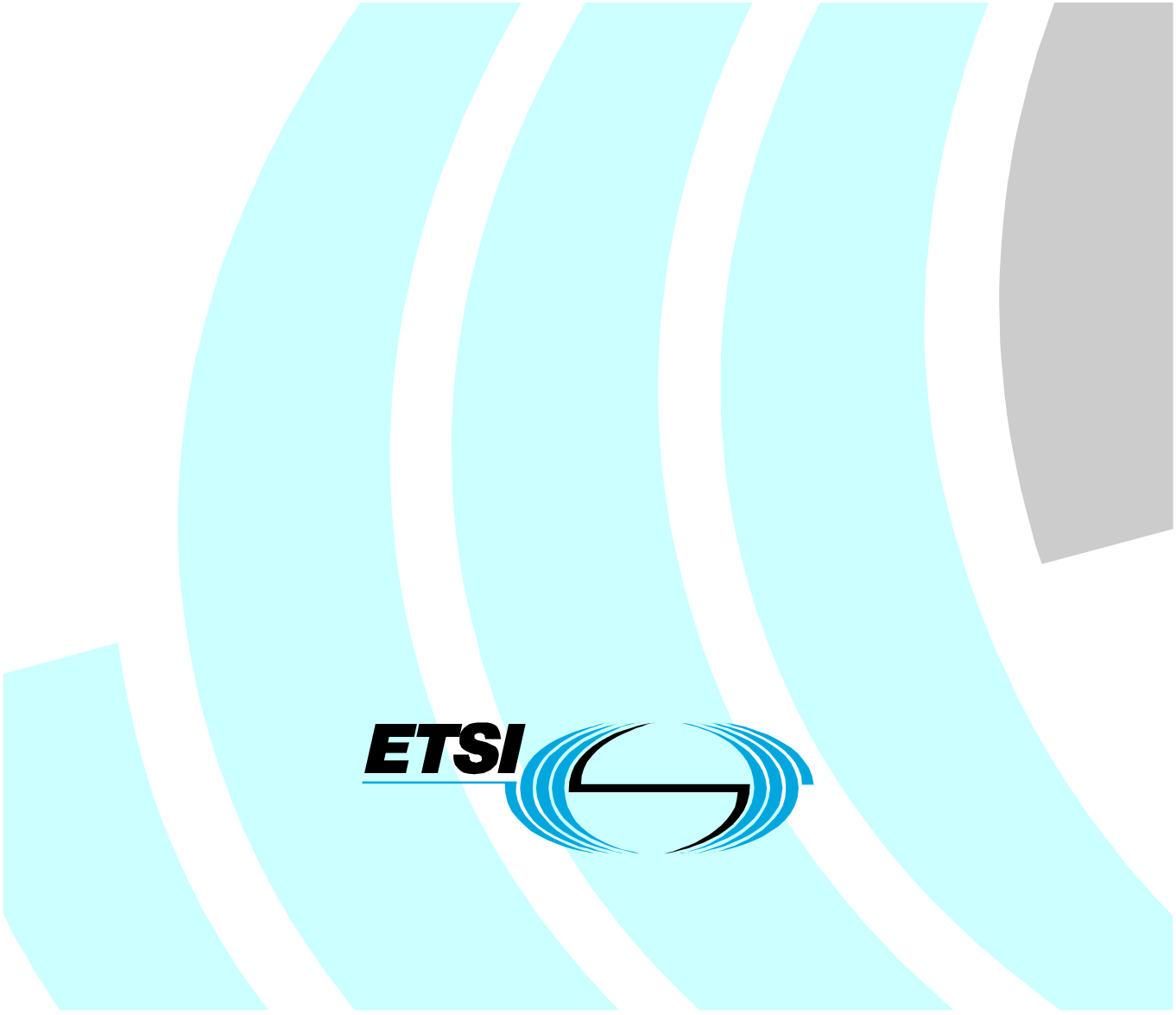
ETSI ES 200 778-5 V1.1.2 (2002-11)

ETSI Standard

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 5: Abstract Test Suite (ATS) and partial Protocol
Implementation eXtra Information for Testing (PIXIT)
proforma specification for the user;
On-Hook and Off-Hook



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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 5 of a multi-part deliverable covering the Protocol over the local loop for display and related services; Terminal equipment requirements, as identified below:

Part 1: "On-hook data transmission";

Part 2: "Off-hook data transmission";

Part 3: "Protocol Implementation Conformance Statement (PICS) proforma specification; On-Hook and Off-Hook";

Part 4: "Test Suite Structure and Test Purposes (TSS&TP); On-Hook and Off-Hook";

Part 5: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the user; On-Hook and Off-Hook".

