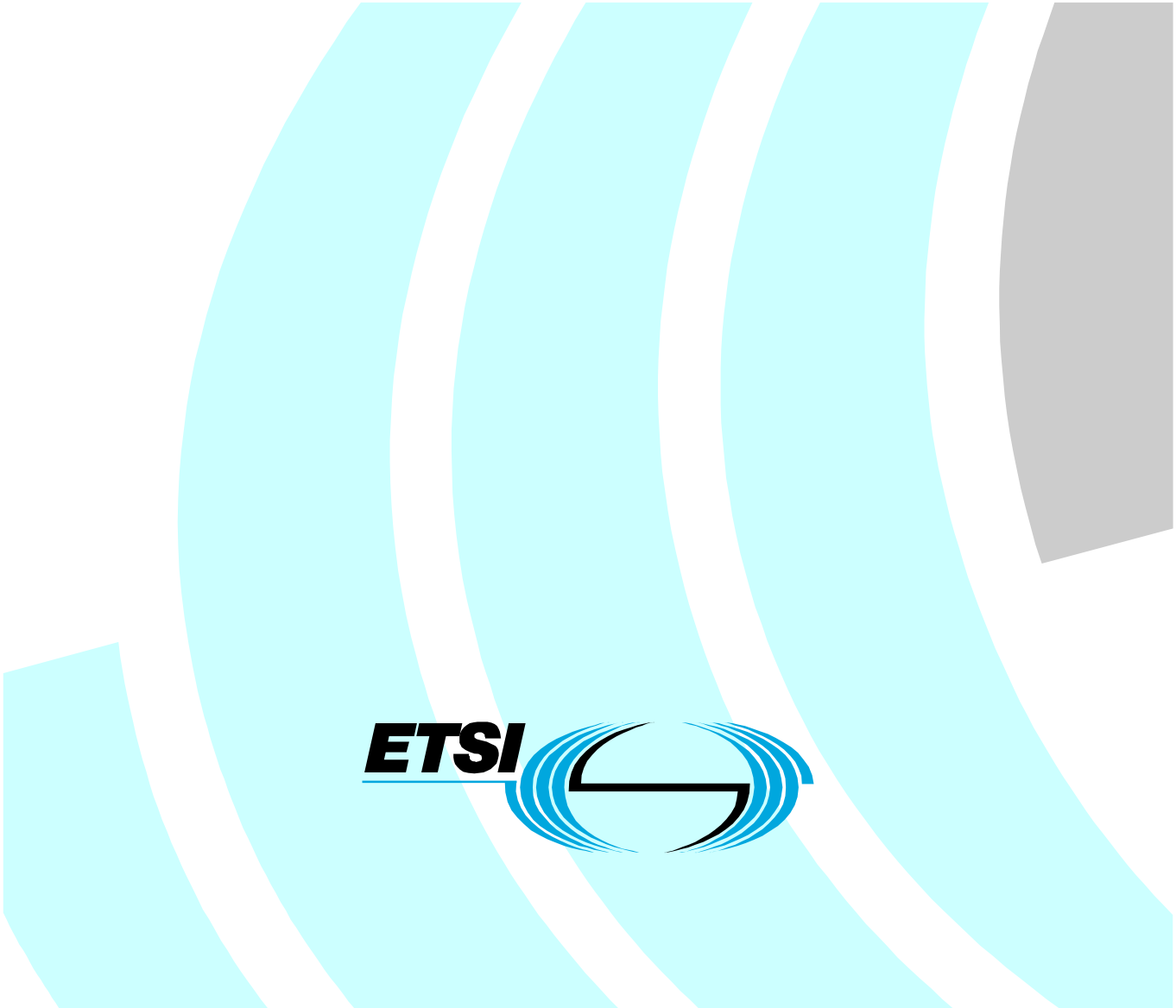
ETSI ES 202 912-8 V1.1.1 (2003-02)

ETSI Standard

Access and Terminals (AT);
Short Message Service (SMS) for PSTN/ISDN;
Test Suites for SMS User Based Solution;
Part 8: Abstract Test Suite (ATS)
user side for functional tests Protocol 1



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Contents

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Foreword

This ETSI Standard (ES) has been produced by ETSI Technical Committee Access and Terminals (AT).

The present document is part 8 of a multi-part deliverable. Full details of the entire series can be found in part 1 [5].

