

# ETSI EN 301 144-4 V1.1.4 (2000-05)

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*European Standard (Telecommunications series)*

**Integrated Services Digital Network (ISDN);  
Digital Subscriber Signalling System No. one (DSS1)  
and Signalling System No.7 protocols;  
Signalling application for the mobility management service  
on the alpha interface;  
Part 4: Abstract Test Suite (ATS) and partial Protocol  
Implementation eXtra Information for Testing (PIXIT) proforma  
specification for the user**

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**Reference**

DEN/SPS-05121-4

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**ETSI**

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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 4 of a multi-part EN covering the 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 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

The present document specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma for the user 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.

EN 301 144-3 [7] 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 Network side for implementations conforming to EN 301 144-1 [1].

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# 2 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- 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 301 144-1(V1.1): "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".
- [2] ETSI EN 300 196-1 (V1.2): "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".
- [3] ISO/IEC 9646: "Information technology - Open Systems Interconnection - Conformance Testing Methodology and Framework" (all parts).
- [4] 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)".
- [5] ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract test suite specification".
- [6] ETSI ETS 300 175-5: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 5: Network (NWK) layer".
- [7] ETSI EN 301 144-3: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) and Signalling System No.7 protocols; Signalling application for the mobility management service on the alpha interface; Part 3: Test Suite Structure and Test Purposes (TSS&TP) specification for the user".
- [8] ISO/IEC 9646-3 / AM2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".
- [9] ISO/IEC 8825-1: "Information technology - Encoding Rules for Abstract Syntax Notation One (ASN.1) - Part 1: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)" (See also ITU-T Recommendation X.690 : 1994.)".
- [10] ISO/IEC 9646-5: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 5: Requirements on test laboratories and clients for the conformance assessment process".

- [11] ISO/IEC 9646-4: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 4: Test realization".

---

## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in ISO/IEC 9646 [3] apply.

### 3.2 Abbreviations

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

ASP	Abstract Service Primitive
ATM	Abstract Test Method
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
TTCN	Tree and Tabular Combined Notation
UT	Upper Tester

---

## 4 Abstract Test Method (ATM)

The remote test method is applied for this user Abstract Test Suite (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 System Under Test (SUT). This is regarded as a preferred alternative to the use of the implicit send event.

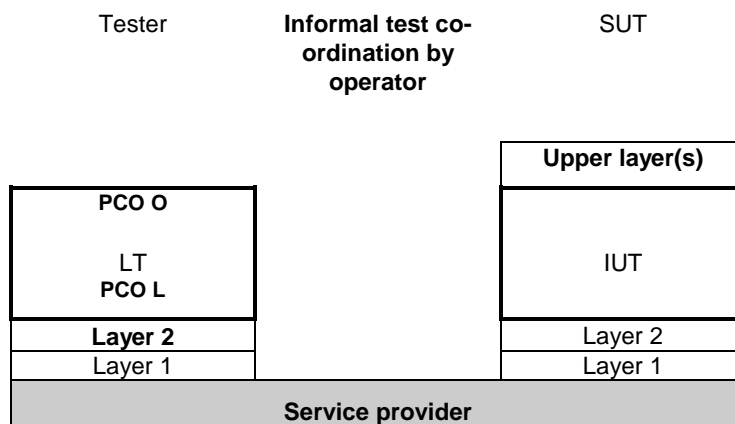


Figure 1: Remote test method with PCO O for test co-ordination

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## 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 [4].

### 6.2 Naming conventions

#### 6.2.1 Declarations part

Subclause 6.2.1 describes the naming conventions chosen for the elements of the ATS declarations part.

##### 6.2.1.1 Test suite type and structured type definitions

The test suite type and test suite 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 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 declarations

The point of control and observation identifiers are composed of three to six capital letters, beginning with an "L", as there are only LTs.

#### 6.2.1.9 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.

#### 6.2.1.10 ASP type definitions

The ASP types were defined in uppercase letters.