1 Scope

The present document specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma for both the On-Hook and the Off-Hook Data Transmission over the PSTN Access for Terminal Equipment (TE).

The present document does not cover the combination of services.

2 References

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

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] ETSI 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".

[2] 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".

[3] ETSI EN 300 659-3 (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 3: Data link message and parameter codings".

[4] ETSI ES 200 778-3 (V1.1.2): "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 3: Protocol Implementation Conformance Statement (PICS) proforma specification On-Hook and Off-Hook".

[5] ETSI ES 200 778-4 (V1.1.2): "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 4: Test Suite Structure and Test Purposes (TSS&TP); On-Hook and Off-Hook".

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

[7] ISO/IEC 9646-2 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".

[8] ISO/IEC 9646-3 (1998): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".

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

[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] ITU-T Recommendation T.50: "International Reference Alphabet (IRA) (Formerly International Alphabet No. 5 or IA5) - Information technology - 7-bit coded character set for information interchange".

3 Definitions and abbreviations

3.1 Definitions

3.1.1 Definitions related to conformance testing

For the purposes of the present document, the following terms and definitions apply:

Abstract test case: Refer to ISO/IEC 9646-2 [7] and ISO/IEC 9646-3 [8].

Abstract Test Suite (ATS): Refer to ISO/IEC 9646-1 [6].

Implementation Under Test (IUT): Refer to ISO/IEC 9646-1 [6].

Lower Tester (LT): Refer to ISO/IEC 9646-2 [7] and ISO/IEC 9646-3 [8].

PICS proforma: Refer to ISO/IEC 9646-1 [6].

Point of Control and Observation (PCO): See ISO/IEC 9646-1 [6].

Protocol Implementation Conformance Statement (PICS): Refer to ISO/IEC 9646-1 [6].

Protocol Implementation eXtra Information for Testing (PIXIT): Refer to ISO/IEC 9646-2 [7] and ISO/IEC 9646-3 [8].

System Under Test (SUT): Refer to ISO/IEC 9646-2 [7] and ISO/IEC 9646-3 [8].

Test Purpose (TP): Refer to ISO/IEC 9646-1 [6].

Upper Tester (UT): Refer to ISO/IEC 9646-2 [7] and ISO/IEC 9646-3 [8].

3.1.2 Definitions related to on-hook/off-hook data transmission

For the purposes of the present document, the terms and definitions given in ES 200 778-1 [1], ES 200 778-2 [2], EN 300 659-3 [3] and ES 200 778-3 [4] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations defined in ES 200 778-3 [4], ES 200 778-4 [5], ES 200 778-1 [1], ES 200 778-2 [2], EN 300 659-3 [3] and the following apply:

AS	Alerting Signal
ASP	Abstract Service Primitive
ATM	Abstract Test Method
ATS	Abstract Test Suite
CLIP	Calling Line Identification Presentation
DL	Data Link
DT-AS	Dual Tone-Alerting Signal
DTMF	Dual Tone Multi-Frequency
ExTS	Executable Test Suite
FSK	Frequency-Shift Keying
IUT	Implementation Under Test
LR	Line Reversal
LR+DT-AS	Line Reversal followed by a Dual Tone-Alerting Signal
LT	Lower Tester
MOT	Means Of Testing
MSN	Multiple Subscriber Number
PCO	Point of Control and Observation
PCTR	Protocol Conformance Test Report
PDU	Protocol Data Unit

PHY	PHYsical layer
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
PRES	PRESentation
PSTN	Public Switched Telephone Network
RP-AS	Ringing Pulse Alerting Signal
SCTR	Static Conformance Test Report
SUB	SUB-addressing
SUT	System Under Test
TE	Terminal Equipment
TP	Test Purpose
TSS	Test Suite Structure
TTCN	Tree and Tabular Combined Notation
UT	Upper Tester