Introduction

The present document is part 8 of a multi-part conformance test specification for SM-TE. The specification contains a TTCN design frame work and the detailed test specifications in TTCN for SM-TE at the user/network interface.

The reader of the present document should be aware of the fact that much of the ATS information is contained in ES 202 912-7 [7] and is therefore only referred to here, indicating the relevant clauses of the present document.

1 Scope

The present document specifies the functional tests in TTCN for the Transfer Layer in a Terminal Equipment implementing the Short Message Service (SMS) for PSTN/ISDN, UBS Protocol 1, according to ES 201 912 [1] at the user/network interface.

Basic ISDN or PSTN call procedures apply in order to establish a circuit-switched band connection between such terminal equipment and an SM-SC. Tests for these procedures are outside the scope of the present document. UBS1 terminals send and receive TL messages in the voice-band connection using the FSK signalling as defined in EN 300 659-2 [2] and ES 200 778-2 [3] and the DLL services defined in clause 5 and annex A of ES 201 912 [1].

Tests for the Physical Layer of the FSK signalling are outside the scope of the present document. Tests for the DLL of UBS1 terminals have been defined in ES 202 912-3 [6].

Terminal Equipment implementing the Short Message Service (SMS) for PSTN/ISDN according to UBS Protocol 1 are required to implement the Transfer Layer according to TS 100 901 [4]. Transfer Layer messages used in this test specification are structured according to the present document, but not all messages defined in TS 100 901 [4] are used (see clause 6.2).

As the term "functional tests" indicates, the present document is **no conformance test specification**: a comprehensive coverage of functions and TL protocol features is not attempted. Only the main functions and TL procedures related to outgoing SM-calls (from the SM-TE) and incoming SM-calls (to the SM-TE) are tested (see also clause 6.2).

The Abstract Test Suite designed in the present document is based on the test cases specified in tabular form combined with prose in ES 202 912-7 [7]. The Remote Single Layer Embedded Test Method (see ISO/IEC 9646-2 [9]) is applied for the UBS Protocol 1 functional tests.

The following information can be found in this part, directly or by reference (mostly to ES 202 912-7 [7]):

- The overall test suite structure.
- The testing architecture.
- The test methods and PCO definitions.
- The test configuration.
- TTCN styles and conventions.
- The design principles, assumptions, and used interfaces to the TTCN tester (e.g. ASPs).
- Information about the services assumed from the Data Link Layer and the Physical Layer.
- Interrelationships and dependencies between timeout values.
- The partial PIXIT proforma.
- The TTCN.MP and TTCN.GR forms for the mentioned protocols tests.

While ISO/IEC 9646-1 [8] and ISO/IEC 9646-2 [9] have been used as the basis for the test specification methodology, the ATS contained in the present document has been specified using TTCN-2++ (TR 101 666 [10]).

Two forms of the ATS are provided (see annex A):

- The TTCN Graphical form (TTCN.GR).
- The TTCN Machine Processable form (TTCN.MP).

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.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

[1] ETSI ES 201 912 (V1.1.1): "Access and Terminals (AT); Short Message Service (SMS) for PSTN/ISDN; Short Message Communication between a fixed network Short Message Terminal Equipment and a Short Message Service Centre".

[2] ETSI EN 300 659-2 (V1.3.1): "Access and Terminals (AT); Analogue access to the Public Switched Telephone Network (PSTN); Subscriber line protocol over the local loop for display (and related) services; Part 2: Off-hook data transmission".

[3] ETSI ES 200 778-2 (V1.2.2): "Access and Terminals (AT); Analogue access to the Public Switched Telephone Network (PSTN); Protocol over the local loop for display and related services; Terminal equipment requirements; Part 2: Off-hook data transmission".

[4] ETSI TS 100 901 (V7.4.0): "Digital cellular telecommunications system (Phase 2+); Technical realization of the Short Message Service (SMS) Point-to-Point (PP) (3GPP TS 03.40 version 7.5.0 Release 1998)".

[5] ETSI ES 202 912-1(V1.1.1): "Access and Terminals (AT); Short Message Service (SMS) for PSTN/ISDN; Test Suites for SMS User Based Solution; Part 1: Protocol Implementation Conformance Statement (PICS) proforma specification user side for Data Link Layer (DLL) Protocol 1".

[6] ETSI ES 202 912-3 (V1.1.1): "Access and Terminals (AT); Short Message Service (SMS) for PSTN/ISDN; Test Suites for SMS User Based Solution; Part 3: Abstract Test Suite (ATS) user side for Data Link Layer (DLL) Protocol 1".

