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**Integrated Services Digital Network (ISDN);
Digital Subscriber Signalling System No. one (DSS1) and
Signalling System No.7 (SS7) protocols;
Signalling application for the mobility management
service on the alpha interface;
Part 6: Abstract Test Suite (ATS) and partial Protocol
Implementation eXtra Information for Testing (PIXIT)
proforma specification for the network**



Reference

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Keywords

ISDN, DSS1, ATS, PIXIT, network, CTM, SS7

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Contents

Intellectual Property Rights	5
Foreword.....	5
1 Scope.....	6
2 References.....	6
3 Definitions, symbols and abbreviations	6
3.1 Definitions	6
3.2 Abbreviations.....	7
4 Abstract Test Method.....	7
5 Untestable test purposes.....	8
6 ATS conventions	8
6.1 Version of TTCN used	8
6.2 Naming conventions.....	8
6.2.1 Declarations part.....	8
6.2.1.1 Simple type, ASN.1 type and structured type definitions	8
6.2.1.2 Test suite operations definitions	8
6.2.1.3 Test suite parameter declarations.....	8
6.2.1.4 Test case selection expression definitions.....	8
6.2.1.5 Test suite constant declarations.....	8
6.2.1.6 Test suite variable declarations.....	8
6.2.1.7 Test case variable declarations	8
6.2.1.8 PCO type declarations	9
6.2.1.9 PCO declarations.....	9
6.2.1.10 Timer declarations	9
6.2.1.11 ASP type definitions.....	9
6.2.1.12 PDU type definitions	9
6.2.2 Constraints part.....	9
6.2.2.1 Structured type constraints.....	9
6.2.2.2 ASN.1 type constraints	9
6.2.2.3 ASP constraints	9
6.2.2.4 PDU constraint	9
6.2.3 Dynamic part	9
6.2.3.1 Test case identifiers	10
6.2.3.2 Test step identifiers.....	10
6.3 Use of ASN.1	10
6.3.1 Situations where ASN.1 is used.....	10
6.3.2 Specification of encoding rules.....	10
7 ATS to TP map.....	11
8 PCTR conformance	11
9 PIXIT conformance	11
10 ATS conformance.....	11
Annex A (normative): Partial PCTR proforma.....	12
A.1 Identification summary	12
A.1.1 Protocol conformance test report.....	12
A.1.2 IUT identification.....	12
A.1.3 Testing environment.....	13
A.1.4 Limits and reservations.....	13
A.1.5 Comments.....	13

A.2	IUT conformance status	13
A.3	Static conformance summary	13
A.4	Dynamic conformance summary	14
A.5	Static conformance review report	14
A.6	Test campaign report	15
A.7	Observations	21
Annex B (normative):	Partial PIXIT proforma	22
B.1	Identification summary	22
B.2	Abstract test suite summary	22
B.3	Test laboratory	22
B.4	Client (of the test laboratory)	23
B.5	System Under Test (SUT)	23
B.6	Protocol information	24
B.6.1	Protocol identification	24
B.6.2	IUT information	24
B.6.2.1	Parameter values	24
B.6.2.2	Configuration of IUT	25
B.6.2.3	Timer values	26
B.7	Basic call PIXIT items	26
B.7.1	Parameter values - information element coding	26
Annex C (normative):	Abstract Test Suite (ATS)	28
C.1	The TTCN Graphical form (TTCN.GR)	28
C.2	The TTCN Machine Processable form (TTCN.MP)	28
Annex D (informative):	General structure of ATS	29
	Bibliography	30
	History	31

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Foreword

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

The present document is part 6 of a multi-part deliverable covering the Digital Subscriber Signalling System No. one (DSS1) and Signalling System No.7 protocols; Signalling application for the mobility management service on the alpha interface, as identified 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".**

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1 Scope

This sixth part of EN 301 144 specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma for the network of the Signalling application for the mobility management service on the alpha interface. It is applicable to all types of exchanges as defined in the reference specification.

Part 5 of EN 301 144 specifies the Test Suite Structure and Test Purposes (TSS&TP) related to this protocol. Other parts specify the TSS&TP and the ATS and partial PIXIT proforma for the User side for implementations conforming to part 1 of EN 301 144 [5].