4 Abstract Test Method (ATM)

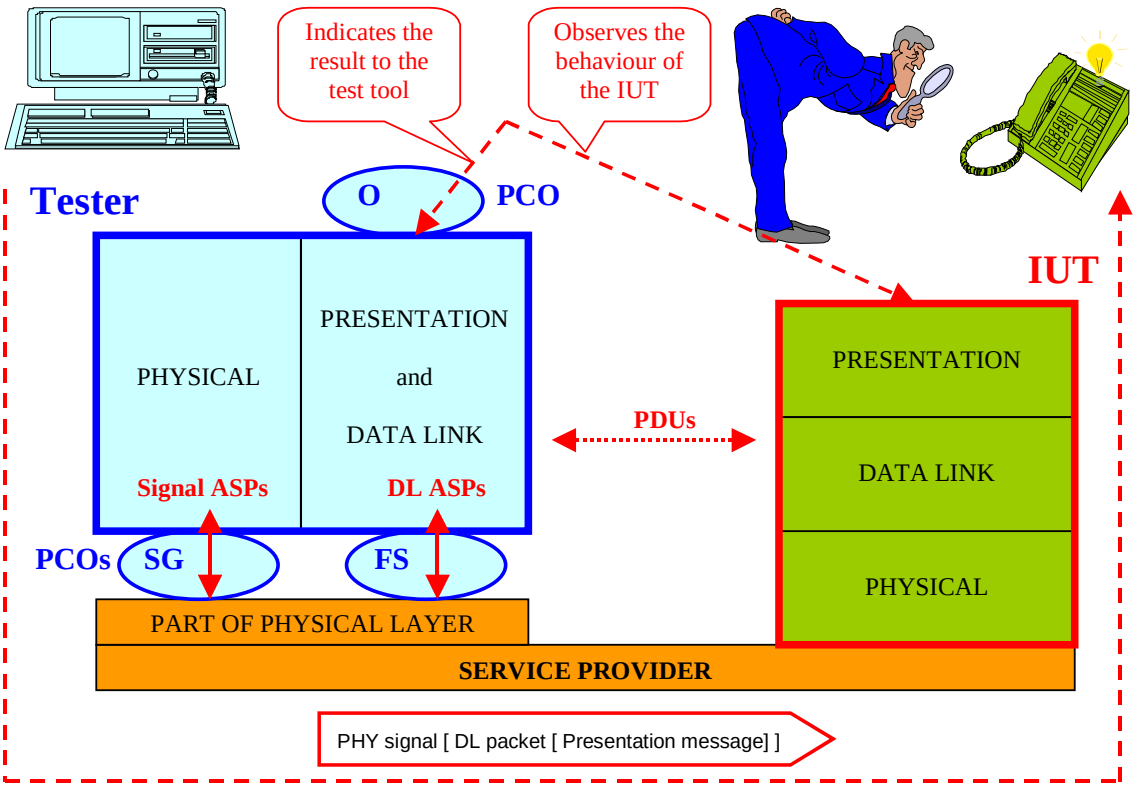

Figure 1: Test architecture for PSTN supplementary services

For a better comprehension of the test method, it is recommended to read first the TSS&TP document [5].

The remote test method is applied, in order to enable the connection of the test tool to the IUT with the standard PSTN plug/socket.

The IUT is the whole system to provide the services. It consists of the Physical, Data Link and Presentation layers. Each layer is covered by one group of test cases.

The Service provider is the part of the physical layer that cannot be tested.

Different PCO (Point of Control and Observation) are used:

1) SG: PCO to control the line signalling for analogue signals like: DT-AS, RP-AS, DTMF, ringing, etc.

2) FS: PCO to control the line signalling for FSK data transmission.

3) O: ISO/IEC 9646-2 [7] allows the informal expression of Test Co-ordination Procedures (TCP) between the System Under Test (SUT) upper layer(s) and the Lower Tester (LT). In the ATS contained in annex C, TCP is achieved by use of a second "informal" PCO, called "O" (for Operator). This allows to control the reaction of the IUT on receiving signals from the Tester and to indicate the result back to the Tester.

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 ISO/IEC 9646-3 [8], Edition 2 (TTCN 2).

6.2 ASP types

ASPs enable the Service Provider to send or receive PDUs, using the parameters transmitted inside the ASPs. The structure of the ASPs shall fit the type of PDUs or Signals to be sent/received over the PCOs.

ASP Type Definition		
ASP Name : LR **PCO Type** : SIGNAL **Comments** : Line reversal signal. No parameter.		
Parameter Name	Parameter Type	Comments
Detailed Comments :		

The LR ASP corresponds to the Line Reversal signal. No signal feature shall be transmitted so that this ASP does not contain any parameter.