[7] ETSI ES 202 912-7 (V1.1.1): "Access and Terminals (AT); Short Message Service (SMS) for PSTN/ISDN; Test Suites for SMS User Based Solution; Part 7: Test Suite Structure and Test Purposes (TSS&TP) user side for Functional Tests Protocol 1".

[8] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

[9] ISO/IEC 9646-2: "Information technology - Open systems interconnection - Conformance testing methodology and framework - Part 2: Abstract test suite specification".

[10] ETSI TR 101 666 (V1.0.0): "Information technology Open Systems Interconnection Conformance testing methodology and framework; The Tree and Tabular Combined Notation (TTCN) (Ed. 2++)".

[11] ISO/IEC 9646-3: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN) ".

[12] ETSI TS 100 900: "Digital cellular telecommunications system (Phase 2+) (GSM); Alphabets and language-specific information (GSM 03.38 version 7.2.0 Release 1998)".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ES 202 912-7 [7] apply.

3.2 Abbreviations

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

ASP	Abstract Service Primitive
ATS	Abstract Test Suite
CLI	Calling Line Identification (information)
DLL	Data Link Layer
DMI	Deliver Mode Identifier
FSK	Frequency Shift Keying
GSM	Global System for Mobile Communication
PICS	Implementation Conformance Statement
ISDN	Integrated Services Digital Network
ISO	International Standard Organization
IUT	Implementation Under Test
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
PSTN	Public Switched Telephone Network
SM	Short Message(s)
SME	Short Message Entity
SMS	Short Message Service
SM-SC	Short Message Service Centre
SM-TE	Short Message Terminal Equipment
SUT	System Under Test
TL	Transfer Layer
TP	Test Purpose
TS	Test Suite
TSS	Test Suite Structure
TSS&TP	Test Suite Structure and Test Purposes
TTCN	Tree and Tabular Combined Notation
UBS	User Based Solution
VB	Voice-band

4 Test method and testing architecture

4.1 Test method

The test method is the **Remote Single Layer Embedded** test method (see ISO/IEC 9646-1 [8] for definitions of test methods).

The protocol layer under test is the Transfer Layer (TL), i.e. Layer 3 using the OSI terminology. Basic information about the physical transfer of TL message units is given in clause 6.5.

4.2 Test configuration

Figure 1 in ES 202 912-7 [7] gives an overview of the reference architecture used for the UBS Protocol 1 operation. Figure 2 in ES 202 912-7 [7] shows the configuration used for testing. Details about the entities being part of the test configuration can be found in clause 4 of ES 202 912-7 [7].

5 Basic considerations on the TTCN development

A number of requirements are identified for the development and production of the TTCN test specifications for ES 201 912 [1]:

1) A unique testing architecture and test method for testing all protocol layers and protocol variants.

2) Uniform TTCN style and naming conventions, to improve TTCN readability.

3) Using TTCN-2++ (TR 101 666 [10]). This TTCN specification is feasible, implementable and compilable.

4) Test cases shall be designed in a way for easily adaptable, upwards compatible with the evolution of the specifications and the future Releases.

5) The test declarations, data structures and data values shall be largely reusable.

6) Minimizing the requirements of intelligence on the simulators and transfer capabilities of the lower testers, giving enough design freedom to the test equipment manufacturers.

7) Considering that the TS Structure and Test Purposes in ES 202 912-7 [7] have been designed and formulated in way that supports an easy and direct transition to TTCN: follow the constructions and namings in a tight and direct way.

In order to fulfil these requirements and to ensure the investment of the test equipment manufacturers having a stable testing architecture for a relatively long period, a unique testing architecture and test method are applied to the "SMS over fixed network" protocol tests.

6 ATS information

6.1 Naming conventions

Table 1 gives information about the naming conventions used for the main TTCN objects of the ATS.

