6.2.2   Sending of messages by IUT

Table B.2: Actions required to stimulate IUT to send messages

Item	Action: What actions, if possible, have to be taken to cause the IUT to …	Supported? (Y/N)	Stimulus (action taken)
2.1	perform transfer in the private network between two calls with users in the public network, both active.		
2.2	perform transfer in the private network between two calls with users in the public network, one active and one alerting		
2.3	perform transfer in the private network between one call with a user in the public network (active) and one call with a user in the private network (active)		
2.4	perform transfer in the private network between one call with a user in the public network (active) and one call with a user in the private network (alerting)		
2.5	perform transfer in the private network between one call with a user in the public network (alerting) and one call with a user in the private network (active)		
2.6	invoke transfer in the public network between two calls with users in the public network, both active.		
2.7	invoke transfer in the public network between two calls with users in the public network, one active and one alerting		
2.8	send an ALERTING message and to remain stable in the call state U7		
2.9	set to TRUE if the white book is supported, set to FALSE if the blue book is supported		
NOTE:	Items 2.1 to 2.7 are applicable to the T reference point.		

B.6.2.3   Timer values

Table B.3: Timer values

Item	Timer: Give a value for the timer that is used to ...	Value (in seconds)
3.1	wait for the test operator to perform an implicit send action (TWAIT)	
3.2	wait for the IUT to respond to a stimulus sent by the tester (TAC)	
3.3	check that the IUT does not respond to a stimulus sent by the tester (TNOAC)	
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.6.2.4   Information element codings

Table B.4: Information element codings

Item	Provide, if possible, …	Value
4.1	a coding of a Bearer Capability information element, which the IUT is compatible with, for the purpose of accepting incoming calls	
4.2	a coding of a Low layer compatibility information element, which the IUT is compatible with, for the purpose of accepting incoming calls	
4.3	a coding of a High layer compatibility information element, which the IUT is compatible with, for the purpose of accepting incoming calls	
4.4	a Called party number information element, which the IUT is compatible with, for the purpose of accepting incoming calls	
4.5	preferred channel number (used in Channel identification information element) to be used for Incoming calls (applicable to primary rate access only)	

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 [6].

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.

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

The TTCN.GR representation of this ATS is contained in an Adobe Portable Document Format™ file (ECT_U10.PDF contained in archive en_30036904v010301o0.ZIP) which accompanies the present document.

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

The TTCN.MP representation corresponding to this ATS is contained in an ASCII file (ECT_U10.MP contained in archive en_30036904v010301o0.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.

Annex D (informative):
Changes with respect to the previous EN 300 369-4 V1.2.4

The following comments received in document 4TD0133 (for the Plenary Meeting 11-2000) were analysed and included when needed:

- The type BIT7OR15 was added as BITSTRING[7 .. 15], as the existing ASN.1 type BIT7OR15, which has subsequently been removed from the ATS, contained errors.

- The type BIT7OR8 was added as BITSTRING[7 .. 15], as the existing ASN.1 type BIT7OR8, which has subsequently been removed from the ATS, contained errors.

- The type CHI_I was added as BITSTRING[7 .. 15], as the existing ASN.1 type CHI_I, which has subsequently been removed from the ATS, contained errors.

- The type CHI was added, as the existing ASN.1 type CHI which has subsequently been removed from the ATS, contained errors.

- In the type CAU, replace the type BITSTRING[8] f the field cau_e4_rec by OCTETSTRING[0 TO 1], because this field is optional. Replace the type OCTETSTRING [1 TO 28] of the field cau_di by OCTETSTRING[0 TO 28], because this field is optional.

- The erroneous ASN.1 type BIT7OR15 has been removed.

- The erroneous ASN.1 type BIT7OR8 has been removed.

- The erroneous ASN.1 type CHI_I has been removed.

- The type OID have been removed and replaced by the ASN.1 type OBJECT IDENTIFIER. Another modification has bee done to correct this inconsistency.

- The test suite parameter WHITE_BOOK has been added to allow the receipt of STATUS messages in response to STATUS ENQUIRY messages in call state U00. For further explanation see 6.3.

- Test suite parameter BCAPL_S and BCAPV_S have been added to contain the length and the value of the bearer capability sent by the IUT.

- The test suite parameter CW_STATE4_SUPPORTED has been added to indicate if the CW supplementary is supported in state 4. This modification was already done

- The test case selection expression IMPLICIT_LINKAGE_ALERTING_CWS4 has been added as a copy of IMPLICIT_LINKAGE_ALERTING with the addition expression " AND CW_STATE4_SUPPORTED". This test case selection expression is used to select the following test cases: ECT_U01_003, ECT_U01_006, ECT_U01_009, ECT_U02_003, ECT_U05_003, ECT_U06_003. In this cases the first call shall be in state 4 and the second call in state 10, so the IUT shall support the CW supplementary service. This modification was already done.