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, subsequent revisions do apply.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

- [1] ETSI EN 300 196: "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol".
- [2] ISO/IEC 9646 (all parts): "Information Technology - Open Systems Interconnection - Conformance testing methodology and framework".
- [3] ETSI TR 101 101 (V1.1): "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)".
- [4] ETSI EN 300 175-5: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 5: Network (NWK) Layer".
- [5] ETSI EN 301 144-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) and Signalling System No.7 (SS7); Signalling application for the mobility management service on the alpha interface; Part 1: Protocol specification".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ISO/IEC 9646 [2] apply.

3.2 Abbreviations

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

ASP	Abstract Service Primitive
ATS	Abstract Test Suite
BER	Basic Encoding Rules
IUT	Implementation Under Test
LT	Lower Tester
MOT	Means Of Testing
PCO	Point of Control and Observation
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
SUT	System Under Test
TP	Test Purpose
TSS	Test Suite Structure
TTCN	Tree and Tabular Combined Notation
UT	Upper Tester

4 Abstract Test Method

The remote test method is applied for this 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 concerning 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.

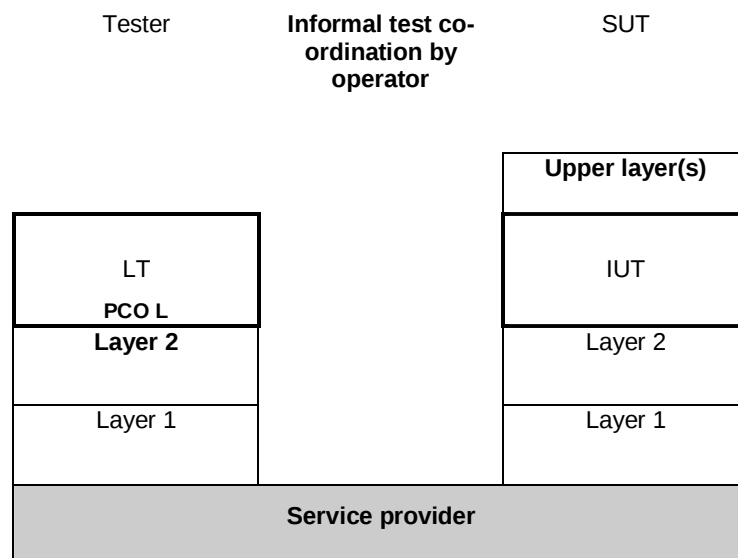


Figure 1: Remote test method with PCO O for test co-ordination

5 Untestable test purposes

There are no untestable test purposes.

6 ATS conventions

6.1 Version of TTCN used

The version of TTCN used is that defined in TR 101 101 [3].

6.2 Naming conventions

6.2.1 Declarations part

This subclause describes the naming conventions chosen for the elements of the ATS declarations part.

6.2.1.1 Simple type, ASN.1 type and structured type definitions

The test suite simple type, ASN.1 type and structured type identifiers are written in lowercase starting by an uppercase letter or completely in upper case letters.

6.2.1.2 Test suite operations definitions

The test suite operation identifiers are composed of strings in uppercase and lowercase letters starting by the string "TSO_".

EXAMPLE: TSO_CalcFieLength

6.2.1.3 Test suite parameter declarations

The test suite parameter identifiers are composed of strings in uppercase and lowercase letters starting by the uppercase string "PC_" for a PICS or "PX_" for a PIXIT.

6.2.1.4 Test case selection expression definitions

The naming conventions for the test case selection expression definitions use free text starting with the string: "TCSE_". The name of the expression shall explain clearly the selection rule. The test case selection expressions are generally logical combinations of the applied test suite parameter definitions.

6.2.1.5 Test suite constant declarations

The test suite constant identifiers are composed of strings in uppercase and lower letters starting by the uppercase string "TSC_".

6.2.1.6 Test suite variable declarations

The test suite variable identifiers are composed of string in lowercase letters starting by the lowercase string "tsv_".

6.2.1.7 Test case variable declarations

The test case variable identifiers are composed of strings in lowercase letters starting by the lowercase string "tcv_".

6.2.1.8 PCO type declarations

The point of control and observation type identifiers consist of two or three capital letters.

6.2.1.9 PCO declarations

The point of control and observation identifiers consist of one capital letter.

6.2.1.10 Timer declarations

The timer names begin with the prefix "T_", followed by a string in lowercase or uppercase letters with each word in the following string starting with an uppercase letter.

6.2.1.11 ASP type definitions

The ASP types are defined in uppercase letters.