Table 1: Naming conventions

TTCN object class	Name prefix in ATS	Comment
Test Case	-	The test case identifiers are the same as the related TP identifiers in ES 202 912-7 [7]. More information about the TP identifier name composites and naming conventions can be found in clause 5.5, ES 202 912-7 [7].
Test Step	PRE_ (preambles), POST_ (postambles)	The test step identifiers are the same as the related step identifiers in ES 202 912-7 [7].
Local Tree	LTR_	
Test group	-	The test group identifiers of ES 202 912-7 [7] have been used. See the table in clause 6.2, ES 202 912-7 [7].
Test Suite Parameter	TSPX_ (PIXIT) TSPC_ (PICS)	The "Test Parameters" in clause 6.6, ES 202 912-7 [7] have been defined as Test Suite Parameters, using the same name. Test Suite Parameters with prefix "TSPC_" appear in Selection expressions and Qualifiers only.
ASP	ASP_	The ASPs defined in clause 6.4 ES 202 912-7 [7] are also defined in the ATS. However the prefix "ASP_" has been added to the ASP names in the ATS.
PDU	PDU_	The message type names defined in TS 100 901 [4] have been used with the following modifications: - the prefix "PDU_" has been added; - hyphens ("-") have been replaced by underscores ("_"). EXAMPLE: "SMS-SUBMIT" is transformed to "PDU_SMS_SUBMIT" in the ATS.

TTCN object class	Name prefix in ATS	Comment
Timer	TIMER_	
Test Suite Constant	TSC_	
Test Case Variable	TCV_	
Test Suite Operation	TSO_	
Selection Expression	Sel_	
Constraint	C_	For PDU constraints the prefix "PDU_" in the related PDU type identifier is replaced by "C_". A postfix "_Sn" is added for constraints to be transmitted, where "n" is an appropriate digit (starting with "1"). Similarly a postfix "_Rn" is added for constraints to be received. For ASP constraints the prefix "ASP_" in the ASP type identifier is replaced by "C_". The rest of the name is treated as for PDUs.
Alias		Aliases have been defined for ASPs carrying PDUs. The Alias identifier is derived from the PDU name, with a postfix "r" for PDUs to be received and a postfix "s" for PDUs to be sent (respectively "sa" for sending a positive acknowledgement and "sn" for sending a negative acknowledgement.
Formal Parameters		The names of Formal Parameters end with a "V" (constraints) or "P" (test steps). Formal Parameter names associated with constraints are composed of the name of the Structured Type element, PDU field or ASP parameter to which the Formal Parameter is passed as a value, followed by postfix "V".

6.2 Restrictions and requirements not being tested

See clause 5.3 in ES 202 912-7 [7].

6.3 Grouping of test purposes

See clauses 5.4 and 6.2 in ES 202 912-7 [7].

6.4 Abstract Service Primitives

See clause 6.3 in ES 202 912-7 [7]. Note that the prefix "ASP_" has been added in the ATS.

6.5 Information on physical layer and data link layer information transfer and on TL message encoding

There is no explicit signalling used in the ATS for establishing the VB connection between the SM-TE and the tester. There is also no explicit reference made to whether the VB connection is over PSTN or ISDN, since the SMS transfer capabilities and procedures are independent of the network type, once the VB connection is established. The VB connection is established using appropriate ASPs, and is considered to be a matter of the capabilities of the SM-TE to be tested and the implementation of the test system implementing this ATS, to perform suitable signalling to establish the VB connection.

NOTE: In some cases, where the test is related to the SM-TE being in the "Busy" condition, non-SM calls (phone calls) have to be established bring the SM-TE into this state.

The Physical Layer is treated according to clause 5.3.1 of ES 201 912 [1], i.e. the signalling between the SM-TE and the tester is carried out in the VB connection, using a bi-directional, half duplex 1 200 Baud FSK modulation as defined in EN 300 659-2 [2] and ES 200 778-2 [3].

The TL messages are transferred via DLL frames as specified in table 1 of clause 5.3.2.1 of ES 201 912 [1] (see also the definition of ASPs at PCO FS in ES 202 912-7 [7] and in the TTCN ATS):

TL message DLL message ASP

SMS-DELIVER DLL_SMS_DATA ASP_TRANSFER_DATA_req

SMS-DELIVER-REPORT (no Failure) DLL_SMS_ACK ASP_TRANSFER_DELIV_REP_ind

SMS-DELIVER-REPORT (Failure) DLL_SMS_NACK ASP_TRANSFER_DELIV_REP_ind

SMS-SUBMIT DLL_SMS_DATA ASP_TRANSFER_SUBMIT_ind

SMS-SUBMIT-REPORT (no Failure) DLL_SMS_ACK ASP_TRANSFER_ACK_req

SMS-SUBMIT-REPORT (Failure) DLL_SMS_NACK ASP_TRANSFER_NACK_req

SMS-STATUS-REPORT DLL_SMS_DATA ASP_TRANSFER_DATA_req

The TL message structure is as depicted in clause 9.2.2 and 9.2.3 of TS 100 901 [4]. Bit numbering is from 0 (transmitted first) to 7 (transmitted last).