ASP Type Definition		
ASP Name : DT_AS **PCO Type** : SIGNAL **Comments** : DT-AS signal. Low and High frequency and levels, and duration are parametrized with integer values.		
Parameter Name	Parameter Type	Comments
LF_frequency	INTEGER	Low frequency (Hz)
HF_frequency	INTEGER	High frequency (Hz)
LF_level	INTEGER	Low frequency level (dBV)
HF_level	INTEGER	High frequency level (dBV)
Duration	INTEGER	Signal duration (ms).
Detailed Comments :		

The DT_AS ASP contains the required parameters to specify the DT-AS signal.

NOTE: Some ASPs contains a duration parameter. This means by the sending of this ASP that the corresponding signal is maintained during this duration. In the test case, the next event can only start after the signal is completely sent, i.e. at the end of its duration.

ASP Type Definition		
ASP Name : RP_AS		
PCO Type : SIGNAL		
Comments : RP-AS signal. Frequency, Amplitude and duration are parametrized with integer values.		
Parameter Name	Parameter Type	Comments
Frequency	INTEGER	Ring pulse frequency (Hz).
Amplitude	INTEGER	Amplitude (Vrms)
Duration	INTEGER	Signal duration (ms).
Detailed Comments :		

ASP Type Definition		
ASP Name : RING_PATTERN		
PCO Type : SIGNAL		
Comments : Ring Pattern signal. Frequency, Amplitude and duration are parametrized with integer values.		
Parameter Name	Parameter Type	Comments
Frequency	INTEGER	Ring pulse frequency (Hz).
Amplitude	INTEGER	Amplitude (Vrms)
Duration	INTEGER	Signal duration (ms).
Detailed Comments :		

The RP_AS and RING_PATTERN ASPs contain the Frequency, Amplitude and Duration parameters that are necessary to specify the corresponding signals.

ASP Type Definition		
ASP Name : DL_FSK		
PCO Type : FSK		
Comments : Data link layer message type. This message is to be transmitted by FSK with the physical values indicated in the parameter.		
Parameter Name	Parameter Type	Comments
Mark_frequency	INTEGER	
Space_frequency	INTEGER	
mark_level	INTEGER	
space_level	INTEGER	
Noise	INTEGER	A value of 0 means no noise.
Channel_seizure	BOOLEAN	indicates if the channel seizure signal is present. (1)
Mark_signal	INTEGER	Number of mark bits in the Mark Signal block (2).
Presentation_layer	PRES_LAYER_MSG	PRES_LAYER_PDU type
Checksum	HEXSTRING [2]	
Detailed Comments : (1) The channel seizure signal is present in on-hook mode and absent in off-hook mode. (2) the number of mark bits present in the Mark Signal block depends on the mode used (on/off-hook).		

The DL_FSK ASP enables to send a DL message using the FSK signal features as defined by the corresponding parameter (i.e. Mark and Space frequency and level, and Noise). This ASP is particularly to cover the test cases to test the FSK physical parameters.

ASP Type Definition		
ASP Name : DL_MSG **PCO Type** : FSK **Comments** : Data link layer message type. This message is to be transmitted by FSK with the following physical values : frequencies : mark=1300 Hz, space=2100 Hz, -8dBV<level<-36dBV (On-hook) or -11dBV<level<-33dBV (Off-hook), twist<6dB, noise<-25dB. NOTE the message type and message length fields are moved to the presentation layer PDU type because they are related to the presentation layer.		
Parameter Name	Parameter Type	Comments
Channel_seizure	BOOLEAN	indicates if the channel seizure signal is present. (1)
Mark_signal	INTEGER	Number of mark bits in the Mark Signal block (2).
Presentation_layer	PRES_LAYER_MSG	PRES_LAYER_PDU type
Checksum	HEXSTRING [2]	
Detailed Comments : (1) The channel seizure signal is present in on-hook mode and absent in off-hook mode. (2) the number of mark bits present in the Mark Signal block depends on the mode used (off/on-hook).		

The DL_MSG ASP is used to send DL message with default FSK physical parameters, as indicated in the Comment field of the above ASP Type Definition.

The Presentation layer message, which consists of a set of Presentation Layer Parameter, is defined by a PDU of type PRES_LAYER_MSG.