6.2.1.12 PDU type definitions

The type of a PDU is given in uppercase letters, followed by the string "_PDU".

6.2.2 Constraints part

This subclause describes the naming conventions chosen for the elements of the ATS constraints part.

6.2.2.1 Structured type constraints

Structured type constraint identifiers begin with an uppercase letter followed by uppercase and lowercase letters. The meaning of the identifier represents the contents of the structured type constraint.

6.2.2.2 ASN.1 type constraints

ASN.1 type constraint identifiers begin with an uppercase letter followed by uppercase and lowercase letters. The meaning of the identifier represents the contents of the ASN.1 type constraint.

6.2.2.3 ASP constraints

ASP constraint identifiers begin with an uppercase letter followed by uppercase and lowercase letters. The meaning of the identifier represents the contents of the ASP constraint.

6.2.2.4 PDU constraint

Constraint identifiers begin with the type of the PDU meaningfully abbreviated, written in uppercase.

As a suffix a string "_S" or "_R" is appended to indicate if the constraint is sent or received by the tester. This string is followed by a number allowing to distinguish between different variations of sent or received PDUs.

In case the PDU constraints are specific to the CTM part of the DECT access to GSM part of the ATS the character "C" respectively "G" immediately follows the underscore character.

6.2.3 Dynamic part

This subclause describes the naming conventions chosen for the elements of the ATS dynamic part.

6.2.3.1 Test case identifiers

The test case identifiers are built with a string of uppercase letters subdivided by underscore characters distinguishing between the different groups and subgroups of which the test suite consists. The highest group level allows to make the difference between the test cases according to "CTM" and those according to "DECT access to GSM", for which prefixes "CTM" and "DG" are used. The lowest subgroup level divides "valid" and "invalid" test cases, represented by the character "V" or "I" respectively. Within these subgroups the test case are given individual numbers.

EXAMPLES: CTM_..._..._V_01
DG_..._..._I_02

This convention is the one applied to identify the test cases in the TSS&TP document.

6.2.3.2 Test step identifiers

The test step identifiers are built with a string of lowercase letters prefixed by a string of capital letters and joined by an underscore character. The first string indicates the main function of the test step; e.g. PR for preamble, PO for postamble, ST for a normal step, LTS for a local test step, and DEF for a default test step. The second string indicates the meaning of the step.

EXAMPLES: PR_Name
PO_Name
ST_Name
LTS_Name
DEF_Name

6.3 Use of ASN.1

6.3.1 Situations where ASN.1 is used

ASN.1 has been used for three major reasons. First, 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. Second, ASN.1 provides a better restriction mechanism for type definitions by using sub-type definitions. Third, 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.

6.3.2 Specification of encoding rules

The data types therefore consist of non-ASN.1 and eventually ASN.1 parts, each of which has to be encoded as these parts require. Consequently two different types of encoding rules are used in this test suite:

- direct Encoding: the data structures fully specified in the relevant protocol standards – in a form sometimes called tabular - are mapped bitwise onto the transfer data stream;
- basic Encoding Rules defined in the ASN.1 standard.

Note that within BER, there are a number of variations for the encoding of lengths of fields. According to EN 300 196-1 [1], 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 [1] gives guidelines but makes no restrictions on the length forms within BER which an IUT may apply. This ATS prescribes a BER encoding variation which requests that, if possible, the short form of length encoding is being used in data being sent, and that the receiving end shall be capable of decoding any length form.

In this particular ATS all ASN.1 type constraints which are of type "Component" are to be encoded using BER. In circumstances where it is irrelevant received components are decoded as if they had been directly encoded, applying a simplified data structure.

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 [2], to produce a PCTR conformant with the PCTR template given in annex B of ISO/IEC 9646-5 [2].

Furthermore, a test laboratory, offering testing for either 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 ATS specification contained in annex C, is required, as specified in ISO/IEC 9646-4 [2], 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 either ATS specification contained in annex C, is required, as specified in ISO/IEC 9646-5 [2], 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 executable test suite for this ATS specification, shall comply with the requirements of ISO/IEC 9646-4 [2]. In particular, these concern the realization of an executable test suite based to this ATS specification. The test realizer shall provide a statement of conformance of the MOT to this ATS specification.

An executable test suite 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 [2].