When transforming bit fields located in the same octet into a sequence of TTCN Structured Type- or PDU-fields, the fields associated to the least significant bits appear first, as shown in the following example:

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Use of B0..B5		DCS indication					

Figure 1: Bit field structure of the "TP-Data-Coding-Scheme" parameter

The "DCS indication" (6 least significant bits) appears as the **first** element in the Structured Type **TYPE_PAR_DCS** associated with the "TP-Data-Coding-Scheme" parameter.

6.6 Use of timers, restrictions and interdependencies of timeout values

No tests are specified related to timeout values of protocol timers implemented in the SM-TE.

The following operational timers are defined: TIMER_TAC, TIMER_TNOAC, TIMER_TWAIT, TIMER_TVERIFY, TIMER_TMEM_FULL, TIMER_TDELAY, TIMER_TACCEPT and TIMER_TCALLBACK. For these operational timers no lower and upper limits are defined.

TIMER_TAC is used to ascertain a response from the SM-TE, which is automatically generated according to the TL protocol, i.e. which is expected to occur without manual intervention. The timeout value of TIMER_TAC, TS Parameter TSPX_TIMEOUT_TAC, must be long enough to respect all delays being allowed by the protocol. Note however, that a too big timeout value may increase the test execution time unnecessarily. A timeout of TIMER_TAC is typically detected in the default and leads to the end of the test with an FAIL verdict.

The same requirements hold for TIMER_TNOAC. TIMER_TNOAC is used to verify that the IUT does not generate a response on some tester stimulus or does not initiate any automatic action for some time. The timeout of this timer is normally expected inside the test behaviour.

TIMER_TWAIT is a timer with units of seconds. It is started when the operator is requested to perform some operation at the SM-TE which is necessary to bring the SM-TE in a testing situation, e.g. to initiate an outgoing call. The time should be long enough such that the operator can perform the requested operations within this time, so that no timeout occurs.

TIMER_TMEM_FULL is used similarly as TIMER_TWAIT to bring the IUT in the "Memory full" condition.

A timeout of TIMER_TWAIT or TIMER_TMEM_FULL leads to the end of the test with an INCONCLUSIVE verdict.

TIMER_TVERIFY is started when the operator has to perform some check with the IUT, e.g. verifying that an incoming SM has been stored. The operator should indicate a positive or negative check result before the timer expires. Expiration of this timer is treated like a negative check result.

TIMER_TDELAY is used by the tester to delay a second action after having performed a first action (typically: initiate a second call after the first call). The timeout of this timer is expected inside the test behaviour and does not affect a verdict.

TIMER_TACCEPT is used to verify that the SM-TE does not show any signalling response on an incoming call, i.e. when this timer expires without having received any signalling from the SM-TE, non-acceptance of the call is assumed.

TIMER_TCALLBACK is used to check in specific situations whether the SM-TE performs an automatic callback or not. Timeout of this timer in a test where callback is expected is understood as "no callback occurs" and leads to a FAIL verdict.

The timeout value TSPX_CALL_ACCEPT_TIME (TIMER_TACCEPT) must be smaller than TSPX_CALL_BACK_TIME (TIMER_TCALLBACK).

6.7 Treatment of the "Memory Full" state in the submission phase

In case the SM-TE does not allow the submission of an SM because the SM-TE has entered the "Memory Full" state and this state is not required/expected in the current test, the test should be run again, after having made the necessary operations to free the memory.

Annex A (normative): Abstract Test Suite (ATS)

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

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.

A.1 Versions of specifications

The table A.1 shows the version of the test specifications which the delivered ATSs are referred to.

Table A.1: Versions of the related specifications

Specification type	Document ID	Version
Protocol specification	ES 201 912	V1.1.1
PICS	-	
PIXIT	ES 202 912-8	V1.1.1

A.2 ATS

A.2.1 The TTCN Graphical form (TTCN.GR)

The TTCN.GR representation of this ATS is contained in an Adobe Portable Document Format™ file (SMSFT1.PDF contained in archive es_20291208v010101p0.ZIP) which accompanies the present document.