The checksum, which is calculated by a Test Suite Operation, is transmitted in the Checksum parameter.

ASP Type Definition		
ASP Name : CONTROL **PCO Type** : OBS **Comments** : Primitive either to display control messages for the test operator, or to getthe answer fromthe operator concerning the behaviour of the IUT.		
Parameter Name	Parameter Type	Comments
message	IA5String	text message.
Detailed Comments :		

The CONTROL ASP is to be used at the PCO O, and enables to carry messages to be displayed for the test operator or control message from the test operator (i.e. Yes/No).

ASP Type Definition		
ASP Name : DTMF **PCO Type** : SIGNAL **Comments** :		
Parameter Name	Parameter Type	Comments
DIGIT	DIGIT_TYPE	
Detailed Comments :		

The DTMF ASP enables the Service Provider to send or receive DTMF code strings. The type DIGIT_TYPE being IA5 String.

6.3 PDU type

PDU Type Definition			
PDU Name : PRES_LAYER_MSG			
PCO Type : FSK			
Encoding Rule Name :			
Encoding Variation :			
Comments : Generic type for a Presentation Layer message content, with a set of 20 parameters in order to cover the maximum number of parameters, which is currently 17.			
Field Name	Field Type	Field Encoding	Comments
Message_type	HEXSTRING [2]		
Message_length	HEXSTRING [2]		
Parameter1	PRES_LAYER_PARAMETER		Structured type.
Parameter2	PRES_LAYER_PARAMETER		Structured type.
Parameter3	PRES_LAYER_PARAMETER		Structured type.
Parameter4	PRES_LAYER_PARAMETER		Structured type.
Parameter5	PRES_LAYER_PARAMETER		Structured type.
Parameter6	PRES_LAYER_PARAMETER		Structured type.
Parameter7	PRES_LAYER_PARAMETER		Structured type.
Parameter8	PRES_LAYER_PARAMETER		Structured type.
Parameter9	PRES_LAYER_PARAMETER		Structured type.
Parameter10	PRES_LAYER_PARAMETER		Structured type.
Parameter11	PRES_LAYER_PARAMETER		Structured type.
Parameter12	PRES_LAYER_PARAMETER		Structured type.
Parameter13	PRES_LAYER_PARAMETER		Structured type.
Parameter14	PRES_LAYER_PARAMETER		Structured type.
Parameter15	PRES_LAYER_PARAMETER		Structured type.
Parameter16	PRES_LAYER_PARAMETER		Structured type.
Parameter17	PRES_LAYER_PARAMETER		Structured type.
Parameter18	PRES_LAYER_PARAMETER		Structured type.
Parameter19	PRES_LAYER_PARAMETER		Structured type.
Parameter20	PRES_LAYER_PARAMETER		Structured type.
Detailed Comments :			

The PRES_LAYER_MSG PDU type definition contains the DL message header, i.e. the message type and the message length, and a set of parameters with a maximum number of 20 parameters.

The parameter content is defined by a structured type definition.

6.4 Structured type

Structured Type Definition			
Type Name : PRES_LAYER_PARAMETER			
Encoding Variation :			
Comments : Generic type to specify all types of parameters (with a maximum content length).			
Element Name	Type Definition	Field Encoding	Comments
Type	HEXSTRING [2]		
Length	HEXSTRING [2]		
Content	OCTETSTRING [0 .. 253]		
Detailed Comments :			

6.5 Dynamic behaviour

Test Case Dynamic Behaviour

Test Case Name : PHY_01_011
Group : PHY/FSK/On_hook/AssociatedWithRinging/PriorToRinging/
Purpose : Observe that the IUT, in idle state, receiving the physical RP-AS signals with Ring voltage=90Vrms and ring pattern duration=200ms, correctly receives the FSK transmitted data.
Configuration :
Default : DF
Comments :

Nr	Label	Behaviour Description	Constraints Ref	Verdict	Comments
1		+PR_Idle			(1)
2		SG!RP_AS	RP_AS_par(90, 200)		
3		START T3			
4		?TIMEOUT T3			
5		FS!DL_MSG	DL_generic_onHook		
6		START T2			
7		?TIMEOUT T2			
8		SG!RING_PATTERN	Ring_pattern_def		
9		O!CONTROL START TWAIT_answer	DISPLAY("Generic message correctly displayed?")		
10		O?CONTROL	YES	P	
11		O?CONTROL	NO	I	
12		?TIMEOUT TWAIT_answer		I	

Detailed Comments : (1) Leaves the IUT in the Idle state.