#### 6.2.1.11 PDU type definitions

The type of a Protocol Data Unit (PDU) is given in uppercase letters.

### 6.2.2 Constraints part

Subclause 6.2.2 describes the naming conventions chosen for the elements of the ATS constraints part.

#### 6.2.2.1 Structured type constraint

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

#### 6.2.2.2 PDU constraint

Constraint identifier begin with the type of the PDU written in uppercase. The remaining part of the name is separated from the beginning with an underscore and is written in lowercase with each word starting with an uppercase letter.

The prefix `_S` or `_R` shall be added at the end of the identifier to indicate if the constraint is sent or received by the tester.

## 6.2.3 Dynamic part

Subclause 6.2.3 describes the naming conventions chosen for the elements of the ATS dynamic part.

### 6.2.3.1 Test step identifier

The test step identifier is built with a string of lowercase letters leaded by a string of capital letter and joined by an underscore character. The first string indicates the main function of the test step; e.g. PRE for preamble, PST for postamble and STP for a normal step. The second string indicates the meaning of the step.

EXAMPLES:   PRE\_Name;  
              PST\_Name;  
              STP\_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

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 [8]/AM2 and in TR 101 101 [4] 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 [8]/AM2 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 [9], the second one is the encoding that correspond to the specification, i.e. the ASN.1 data types are a representation of structures contained within the specification. 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 information element specified using tabular TTCN. This encoding variation is the default encoding rule for this ATS. This means that all ASN.1 constraint tables are encoded using this second (non-BER) encoding unless stated otherwise. BER encoding shall not 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 and in the encoding variation field.

Note that within BER, there are a number of variations for the encoding of lengths of fields. According to EN 300 196-1 [2], 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 [2] 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.

---

## 7 ATS to TP mapping

The identifiers used for the TPs (see EN 301 144-3 [7] ) are reused as test case names. Thus there is a straightforward one-to-one mapping.

---

## 8 PCTR conformance

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

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 conformance 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 [11], 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 [10], to further augment the augmented partial PIXIT proforma to produce a PIXIT proforma conformant with this partial PIXIT proforma specification.

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

---

## 10 ATS conformance

The test realizer, producing MOT and executable test suite for this ATS specification, shall comply with the requirements of ISO/IEC 9646-4 [11]. 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 at the ATS in annex C. All sequences of test events comprising an abstract test case shall be capable of being realized in the executable test case. Any further checking which the test system might be capable of performing is outside the scope of this ATS specification and shall not contribute to the verdict assignment for each test case.

Test laboratories running conformance test services using this ATS shall comply with ISO/IEC 9646-5 [10].