A.2.2 The TTCN Machine Processable form (TTCN.MP)

The TTCN.MP representation corresponding to this ATS is contained in an ASCII file (SMSFT1.MP contained in archive es_20291208v010101p0.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 B (normative): Partial PIXIT proforma

B.1 Introduction

This partial PIXIT proforma contained in the present document is provided for completion, when the related Abstract Test Suite is to be used against the Implementation Under Test (IUT).

Text in *italics* is comments for guidance for the production of a PIXIT, and is not to be included in the actual PIXIT.

The completed partial PIXIT will normally be used in conjunction with the completed PICS, as it adds precision to the information provided by the PICS.

B.2 PIXIT items

Table B.1 lists the PIXIT items associated with the ATS. Each PIXIT item corresponds to a TS Parameter of the ATS. Default values are not provided.

Table B.1: PIXIT items

Item	Parameter Name	Description	Type	Value
1.1	TSPC_EXT_CHAR_SET	TRUE if the SM-TE supports the extended character set table (see TS 100 900). Otherwise FALSE.	Boolean	
1.2	TSPC_INFORM_USER_NEG	TRUE if the SM-TE supports the indication of a negative submission result (following the reception of an SMS-SUBMIT-REPORT message with failure cause) to the user. Otherwise FALSE.	Boolean	
1.3	TSPC_INFORM_USER_POS	TRUE if the SM-TE supports the indication of a positive submission result (following the reception of an SMS-SUBMIT-REPORT message without failure cause) to the user. Otherwise FALSE.	Boolean	
1.4	TSPC_REC_CLI_BUSY	TRUE if the SM-TE supports the off-hook CLI reception (see table 3, clause 5.5.6, ES 201 912). Otherwise FALSE.	Boolean	
1.5	TSPC_REC_MORE_SMS	TRUE if the SM-TE can receive more than one SM within one VB connection. Otherwise FALSE.	Boolean	
1.6	TSPC_SM_REPLACE	TRUE if the SM-TE supports the SM replace feature (see clause 9.2.3.9 of TS 100 901). Otherwise FALSE.	Boolean	
1.7	TSPC_STATUS_REP_REQ	TRUE if the SM-TE supports the status report request feature (see clauses 3.2.9 and 9.2.3.5 of TS 100 901). Otherwise FALSE.	Boolean	
1.8	TSPC_VALIDITY_PERIOD	TRUE if the SM-TE can send the "Validity-Period" parameter in the SMS-SUBMIT message (in any format). See clauses 9.2.3.3 and 9.2.3.12 of TS 100 901. Otherwise FALSE.	Boolean	

Item	Parameter Name	Description	Type	Value
2.1	TSPX_NUM_PHONE_CALLS	Number of phone calls initiated by the SM-TE to bring it into the "Busy" state.	INTEGER	
2.2	TSPX_NUM_REATTEMPTS	Number of automatic reattempts the SM-TE makes to submit an SM, when the SM-SC always returns Failure cause "SC system failure" in the SMS-SUBMIT-REPORT message. The first submission attempt (started by ASP_OUTGOING_CALL_req) is not counted as a "reattempt". The value shall consequently be 0, if the SM-TE does not perform an automatic reattempt at all.	INTEGER	
2.3	TSPX_NUM_SMs_MEM_FULL	Minimum number of SMS-DELIVER messages of 160 text characters ("the quick brown fox jumps over the lazy dog 012345678 the quick brown fox jumps over the lazy dog 012345678 the quick brown fox jumps over the lazy dog 01234567") to be sent by the tester in order to make the SM-TE enter the "Memory Full" state.	INTEGER	
3.1	TSPX_REMOTE_TE_NPI	Numbering-plan-identification the SUT sets in the Destination-Address to address the destination SM-TE.	BITSTRING(4)	
3.2	TSPX_REMOTE_TE_TON	Type-of-number the SUT sets in the Destination-Address to address the destination SM-TE.	BITSTRING(3)	
3.3	TSPX_REMOTE_TE_DIGITS	Address digits of the destination SM-TE to be called by the SUT. (see note)	IA5String	
3.4	TSPX_REMOTE_SME_SUBADDR	Subaddress of an SME defined/set in the destination SM-TE (as seen from the SUT).	IA5String(1)	
4	TSPX_SC_ADDR	Address of the SM-SC to be called by the SUT and stored in the SUT.	IA5String	
5.1	TSPX_SUT_DIGITS	Address of the SM-TE to be called from the SM-SC (Called Party Number digits).	IA5String	
5.2	TSPX_SUT_SUBADDR	Subaddress of an SME defined/set in the SUT (referred to as SME1). This is the default SME subaddress.	IA5String(1)	
5.3	TSPX_SME_ID_UNDEFINED	Subaddress value which does not correspond to an SME defined/set in the SUT.	IA5String(1)	
6.1	TSPX_SC_TIME_STAMP	The time to be indicated in an SMS-DELIVER message saying when the SM-SC has received this SM from the originating SM-TE. The time value provided for testing shall have the date of the test execution (taking into account that other information, like "hour", are not exactly correct). The parameter shall be given a value according to the semi-octet representation specified in clause 9.2.3.11 of TS 100 901.	OCTETSTRING(7)	
6.2	TSPX_DISCHARGE_TIME	The Discharge-Time value the tester sends in an SMS-STATUS-REPORT message. The parameter shall be given a value according to the semi-octet representation specified in clause 9.2.3.11 of TS 100 901.	OCTETSTRING(7)	
7.1	TSPX_TIMEOUT_TAC	Timeout value of Timer TAC, in units of milliseconds.	INTEGER	
7.2	TSPX_TIMEOUT_TNOAC	Timeout value of Timer TNOAC, in units of milliseconds.	INTEGER	
7.3	TSPX_TIMEOUT_TWAIT	Timeout value of TIMER_TWAIT, in units of seconds.	INTEGER	
7.4	TSPX_TIMEOUT_TVERIFY	Timeout value of TIMER_TVERIFY, in units of seconds.	INTEGER	