The Test Case above illustrates the particular behaviour of the Constraints including a duration parameter. In the row #2, a RP-AS signal with duration of 200 ms is sent to the IUT. This means that the execution of the row #3 starts after the RP-AS signal has been completely sent, i.e. after the 200 ms duration.

7 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 conformant with the PCTR template given in annex B of ISO/IEC 9646-5 [10].

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

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.

8 PIXIT conformance

A test realizer, producing an executable test suite for the ATS specification contained in annex C, is required, as specified in ISO/IEC 9646-4 [9], to produce an augmented partial PIXIT proforma conformant with this partial PIXIT proforma specification.

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

A test laboratory, offering testing for the ATS specification contained in annex C, is required, as specified in ISO/IEC 9646-5 [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.

9 ATS conformance

The test realizer, producing MOT and ExTS for this ATS specification, shall comply with the requirements of ISO/IEC 9646-4 [9]. In particular, these concern the realization of an ExTS based on each ATS. The test realizer shall provide a statement of conformance of the MOT to this ATS specification.

An ExTS 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 [10]. A test laboratory which claims to conform to this ATS specification shall use an MOT which conforms to this ATS.

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

A.1 Identification summary

A.1.1 Protocol conformance test report

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

A.1.2 IUT identification

Name:	
Version:	
Protocol specification:	ES 200 778-1 and ES 200 778-2
PICS:	ES 200 778-3
Previous PCTRs (if any):	

A.1.3 Testing environment

PIXIT Reference number:	
ATS Specification:	ES 200 778-5
Abstract Test Method:	Remote test method (see ISO/IEC 9646-2)
Means of Testing identification:	
Dates of testing:	
Conformance log reference(s):	
Retention date for log reference(s):	

A.1.4 Limits and reservations

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

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A.1.5 Comments

Additional comments may be given by either the client or the test laboratory on any of the contents of the PCTR, for example, to note disagreement between the two parties.

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A.2 IUT conformance status

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

Strike the appropriate words in this sentence. If the PICS for this IUT is consistent with the static conformance requirements (as specified in clause A.3 of 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:

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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
PHY_01_001				
PHY_01_002				
PHY_01_003				
PHY_01_004				
PHY_01_005				
PHY_01_006				
PHY_01_007				
PHY_01_008				
PHY_01_009				
PHY_01_010				
PHY_01_011				
PHY_01_012				
PHY_01_013				
PHY_01_014				
PHY_01_015				
PHY_01_016				
PHY_01_017				
PHY_01_018				
PHY_01_019				
PHY_01_020				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
PHY_01_021				
PHY_01_022				
PHY_01_023				
PHY_01_024				
PHY_01_025				
PHY_01_026				
PHY_01_027				
PHY_01_028				
PHY_01_029				
PHY_01_030				
PHY_02_001				
PHY_02_002				
PHY_02_003				
PHY_02_004				
PHY_02_005				
PHY_02_006				
PHY_02_007				
PHY_02_008				
PHY_02_009				
PHY_02_010				
DL_03_001				
DL_03_002				
DL_04_001				
DL_04_002				
DL_04_003				
DL_04_004				
PRES_CLIP05_001				
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PRES_CLIP06_024				
PRES_CLIP06_025				
PRES_CLIP06_026				
PRES_CLIP06_027				
PRES_CLIP06_028				
PRES_CNIP07_001				
PRES_CNIP07_002				
PRES_CNIP07_003				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
PRES_CNIP07_004				
PRES_CNIP08_005				
PRES_CNIP08_006				
PRES_CNIP08_007				
PRES_CNIP08_008				
PRES_CNIP08_009				
PRES_CNIP08_010				
PRES_CNIP08_011				
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PRES_CNIP08_027				
PRES_CNIP08_028				
PRES_AOCDE09_001				
PRES_AOCDE09_002				
PRES_AOCDE10_003				
PRES_AOCDE10_004				
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PRES_AOCDE10_012				
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PRES_SMS11_002				
PRES_SMS12_003				
PRES_SMS12_004				
PRES_SMS12_005				
PRES_SMS12_006				
PRES_SMS12_007				
PRES_SMS12_008				
PRES_SMS12_009				
PRES_SMS12_010				
PRES_CCBS13_001				
PRES_CCBS13_002				
PRES_CCBS14_003				
PRES_CCBS14_004				
PRES_CCBS14_005				
PRES_CCBS14_006				
PRES_CCBS14_007				
PRES_CCBS14_008				
PRES_CCBS14_009				
PRES_MWI15_001				
PRES_MWI15_002				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
PRES_MWI16_003				
PRES_MWI16_004				
PRES_MWI16_005				
PRES_MWI16_006				
PRES_MWI16_007				
PRES_MWI16_008				
PRES_MWI16_009				
PRES_MWI16_010				
PRES_MWI16_011				
PRES_MWI16_012				
PRES_MWI16_013				
PRES_MWI16_014				
PRES_MSC17_001				
PRES_MSC17_002				
PRES_MSC17_003				
PRES_MSC17_004				
PRES_MSC17_005				
PRES_MSC17_006				
PRES_MSC18_007				
PRES_MSC18_008				
PRES_MSC18_009				
PRES_MSC18_010				
PRES_MSC18_011				
PRES_MSC18_012				
PRES_MSC18_013				
PRES_MSC18_014				
PRES_MSC18_015				
PRES_MSC18_016				
PRES_MSC18_017				
PRES_MSC18_018				
PRES_MSC18_019				
PRES_CR19_001				
PRES_CR19_002				
PRES_CR19_003				
PRES_CR20_004				
PRES_CR20_005				
PRES_CR20_006				
PRES_CR20_007				
PRES_CR20_008				
PRES_CR20_009				
PRES_CR20_010				
PRES_CR20_011				
PRES_CR20_012				
PRES_CR20_013				
PRES_ALARM21_001				
PRES_ALARM21_002				
PRES_ALARM22_003				
PRES_ALARM22_004				
PRES_ALARM22_005				
PRES_ALARM22_006				
PRES_USER23_001				
PRES_USER23_002				
PRES_USER24_003				
PRES_USER24_004				
PRES_USER24_005				
PRES_USER24_006				