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

Annex A (normative): Partial PCTR proforma

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

A.1 Identification summary

A.1.1 Protocol conformance test report

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

A.1.2 IUT identification

Name:	
Version:	
Protocol specification:	EN 301 144-1
PICS:	
Previous PCTR (if any):	

A.1.3 Testing environment

PIXIT Reference number:	
ATS Specification:	EN 301 144-6
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.

.....

.....

.....

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 the present document) and there are no "FAIL" verdicts to be recorded (in clause A.6) strike the word "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 the present document) 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.

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

A.6 Test campaign report

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
CTM_RD_SR_V_01				
CTM_RD_SR_I_01				
CTM_RD_SR_I_02				
CTM_RD_SR_I_03				
CTM_RD_SR_I_04				
CTM_RD_SR_I_05				
CTM_RD_SD_V_01				
CTM_RD_SD_V_02				
CTM_RD_SD_I_01				
CTM_RD_SD_I_02				
CTM_RD_SD_I_03				
CTM_RD_SD_I_04				
CTM_RD_SD_I_05				
CTM_RD_SD_I_06				
CTM_RD_SD_I_0701				
CTM_RD_SD_I_0702				
CTM_RD_SD_I_0703				
CTM_RD_SD_I_0704				
CTM_RD_SD_I_0705				
CTM_RD_SD_I_0706				
CTM_RD_SD_I_0707				
CTM_RD_SD_I_0708				
CTM_RD_SD_I_0709				
CTM_RD_SD_I_0710				
CTM_RD_SD_I_0711				
CTM_RD_SD_I_0712				
CTM_RD_SD_I_0713				
CTM_RD_SD_I_0714				
CTM_RD_SD_I_0715				
CTM_RD_SD_I_0716				
CTM_RD_SD_I_0717				
CTM_RD_SD_I_0718				
CTM_RD_SD_I_0719				
CTM_RD_SD_I_0720				
CTM_RD_SD_I_0721				
CTM_RD_SD_I_0722				
CTM_RD_SD_I_0723				
CTM_RD_SD_I_0724				
CTM_RD_SD_I_08				
CTM_RD_SD_I_09				
CTM_RD_SD_I_10				
CTM_AD_LR_V_01				
CTM_AD_LR_I_01				
CTM_AD_LR_I_02				
CTM_AD_LR_I_03				
CTM_AD_LR_I_04				
CTM_AD_LR_I_05				
CTM_AD_LC_V_01				
CTM_AD_LC_V_02				
CTM_AD_LC_I_01				
CTM_AD_LC_I_02				
CTM_AD_LC_I_03				
CTM_AD_LC_I_04				
CTM_AD_LC_I_05				
CTM_IO_LRS_V_01				
CTM_IO_LRS_I_01				
CTM_IO_LRS_I_02				
CTM_IO_LRS_I_03				
CTM_IO_LRS_I_04				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
CTM_IO_LRS_I_05				
CTM_IO_LRS_I_07				
CTM_IO_TA_V_01				
CTM_IO_TA_V_02				
CTM_IO_TA_I_01				
CTM_IO_TA_I_0201				
CTM_IO_TA_I_0202				
CTM_IO_TA_I_0203				
CTM_IO_TA_I_0204				
CTM_IO_TA_I_0205				
CTM_IO_TA_I_0206				
CTM_IO_TA_I_0207				
CTM_IO_TA_I_0208				
CTM_IO_TA_I_0209				
CTM_IO_TA_I_0210				
CTM_IO_TA_I_0211				
CTM_IO_TA_I_0212				
CTM_IO_TA_I_0213				
CTM_IO_TA_I_0214				
CTM_IO_TA_I_0215				
CTM_IO_TA_I_0216				
CTM_IO_TA_I_0217				
CTM_IO_TA_I_0218				
CTM_IO_TA_I_0219				