Item	Parameter Name	Description	Type	Value
7.5	TSPX_TIMEOUT_TDELAY	Timeout value of Timer TDELAY, in units of seconds.	INTEGER	
7.6	TSPX_TIMEOUT_TMEM_FULL	Timeout value of TIMER_TMEM_FULL, in units of seconds.	INTEGER	
7.7	TSPX_CALL_ACCEPT_TIME	Time in milliseconds after which an SM-TE, having received an incoming call and not having signalled acceptance of the call, is assumed not to answer the call.	INTEGER	
7.8	TSPX_CALL_BACK_TIME	Time in seconds after which the SM-TE, which has not accepted a previous SM call with DMI equal to 2..9, has initiated an SM call to the SM-SC in order to collect the SM (in situations where automatic collection is required; see table 3, clause 5.5.6, ES 201 912. This timer parameter is used in 2 situations: 1. to ensure that within this time the SM-TE actually collects the SM, or 2. to ensure that the SM-TE, having not initiated collection of the SM within this time, will not perform automatic collection of the SM at all.	INTEGER	
NOTE: For Test Parameters containing address digits the following requirement applies: each digit is represented either as one of the IA5 characters "0" to "9", or as one of the special IA5 characters "*", "#", "a", "b" or "c". Address fields in TL parameters encode address digits in the BCD code. When Test Parameters containing address digits are to be inserted in these TL parameters, code transformation is assumed as specified in clause 9.1.2.3 of TS 100 901.				

Annex C (informative): Additional information to the PIXIT

Additional information may be provided when completing the PIXIT questions listed in annex B.

C.1 Identification Summary

Table C.1 is completed by the test laboratory. The item "Contract References" is optional.

Table C.1: Identification Summary

PIXIT Reference Number:	
Test Laboratory Name:	
Date of Issue:	
Issued to (name of client):	
Contract References:	

C.2 Abstract Test Suite Summary

In table C.2 the test laboratory provides the version number of the protocol specification and the version number of ATS which are used in the conformance testing.

Table C.2: ATS Summary

Protocol Specification:	ES 201 912
Version of Protocol Specification:	V1.1.1
Test Specification in prose (TSS&TP):	ES 202 912-7
Version of TSS & TP Specification:	V1.1.1
ATS Specification:	ES 202 912-8
Version of ATS Specification:	V1.1.1
Abstract Test Method:	Remote Single Layer Embedded

C.3 Test Laboratory

C.3.1 Test Laboratory Identification

Table C.3 provides information about the test laboratory.

Table C.3: Test Laboratory Identification

Name of Test Laboratory:	
Postal Address:	
Office address:	
E-mail address:	
Telephone Number:	
FAX Number:	

C.3.2 Accreditation status of the test service

Table C.4 provides information about the test laboratory.