ATS reference	Selected? (Y/N)	Run? (Y/N)	Verdict	Observations
PRES_MONING25_001				
PRES_MONING25_002				
PRES_MONING26_003				
PRES_MONING26_004				
PRES_MONING26_005				
PRES_MONING26_006				
PRES_MONING26_007				
PRES_MONING26_008				
PRES_MONING26_009				
PRES_MONING26_010				
PRES_MONING26_011				
PRES_MONING26_012				
PRES_MONING26_013				
PRES_MONING26_014				
PRES_MONING26_015				
PRES_INV29_001				
PRES_INV29_002				
PRES_INV29_003				
PRES_INV29_004				
PRES_INV29_005				
PRES_INV29_006				
DTMF_001				
DTMF_002				
DTMF_003				
DTMF_004				
DTMF_005				
DTMF_006				
DTMF_007				
DTMF_008				

A.7 Observations

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

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Annex B (normative): Partial PIXIT proforma

B.1 Identification summary

PIXIT number:

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Test laboratory name:

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Date of issue:

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Issued to:

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B.2 Abstract test suite summary

Protocol specification:	ES 200 778-1 and ES 200 778-2
ATS specification:	ES 200 778-5
Abstract test method:	Remote test method (see ISO/IEC 9646-2)

B.3 Test laboratory

Test laboratory identification:

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Accreditation status of the test service:

.....

Accreditation reference:

.....

Test laboratory manager:

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Test laboratory contact:

.....

Means of testing:

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Test laboratory instructions for completion:

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B.4 Client (of the test laboratory)

Client identification:

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Client test manager:

.....

Client contact:

.....

Test facilities required:

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B.5 System Under Test (SUT)

Name:

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Version:

.....

SCS reference:

.....

Machine configuration:

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Operating system identification:

.....

IUT identification:

.....

PICS (all layers):

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.....

Limitations of the SUT:

.....

Environmental conditions:

.....

B.6 Protocol information

B.6.1 Protocol identification

Specification reference: ES 200 778-1 and ES 200 778-2.

Protocol version: V1.2.2

PICS reference: ES 200 778-3

NOTE: The PICS reference should reference a completed PICS which is conformant with the PICS proforma contained in ES 200 778-3.