CTM_IO_TA_I_0220				
CTM_IO_TA_I_0221				
CTM_IO_TA_I_0222				
CTM_IO_TA_I_0223				
CTM_IO_TA_I_0224				
CTM_IO_TA_I_03				
CTM_IO_TA_I_04				
CTM_IO_TA_I_05				
CTM_IO_TA_I_06				
CTM_IO_TA_I_07				
CTM_IO_TA_I_08				
CTM_IO_TA_I_09				
CTM_IO_TA_I_10				
CTM_IO_TA_I_11				
CTM_IO_NA_V_01				
CTM_IO_NA_I_01				
CTM_IO_NA_I_02				
CTM_IO_NA_I_03				
CTM_IO_NA_I_04				
CTM_IO_NA_I_05				
CTM_IO_NIC_V_01				
CTM_IO_NIC_V_02				
CTM_IO_NIC_I_01				
CTM_IO_NIC_I_0201				
CTM_IO_NIC_I_0202				
CTM_IO_NIC_I_0203				
CTM_IO_NIC_I_0204				
CTM_IO_NIC_I_0205				
CTM_IO_NIC_I_0206				
CTM_IO_NIC_I_0207				
CTM_IO_NIC_I_0208				
CTM_IO_NIC_I_0209				
CTM_IO_NIC_I_0210				
CTM_IO_NIC_I_0211				
CTM_IO_NIC_I_0212				
CTM_IO_NIC_I_0213				
CTM_IO_NIC_I_0214				
CTM_IO_NIC_I_0215				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
CTM_IO_NIC_I_0216				
CTM_IO_NIC_I_0217				
CTM_IO_NIC_I_0219				
CTM_IO_NIC_I_0220				
CTM_IO_NIC_I_0221				
CTM_IO_NIC_I_0222				
CTM_IO_NIC_I_0223				
CTM_IO_NIC_I_0224				
CTM_IO_NIC_I_03				
CTM_IO_NIC_I_04				
CTM_IO_NIC_I_05				
CTM_IO_NIC_I_06				
CTM_IO_NIC_I_07				
CTM_IO_NIC_I_08				
CTM_IO_NIC_I_09				
CTM_IO_NIC_I_10				
CTM_IO_NIC_I_11				
CTM_IO_PIC_V_01				
CTM_IO_PIC_I_01				
CTM_IO_PIC_I_02				
CTM_IO_PIC_I_03				
CTM_IO_PIC_I_04				
CTM_IO_PIC_I_05				
CTM_IO_KA_V_01				
CTM_IO_KA_V_02				
CTM_IO_KA_I_01				
CTM_IO_KA_I_0201				
CTM_IO_KA_I_0202				
CTM_IO_KA_I_0203				
CTM_IO_KA_I_0204				
CTM_IO_KA_I_0205				
CTM_IO_KA_I_0206				
CTM_IO_KA_I_0207				
CTM_IO_KA_I_0208				
CTM_IO_KA_I_0209				
CTM_IO_KA_I_0210				
CTM_IO_KA_I_0211				
CTM_IO_KA_I_0212				
CTM_IO_KA_I_0213				
CTM_IO_KA_I_0214				
CTM_IO_KA_I_0215				
CTM_IO_KA_I_0216				
CTM_IO_KA_I_0217				
CTM_IO_KA_I_0218				
CTM_IO_KA_I_0219				
CTM_IO_KA_I_0220				
CTM_IO_KA_I_0221				
CTM_IO_KA_I_0222				
CTM_IO_KA_I_0223				
CTM_IO_KA_I_0224				
CTM_IO_KA_I_03				
CTM_IO_KA_I_04				
CTM_IO_KA_I_05				
CTM_IO_KA_I_06				
CTM_IO_KA_I_07				
CTM_IO_KA_I_08				
CTM_IO_KA_I_09				
CTM_IO_KA_I_10				
CTM_IO_KA_I_11				
CTM_IO_KA_I_12				
CTM_IO_IR_V_01				
CTM_IO_IR_V_02				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
CTM_IO_IR_I_01				
CTM_IO_IR_I_02				
CTM_IO_IR_I_03				
CTM_IO_IR_I_05				
CTM_IO_IR_I_06				
CTM_IO_IR_I_07				
CTM_IO_IR_I_08				
CTM_IO_IR_I_09				
CTM_IO_IR_I_10				
CTM_EMB_V_01				
CTM_EMB_V_02				
CTM_EMB_V_03				
CTM_EMB_V_04				
CTM_EMB_V_05				
CTM_OC_V_01				
CTM_OC_I_01				
CTM_OC_I_02				
CTM_OC_I_03				
CTM_OC_I_04				
CTM_OC_I_05				
CTM_IC_V_01				
CTM_IC_I_0101				
CTM_IC_I_0102				
CTM_IC_I_0103				
CTM_IC_I_0104				
CTM_IC_I_0105				
CTM_IC_I_0106				
CTM_IC_I_0107				
CTM_IC_I_0108				
CTM_IC_I_0109				
CTM_IC_I_0110				