Table C.4: Accreditation status of the test service

Accreditation status:	
Accreditation Reference:	

C.3.3 Manager of Test Laboratory

The test laboratory provides the information about the manager of test laboratory in table C.5.

Table C.5: Manager of Test Laboratory

Name of Manager of Test Laboratory:	
E-mail address:	
Telephone Number:	
FAX Number:	
E-mail Address:	

C.3.4 Contact person of Test Laboratory

The test laboratory provides the information about the contact person of test laboratory in table C.6.

Table C.6: Contact person of Test Laboratory

Name of Contact of Test Laboratory:	
E-mail address:	
Telephone Number:	
FAX Number:	
E-mail Address:	

C.3.5 Means of Testing

In table C.7, the test laboratory provides a statement of conformance of the Means Of Testing (MOT) to the reference standardized ATS, and identifies all restrictions for the test execution required by the MOT beyond those stated in the reference standardized ATS.

Table C.7: Means of Testing

Means of Testing

C.3.6 Instructions for Completion

In table C.8 the test laboratory provides any specific instructions necessary for completion and return of the proforma from the client.

Table C.8: Instruction for Completion

Instructions for Completion

C.4 Client

C.4.1 Client Identification

The client provides the identification in table C.9.

Table C.9: Client Identification

Name of Client:	
Postal Address:	
Office Address:	
Telephone Number:	
FAX Number:	

C.4.2 Client Test Manager

In table C.10 the client provides information about the test manager.

Table C.10: Client Test Manager

Name of Client Test Manager:	
Telephone Number:	
FAX Number:	
E-mail Address:	

C.4.3 Client Contact person

In table C.11 the client provides information about the test contact person.

Table C.11: Client Contact person

Name of Client contact person:	
Telephone Number:	
FAX Number:	
E-mail Address:	

C.4.4 Test Facilities Required

In table C.12, the client records the particular facilities required for testing, if a range of facilities is provided by the test laboratory.

Table C.12: Test Facilities Required

Test Facilities Required

C.5 System Under Test

C.5.1 SUT information

The client provides information about the SUT in table C.13.

Table C.13: SUT Information

System Name:	
System Version:	
SCS Reference:	
Machine Configuration:	
Operating System Identification:	
IUT Identification:	
PICS Reference for the IUT:	None

C.5.2 Limitations of the SUT

In table C.14, the client provides information explaining if any of the abstract tests cannot be executed.

Table C.14: Limitation of the SUT

Limitations of the SUT

C.5.3 Environmental Conditions

In table C.15 the client provides information about any tighter environmental conditions for the correct operation of the SUT.

Table C.15: Environmental Conditions

Environmental Conditions

C.6 Ancillary Protocols

This clause is completed by the client in conjunction with the test laboratory.

In table C.16, the client identifies relevant information concerning each ancillary protocol in the SUT other than the IUT itself.

Based on the MOT the test laboratory should create question proforma for each ancillary protocol in the blank space following each table. The information required is dependent on the MOT and the SUT, and covers all the addressing, parameter values, timer values and facilities (relevant to ENs) as defined by the PICS for the ancillary protocol.

C.6.1 Ancillary Protocols 1 (Data Link Layer)

Table C.16: Ancillary Protocol 1 (Data Link Layer)

Protocol Name:	
Version number:	
PICS Reference (optional):	
PIXIT Reference (optional):	
PCTR Reference (optional):	

Annex D (informative): Bibliography

ETSI EN 300 659-1 (V1.3.1): "Access and Terminals (AT); Analogue access to the Public Switched Telephone Network (PSTN); Subscriber line protocol over the local loop for display (and related) services; Part 1: On-hook data transmission".

ETSI ES 300 659-3 (V1.3.1): "Public Switched Telephone Network (PSTN); Subscriber line protocol over the local loop for display (and related) services; Part 3: Data link message and parameter coding".

ETSI ES 200 778-1 (V1.2.2): "Access and Terminals (AT); Analogue access to the Public Switched Telephone Network (PSTN); Protocol over the local loop for display and related services; Terminal equipment requirements; Part 1: On-hook data transmission".

ETSI TS 100 942 (V7.0.0): "Digital cellular telecommunications system (Phase 2+) (GSM); Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface (GSM 04.11 version 7.0.0 Release 1998)".

ISO/IEC 9646-7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

History

Document history		
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