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

## Annex A (normative): 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 301 144-4
Abstract Test Method (ATM):	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 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 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
CTM_RD_SR_V_01				
CTM_RD_SR_V_02				
CTM_RD_SR_V_03				
CTM_RD_SR_I_01				
CTM_RD_SR_I_02				
CTM_RD_SR_I_03				
CTM_RD_SR_I_04				
CTM_RD_SR_I_0501				
CTM_RD_SR_I_0502				
CTM_RD_SR_I_0503				
CTM_RD_SR_I_0504				
CTM_RD_SR_I_0505				
CTM_RD_SR_I_0506				
CTM_RD_SR_I_0507				
CTM_RD_SR_I_0508				
CTM_RD_SR_I_0509				
CTM_RD_SR_I_0510				
CTM_RD_SR_I_0511				
CTM_RD_SR_I_0512				
CTM_RD_SR_I_0513				
CTM_RD_SR_I_0514				
CTM_RD_SR_I_0515				
CTM_RD_SR_I_0516				
CTM_RD_SR_I_0517				
CTM_RD_SR_I_0518				
CTM_RD_SR_I_0519				
CTM_RD_SR_I_0520				
CTM_RD_SR_I_0521				
CTM_RD_SR_I_0522				
CTM_RD_SR_I_0523				
CTM_RD_SR_I_0524				
CTM_RD_SD_V_01				
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_07				
CTM_RD_SD_I_08				
CTM_AD_LR_V_01				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
CTM_AD_LR_V_02				
CTM_AD_LR_I_01				
CTM_AD_LR_I_02				
CTM_AD_LR_I_03				
CTM_AD_LR_I_04				
CTM_AD_LR_I_0501				
CTM_AD_LR_I_0502				
CTM_AD_LR_I_0503				
CTM_AD_LR_I_0504				
CTM_AD_LR_I_0505				
CTM_AD_LR_I_0506				
CTM_AD_LR_I_0507				
CTM_AD_LR_I_0508				
CTM_AD_LR_I_0509				
CTM_AD_LR_I_0510				
CTM_AD_LR_I_0511				
CTM_AD_LR_I_0512				
CTM_AD_LR_I_0513				
CTM_AD_LR_I_0514				
CTM_AD_LR_I_0515				
CTM_AD_LR_I_0516				
CTM_AD_LR_I_0517				
CTM_AD_LR_I_0518				
CTM_AD_LR_I_0519				
CTM_AD_LR_I_0520				
CTM_AD_LR_I_0521				
CTM_AD_LR_I_0522				
CTM_AD_LR_I_0523				
CTM_AD_LR_I_0524				
CTM_AD_LC_V_01				
CTM_AD_LC_I_01				
CTM_AD_LC_I_02				
CTM_AD_LC_I_03				
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				
CTM_IO_LRS_I_05				
CTM_IO_TA_V_01				
CTM_IO_TA_I_01				
CTM_IO_TA_I_02				
CTM_IO_NA_I_0422				
CTM_IO_NA_I_0423				
CTM_IO_NA_I_0424				
CTM_IO_NIC_V_01				
CTM_IO_NIC_I_01				
CTM_IO_NIC_I_02				
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_PIC_V_01				
CTM_IO_PIC_V_02				
CTM_IO_PIC_I_01				
CTM_IO_PIC_I_02				
CTM_IO_PIC_I_03				
CTM_IO_PIC_I_04				
CTM_IO_PIC_I_0501				
CTM_IO_PIC_I_0502				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
CTM_IO_PIC_I_0503				
CTM_IO_PIC_I_0504				
CTM_IO_PIC_I_0505				
CTM_IO_PIC_I_0506				
CTM_IO_PIC_I_0507				
CTM_IO_PIC_I_0508				
CTM_IO_PIC_I_0509				
CTM_IO_PIC_I_0510				
CTM_IO_PIC_I_0511				
CTM_IO_PIC_I_0512				
CTM_IO_PIC_I_0513				
CTM_IO_PIC_I_0514				
CTM_IO_PIC_I_0515				
CTM_IO_PIC_I_0516				
CTM_IO_PIC_I_0517				
CTM_IO_PIC_I_0518				
CTM_IO_PIC_I_0519				
CTM_IO_PIC_I_0520				
CTM_IO_PIC_I_0521				
CTM_IO_PIC_I_0522				
CTM_IO_PIC_I_0523				
CTM_IO_PIC_I_0524				
CTM_IO_KA_V_01				
CTM_IO_KA_V_02				
CTM_IO_KA_I_01				
CTM_IO_KA_I_02				
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_IR_V_01				
CTM_IO_IR_I_01				
CTM_IO_IR_I_02				
CTM_IO_IR_I_03				
CTM_IO_IR_I_04				
CTM_IO_IR_I_05				
CTM_IO_IR_I_06				
CTM_IO_IR_I_07				
CTM_IO_IR_I_08				
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_0501				
CTM_OC_I_0502				
CTM_OC_I_0503				
CTM_OC_I_0504				
CTM_OC_I_0505				
CTM_OC_I_0506				
CTM_OC_I_0507				
CTM_OC_I_0508				
CTM_OC_I_0509				
CTM_OC_I_0510				
CTM_OC_I_0511				
CTM_OC_I_0512				
CTM_OC_I_0513				



ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
CTM_OC_I_0514				
CTM_OC_I_0515				
CTM_OC_I_0516				
CTM_OC_I_0517				
CTM_OC_I_0518				
CTM_OC_I_0519				
CTM_OC_I_0520				
CTM_OC_I_0521				
CTM_OC_I_0522				
CTM_OC_I_0523				
CTM_OC_I_0524				
CTM_IC_V_01				
CTM_IC_I_01				
CTM_IC_I_02				
CTM_IC_I_03				
CTM_IC_I_04				
CTM_IC_I_05				
DG_AD_LR_V_01				
DG_AD_LR_V_02				
DG_AD_LR_I_01				
DG_AD_LR_I_02				
DG_AD_LR_I_03				
DG_AD_LR_I_04				
DG_AD_LR_I_0501				
DG_AD_LR_I_0502				
DG_AD_LR_I_0503				
DG_AD_LR_I_0504				
DG_AD_LR_I_0505				
DG_AD_LR_I_0506				
DG_AD_LR_I_0507				
DG_AD_LR_I_0508				
DG_AD_LR_I_0509				
DG_AD_LR_I_0510				
DG_AD_LR_I_0511				
DG_AD_LR_I_0512				
DG_AD_LR_I_0513				
DG_AD_LR_I_0514				
DG_AD_LR_I_0515				
DG_AD_LR_I_0516				
DG_AD_LR_I_0517				
DG_AD_LR_I_0518				
DG_AD_LR_I_0519				
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				
DG_IO_TA_I_01				
DG_IO_TA_I_02				
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_NIC_V_01				
DG_IO_NIC_I_01				
DG_IO_NIC_I_02				
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				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
DG_IO_NIC_I_08				
DG_IO_NIC_I_09				
DG_IO_TIA_V_01				
DG_IO_TIA_V_02				
DG_IO_TIA_I_01				
DG_IO_TIA_I_02				
DG_IO_TIA_I_03				
DG_IO_TIA_I_04				
DG_IO_TIA_I_05				
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_EMB_V_01				
DG_EMB_V_02				
DG_EMB_V_03				
DG_EMB_V_04				
DG_OC_V_01				
DG_OC_I_01				
DG_OC_I_0201				
DG_OC_I_0202				
DG_OC_I_0203				
DG_OC_I_0204				
DG_OC_I_0205				
DG_OC_I_0206				
DG_OC_I_0207				
DG_OC_I_0208				
DG_OC_I_0209				
DG_OC_I_0210				
DG_OC_I_0211				
DG_OC_I_0212				
DG_OC_I_0213				
DG_OC_I_0214				
DG_OC_I_0215				
DG_OC_I_0216				
DG_OC_I_0217				
DG_OC_I_0218				
DG_OC_I_0219				
DG_OC_I_03				
DG_OC_I_04				
DG_OC_I_05				
DG_IC_V_01				
DG_IC_I_01				
DG_IC_I_02				
DG_IC_I_03				
DG_IC_I_04				
DG_IC_I_05				
DG_IC_I_06				



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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 PIXIT proforma in this annex so that it can be used for its intended purposes and may further publish the completed PIXIT.

---

### B.1 Identification summary

PIXIT number:

.....

Test laboratory name:

.....

Date of issue:

.....

Issued to:

.....

---

### B.2 Abstract test suite summary

Protocol specification: EN 301 144-1

ATS specification: EN 301 144-4

Abstract test method (ATM): 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:

.....

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## B.4 Client (of the test laboratory)

Client identification:

.....

Client test manager:

.....

Client contact:

.....

Test facilities required:

.....

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## 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	DECT/GSM location registration procedure executed at the beginning of each test?			
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?			