CTM_IC_I_0111				
CTM_IC_I_0112				
CTM_IC_I_0113				
CTM_IC_I_0114				
CTM_IC_I_0115				
CTM_IC_I_0116				
CTM_IC_I_0117				
CTM_IC_I_0118				
CTM_IC_I_0119				
CTM_IC_I_0120				
CTM_IC_I_0121				
CTM_IC_I_0122				
CTM_IC_I_0123				
CTM_IC_I_0124				
CTM_IC_I_02				
CTM_IC_I_03				
CTM_IC_I_04				
CTM_IC_I_05				
CTM_IC_I_06				
CTM_IC_I_07				
DG_AD_LR_V_01				
DG_AD_LR_I_01				
DG_AD_LR_I_02				
DG_AD_LR_I_03				
DG_AD_LR_I_04				
DG_AD_LR_I_05				
DG_AD_LC_V_01				
DG_AD_LC_I_01				
DG_AD_D_V_01				
DG_AD_D_I_01				
DG_IO_TA_V_01				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
DG_IO_TA_V_02				
DG_IO_TA_I_01				
DG_IO_TA_I_0201				
DG_IO_TA_I_0202				
DG_IO_TA_I_0204				
DG_IO_TA_I_0205				
DG_IO_TA_I_0206				
DG_IO_TA_I_0207				
DG_IO_TA_I_0208				
DG_IO_TA_I_0209				
DG_IO_TA_I_0210				
DG_IO_TA_I_0211				
DG_IO_TA_I_0212				
DG_IO_TA_I_0213				
DG_IO_TA_I_0214				
DG_IO_TA_I_0215				
DG_IO_TA_I_0216				
DG_IO_TA_I_0217				
DG_IO_TA_I_0218				
DG_IO_TA_I_0219				
DG_IO_TA_I_03				
DG_IO_TA_I_04				
DG_IO_TA_I_05				
DG_IO_TA_I_06				
DG_IO_TA_I_07				
DG_IO_TA_I_08				
DG_IO_TA_I_09				
DG_IO_TA_I_10				
DG_IO_TA_I_11				
DG_IO_NIC_V_01				
DG_IO_NIC_V_02				
DG_IO_NIC_I_01				
DG_IO_NIC_I_0201				
DG_IO_NIC_I_0202				
DG_IO_NIC_I_0203				
DG_IO_NIC_I_0204				
DG_IO_NIC_I_0205				
DG_IO_NIC_I_0206				
DG_IO_NIC_I_0207				
DG_IO_NIC_I_0208				
DG_IO_NIC_I_0209				
DG_IO_NIC_I_0210				
DG_IO_NIC_I_0211				
DG_IO_NIC_I_0212				
DG_IO_NIC_I_0213				
DG_IO_NIC_I_0214				
DG_IO_NIC_I_0215				
DG_IO_NIC_I_0216				
DG_IO_NIC_I_0217				
DG_IO_NIC_I_0218				
DG_IO_NIC_I_0219				
DG_IO_NIC_I_03				
DG_IO_NIC_I_04				
DG_IO_NIC_I_05				
DG_IO_NIC_I_06				
DG_IO_NIC_I_07				
DG_IO_NIC_I_08				
DG_IO_NIC_I_09				
DG_IO_NIC_I_10				
DG_IO_NIC_I_11				
DG_IO_TIA_V_01				
DG_IO_TIA_V_02				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
DG_IO_TIA_V_03				
DG_IO_TIA_V_04				
DG_IO_TIA_I_01				
DG_IO_TIA_I_03				
DG_IO_IR_V_01				
DG_IO_IR_I_01				
DG_IO_IR_I_02				
DG_IO_IR_I_03				
DG_IO_IR_I_04				
DG_IO_IR_I_05				
DG_IO_IR_I_06				
DG_IO_IR_I_07				
DG_IO_IR_I_08				
DG_IO_IR_I_09				
DG_IO_IR_I_10				
DG_EMB_V_01				
DG_EMB_V_02				
DG_EMB_V_03				
DG_OC_V_01				
DG_OC_I_01				
DG_OC_I_02				
DG_OC_I_03				
DG_OC_I_04				
DG_OC_I_05				
DG_IC_V_01				
DG_IC_I_0101				
DG_IC_I_0102				
DG_IC_I_0103				
DG_IC_I_0104				
DG_IC_I_0105				
DG_IC_I_0106				
DG_IC_I_0107				
DG_IC_I_0108				
DG_IC_I_0109				
DG_IC_I_0110				
DG_IC_I_0111				
DG_IC_I_0112				
DG_IC_I_0113				
DG_IC_I_0114				
DG_IC_I_0115				
DG_IC_I_0116				
DG_IC_I_0117				
DG_IC_I_0118				
DG_IC_I_0119				
DG_IC_I_02				
DG_IC_I_03				
DG_IC_I_04				
DG_IC_I_05				
DG_IC_I_06				