- The constants eCTOID and linkIDNotAssignedByNetwork have been removed. These constants have been replaced by their values in the following constraints: explicitEctExecute, requestSubaddress, subaddressTransfer, ectLinkIdRequest, ectInform, ectLoopTest. Another modification has bee done to correct this inconsistency.

- The test case variable CREF0 has been created. See 6.3 for more explanation.

- In the following constraints: explicitEctExecute, requestSubaddress, subaddressTransfer, ectLinkIdRequest, ectInfor, ectLoopTest, the constants eCTOID and linkIDNotAssignedByNetwork have been removed and replaced by their value preceding by the name GlobalValue. When this constraints are called, the name GlobalValue shall be deleted. . Another modification has bee done to correct this inconsistency.

- The constraint BCAP2 has been added it contains the values BCAPL_S and BCAPV_S.

- The constraint CHI2b and CHI3p have been added.

- The name of the constraint CN1 is a reserved word of the K1197 ISDN simulation software. To avoid problems, CN1 was replaced by CON1 in the ATS. For the information element chi, replace the wildcard '*' by ASSIGN_CHI (CHI2b, CHI3p, BASIC) IF_PRESENT.

- In the constraint AL1, replace the value '?' of the field chi by the wildcard '*', because the channel Id is an optional field in the ALERTING message.

- The constraint RC3 has been created to check received RELEASE COMPLETE messages with a specific cause value given as a parameter. this PDU is used in the steps ECT_U_CS_001, ECT_U_CS_002 ans CS59901.

- In the constraint SU1, replace the value '*' of the field bcap by BCAP2. This is necessary because the compiler could match extended bearer capability fields with the octets of a progress indicator.

- The PDU constraint HL3 and the ASP constraint A_HL3 have been added to check HOLD PDUs with a specific call reference.

- The ASP constraint A_RC3 has been created to receive the PDU RC3. This modification was already implemented.

- ECT_U_PR_001B : This new test step has been created to set up the second call for the three-party conversation. The implementation under test has now the possibility to put the first call on hold before answering the second call. This modification was already implemented.

- ECT_U_PR_002_I: This test step has been created as a copy of ECT_U_PR_002 modified as a consequence of the introduction of PTY3_U_PR_001B this step is used when the second call is an incoming call. this modification was already implemented

- ECT_U_PR_002_O: This test step has been created as a copy of ECT_U_PR_002, this step is used when the second call is an outgoing call. This modification was already implemented

- ECT_U_PR_004: The first line +PR3001 has been deleted, because the step +PR3001 is always called at the beginning of each test case. This modification was already implemented.

- ECT_U_CS_001, ECT_U_CS_002, CS59901: When a STATUS ENQUIRY message is sent and the IUT is in the Null call state U00. User equipment implemented according to the latest version of the ISDN standard (White book) may answer with a STATUS message. But for user equipment not implemented with the latest version of the ISDN standard, the expected answers are RELEASE COMPLETE messages. To avoid unexpected FAIL verdicts in these test steps a branch allowing the receipt of the RELEASE COMPLETE message (checked with the new constraint RC3), if the new test suite parameter WHITE_BOOK = NO and the call state = 0, has been added.

- In the step ECT_U_PR_003, the flag line when receiving the FACILITY message is wrong. Line 1 add (NOT_FL1 := (FL1+1) MOD 2) and line 2 replace the flag FL1 by NOT_FL1. This modification was already implemented.

- In the steps ECT_U_PR_004, the parameter CALL_REF is assigned with the call reference value received in the SETUP. But the parameter is a parameter by value, this means that the variable is affected in the steps, but outside this step it does not contain any value. This parameter has been deleted and replace by the test case variable CREF0. In each test case that is using the step ECT_U_PR_004, the call reference variable (CREF1 or CREF2) is deleted from the list of parameters and after a line is inserted containing (CREF1 := CREF0) or (CREF2 := CREF0).

On the basic access, SETUP messages shall be sent in UI frame, the ATS has been modified regarding this rule.

In addition, revisions including the update of the PIXIT tables were done.

Annex E (informative):
Bibliography

ETS 300 196-2 (1996): "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".

EN 300 403-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification [ITU-T Recommendation Q.931 (1993), modified]".

EN 300 141-2 (V1.2): "Integrated Services Digital Network (ISDN); Call Hold (HOLD) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".

ITU-T Recommendation X.690 (1997): "Information technology – ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)".

History

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