## B.6.2.2 Configuration of IUT

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

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 subscription registration on demand		
2.2	to be able to Initiate CTM location registration on demand		
2.3	to be able to Initiate CTM network authentication on demand		
2.4	to be able to Initiate CTM ciphering procedure on demand		
2.5	to be able to Initiate DECT/GSM location registration on demand		
2.6	to be able to Initiate DECT/GSM detach on demand		
2.7	Possibility to generate a congestion error		
2.8	Possibility to generate a local timer expiry error		
2.9	Possibility to generate a paging failure on the air interface		
2.10	Possibility to generate a radio connection failure on the air interface		
2.11	Possibility to generate a priority violation error		
2.12	Possibility to generate a terminal rejected error		
2.13	Possibility to generate an incompatible ciphering state error		

## B.6.2.3 Timer values

**Table B.3: Timer values**

Item	Timer duration	Supported? (Y/N)	Allowed values	Value
3.1	Timer that is used to wait for the test operator to perform an implicit send (T_WAIT) (in s)		N/A	
3.2	Timer that is used to wait for the IUT to respond to a stimulus sent by the tester (T_AC) (in s)		N/A	
3.3	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	
3.4	Timer that is used to wait for RESTART messages (T_RESTART) (in s). Timer used in the initialization preamble only.		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 codings

Table B.4: Codings of information elements

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	Shall be TRUE if the IUT, correctly accepts a RELEASE_COMPLETE message containing a facility IE for outgoing call		
U1.7	Value of the address of the serving node.		
U2	CTM parameters		
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 CTMKeyAllocation procedure, see encoding in ETS 300 175-5, subclause 7.7.2)		
U2.5	value of the authentication type supported by IUT (used in a CTMTerminalAuthentication procedure, see encoding in ETS 300 175-5, subclause 7.7.4)		
U2.6	value of a Rand supported by IUT (used in a CTMTerminalAuthentication procedure and in a CTMKeyAllocation procedure, see encoding in ETS 300 175-5, subclause 7.7.7.32)		
U2.7	value of Rs supported by IUT (used in a CTMTerminalAuthentication procedure and in a CTMKeyAllocation procedure, see encoding in ETS 300 175-5, subclause 7.7.36)		
U2.8	value of Res supported by IUT (used in a CTMNetworkAuthentication procedure, see encoding in ETS 300 175-5, subclause 7.7.35)		
U2.9	Value of cipher information used by IUT (this value is needed for the CTM Network initiated ciphering procedures)		
U2.10	Value of cipher key used by IUT (this value is needed for the CTM Network initiated ciphering procedures)		
U2.11	Value of signal used by the network in the CTMIncomingCallMMInfo invoke component to initiate a CTM incoming call.		
U2.12	Value of the CTM service class (used in the CTMAccessRightRequest return result).		
U3	"DECT access to GSM" parameters		
U3.1	GSM Cipher Key to be used by the tester to send a DectToGsm component		



Item	Information element: provide, if possible,...	Supported? (Y/N)	Value
U3.2	GSM Cipher Information to be used by the tester to send a DectToGsm component		
U3.3	GSM Location area identity to be used by the tester to send a DectToGsm component		
U3.4	GSM Rand to be used by the tester to send a DectToGsm component		
U3.5	GSM New TMSI to be used by the tester to send a DectToGsm component		
U3.6	GSM basic service to be used by the tester to send a DectToGsm component		
U3.7	GSM signal to be used by the tester to send a DectToGsm component		
U3.8	GSM portable identity to be used by the tester to send a DectToGsm component		
U3.9	GSM portable identity to be used by the tester to send a DectToGsm component indicating a not known portable identity.		

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

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

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 (see also annex D).

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

The TTCN.GR representation of this ATS is contained in an Adobe Portable Document Format™ file (td073b.pdf contained in archive en\_30114404v010104p0.zip) which accompanies the present document.

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

The TTCN.MP representation corresponding to this ATS is contained in an ASCII file (td072b.mp contained in archive en\_30114404v010104p0.zip) which accompanies the present document.

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## 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

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## History

<b>Document history</b>		
V1.1.3	July 1999	Public Enquiry PE 9952: 1999-07-28 to 1999-11-26
V1.1.4	March 2000	Vote V 20000505: 2000-03-06 to 2000-05-05
V1.1.4	May 2000	Publication