A.7 Observations

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

[illegible]

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 partial PIXIT.

B.1 Identification summary

PIXIT number:

.....

Test laboratory name:

.....

Date of issue:

.....

Issued to:

.....

B.2 Abstract test suite summary

Protocol specification: EN 301 144-1

ATS specification: EN 301 144-6

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 301 144-1

Protocol version:

PICS reference:

NOTE: The PICS reference should reference a completed PICS which is conformant with the PICS proforma contained in EN 301 144-2.

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 value is used?		1, 2	
1.3	Restart sent after re-establishment of the multiple frame operation?			
1.4	CTM subscription registration procedure executed at the beginning of each test?			
1.5	CTM location registration procedure executed at the beginning of each test?			
1.6	DECT/GSM location registration procedure executed at the beginning of each test?			

B.6.2.2 Configuration of IUT

Table B.2: CTM actions required to configure the IUT (Network)

Item	Action: What actions, if possible, have to be taken to configure the IUT ...	Supported? (Y/N)	Stimulus (action taken)
2.1	to be able to Initiate CTM Incoming call procedure on demand		
2.2	to be able to Initiate CTM identity request on demand		
2.3	to be able to Initiate CTM Key allocation on demand		
2.4	to be able to Initiate CTM location cancellation procedure on demand		
2.5	to be able to Initiate CTM location registration suggest procedure on demand		
2.6	to be able to Initiate CTM network initiation of ciphering procedure on demand		
2.7	to be able to initiate CTM Terminal authentication on demand		
2.8	to be able to generate a CTM network congestion error on demand		
2.9	to be able to generate a CTM network rejected error on demand		
2.10	to be able to generate a CTM unspecified error on demand		

Table B.3: "DECT access to GSM" actions required to configure the IUT (Network)

Item	Action: What actions, if possible, have to be taken to configure the IUT ...	Supported? (Y/N)	Stimulus (action taken)
3.1	to be able to Initiate GSM Incoming call procedure on demand		
3.2	to be able to Initiate GSM identity request on demand		
3.3	to be able to Initiate GSM identity assignment on demand		
3.4	to be able to Initiate GSM location cancellation procedure on demand		
3.5	to be able to Initiate GSM network initiation of ciphering procedure on demand		
3.6	to be able to initiate GSM Terminal authentication on demand		
3.7	to be able to generate a GSM network congestion error on demand		
3.8	to be able to generate a GSM network rejected error on demand		
3.9	to be able to generate a GSM unspecified error on demand		
3.10	to be able to generate a GSM inability to react upon detach invoke		

B.6.2.3 Timer values

Table B.4: Timer values

Item	Timer duration	Supported? (Y/N)	Allowed values	Value
4.1	Timer that is used to wait for the test operator to perform an implicit send action or to wait for a PTC to react (T_WAIT) (in s)		N/A	
4.2	Timer that is used to wait for the IUT to respond to a stimulus sent by the tester (T_AC) (in s)		N/A	
4.3	Timer that is used to control that the IUT does not respond to a stimulus sent by the tester (T_NOAC) (in s)		N/A	
4.4	Timer that is used to wait for RESTART messages (T_RESTART) (in s)		N/A	
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.7 Basic call PIXIT items

B.7.1 Parameter values - information element coding

Table B.5: ISDN parameters

Item	Information element: provide, if possible,...	Supported? (Y/N)	Value
U1.1	Number digits (IA5) for the Called party number information element to be sent to the IUT		
U1.2	Length of the Called party number information element to be sent to the IUT including the number digits		
U1.3	Octet 3 (Type of number, Numbering plan identification) of the Called party number information elements to be sent to the IUT		
U1.4	Preferred channel number (Integer)		Possible value: Basic access 1 2 Primary rate access 1 30.
U1.5	InvokeID value to be used in the component sent by the tester		
U1.6	Second InvokeID value to be used in the component sent by the tester in case of multiple procedure		
U1.7	Value of the address of the serving node		

Table B.6: CTM parameters

Item	Information element: provide, if possible,...	Supported? (Y/N)	Value
U2.1	Value of the fixed Identity		
U2.2	Value of the IPUI of the CTM terminal		
U2.3	Value of wrong IPUI not corresponding to the CTM terminal		
U2.4	value of the authentication type supported by IUT (used in a CTMNetworkAuthentication procedure, see encoding in EN 300 175-5, 7.7.7.7.32)		
U2.5	value of a Rand supported by IUT (used in a CTMNetworkAuthentication procedure and in a CTMKeyAllocation procedure, see encoding in EN 300 175-5, 7.7.7.7.32)		
U2.6	Value of cipher information used by IUT (this value is needed for the CTM Network initiated ciphering procedures)		
U2.7	Value of the CTM portable capabilities to be used by the tester to send a CTM component		
U2.8	Value of a CTM new location area used by the tester to send a CTM component		
U2.9	Value of the CTM basic service to be used by the tester to send a setup message with CTMOutgoingCallMMInfo invoke component		

Table B.7: "DECT access to GSM" parameters

Item	Information element: provide, if possible,...	Supported? (Y/N)	Value
U3.1	Value of a GSM location registration type sent by the tester in a GSM location registration invoke component		
U3.2	Value of a GSM location area sent by the tester in a GSM location registration invoke component		
U3.3	Value of a GSM cipher information sent by the tester in a GSM location registration invoke component		
U3.4	Value of a GSM portable capabilities sent by the tester in a GSM location registration invoke component		
U3.5	Value of a GSM portable identity sent by the tester in a GSM detach invoke component		
U3.6	Value of a GSM basic service sent by the tester in a GSM outgoing call MM information invoke component		
U3.7	Value of an unknown GSM portable identity sent by the tester in some GSM invoke components		
U3.8	Value of a GSM IMSI expected by the tester in a GSM identity request invoke component		
U3.9	Initial value of a GSM TMSI to be used		

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 [2].

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

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

The TTCN.GR representation of this ATS is contained in an Adobe Portable Document Format™ file (sps05121-6v113.PDF contained in archive en_30114406v010101p0.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 (sps05121-6v113.MP contained in archive en_30114406v010101p0.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): General structure of ATS

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

Test Suite Overview

Test Suite Structure

Test Case Index

Test Step Index

Default Index

Declarations Part

Simple Type Definitions

Structured Type Definitions

ASN.1 Type Definitions

Test Suite Operation Definitions

Test Suite Parameter Declarations

Test Case Selection Expression Definitions

Test Suite Constant Declarations

Test Case Variable Declarations

PCO Declarations

Co-ordination Point Declarations

Timer Declarations

Test Component Declarations

Test Components Configuration Declarations

TTCN ASP Type Definition

TTCN PDU Type Definition

TTCN CM Type Definition

Alias Definitions

Constraints Part

Structured Type Constraint Declarations

ASN.1 Type Constraint Declarations

TTCN ASP Constraint Declarations

TTCN PDU Constraint Declarations

TTCN CM Constraint Declarations

Dynamic Part

Test Case Dynamic Behaviour

Test Step Dynamic Behaviour

Default Dynamic Behaviour

Bibliography

The following material, though not specifically referenced in the body of the present document (or not publicly available), gives supporting information.

ETSI EN 301 144-2 (V1.1): " Integrated Services Digital Network (ISDN);Digital Subscriber Signalling System No. one (DSS1) protocol and Signalling System No.7 (SS7) protocols; Signalling application for the mobility management service on the alpha interface; Part 2: Protocol Implementation Conformance Statement (PICS) program specification".

ETSI EN 301 144-5 (V1.1): " Integrated Services Digital Network (ISDN);Digital Subscriber Signalling System No. one (DSS1) protocol and Signalling System No.7 (SS7) protocols; Signalling application for the mobility management service on the alpha interface; Part 5: Test Suite Structure and Test Purposes (TSS&TP) specification for the network".

ISO/IEC 8825-1 (1994): "Information technology - ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)" (See also ITU-T Recommendation X.690: 1994).

History

Document history		
V1.1.1	May 2000	Public Enquiry PE 20000929: 2000-05-31 to 2000-09-29
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V1.1.1	December 2000	Publication