B.6.2 Physical parameter values

Table B.1: Physical parameters

Item	Description	Value	Test suite parameter name
1.1	Default ring pattern frequency (Hz).		PX_RING_PATTERN_F_DEF
1.2	Default ring pattern amplitude (V).		PX_RING_PATTERN_V_DEF
1.3	Default ring pattern duration (ms).		PX_RING_PATTERN_D_DEF
1.4	Default value for the frequency of the Low frequency of the DT-AS (in Hz) to be used when no other value is specified.		PX_DT_LF_frequency_def
1.5	Default value for the frequency of the High frequency of the DT-AS (in Hz) to be used when no other value is specified.		PX_DT_HF_frequency_def
1.6	Default value for the level of the Low frequency of the DT-AS (in dBV) to be used when no other value is specified.		PX_DT_LF_level_def
1.7	Default value for the level of the High frequency of the DT-AS (in dBV) to be used when no other value is specified.		PX_DT_HF_level_def
1.8	Default value for the DT-AS duration (in ms) to be used when no other value is specified.		PX_DT_AS_duration_def
1.9	Default ring pulse (RP) frequency (Hz).		PX_RP_AS_frequency_def
1.10	Default ring pulse (RP) amplitude (V).		PX_RP_AS_amplitude_def
1.11	Default ring pulse (RP) duration (ms).		PX_RP_AS_duration_def

B.6.3 Presentation layer parameter content

Table B.2: Content of the presentation layer parameter

Item	Description	Value	Test suite parameter name
2.1	Length of Calling Line Id parameter (HEXSTRING [2]).		PX_CallingLineId_length
2.2	Content of the Calling Line Id parameter (0 to 9, * and #, OCTETSTRING[0 to 20]).		PX_CallingLineId_content
2.3	Length of Called Line Id parameter (HEXSTRING [2]).		PX_CalledLineId_length
2.4	Content of the Called Line Id parameter (0 to 9, * and #, OCTETSTRING[0 to 20]).		PX_CalledLineId_content
2.5	Length of Calling Party Name parameter (HEXSTRING [2]).		PX_CallingPartyName_length
2.6	Content of the Calling Party Name parameter (characters according to ITU-T Recommendation T.50, OCTETSTRING[0 to 50]).		PX_CallingPartyName_content
2.7	Length of Last Message CLI parameter (HEXSTRING [2]).		PX_LastMessageCLI_length
2.8	Content of the Last Message CLI parameter (digits, OCTETSTRING[0 to 20]).		PX_LastMessageCLI_content
2.9	Length of Complementary Calling Line Id parameter (HEXSTRING [2]).		PX_CompCallingLineId_length
2.10	Content of the Complementary Calling Line Id parameter (0 to 9, * and #, OCTETSTRING[0 to 20]).		PX_CompCallingLineId_content
2.11	Length of First Called Line Id parameter (HEXSTRING [2]).		PX_FirstCalledLineId_length
2.12	Content of First Called Line Id parameter (0 to 9, * and #, OCTETSTRING[0 to 20]).		PX_FirstCalledLineId_content
2.13	Length of RedirectingNumber parameter (HEXSTRING [2]).		PX_RedirectingNumber_length
2.14	Content of the RedirectingNumber parameter (0 to 9, * and #, OCTETSTRING[0 to 20]).		PX_RedirectingNumber_content
2.15	Content of the Charge parameter from octet 3 until octet 16 (OCTETSTRING[14]).		PX_Charge_content
2.16	Content of the Additional Charge parameter from octet 3 until octet 16 (OCTETSTRING[14]).		PX_Add_Charge_content
2.17	Length of NetworkProviderId parameter (HEXSTRING [2]).		PX_NetworkProviderId_length
2.18	Content of NetworkProviderId parameter (characters according to ITU-T Recommendation T.50, OCTETSTRING[0 to 20]).		PX_NetworkProviderId_content
2.19	Length of Carrier Identity parameter (HEXSTRING [2]).		PX_CarrierId_length
2.20	Content of Carrier Identity parameter (characters according to ITU-T Recommendation T.50, OCTETSTRING[0 to 20]).		PX_CarrierId_content
2.21	Length of Display Information parameter (HEXSTRING [2]).		PX_DisplayInformation_length
2.22	Content of Display Information parameter (characters according to ITU-T Recommendation T.50, OCTETSTRING[0 to 253]).		PX_DisplayInformation_content
2.23	Length of Selection of Terminal Function parameter with MSN content (HEXSTRING [2]).		PX_MSN_length
2.24	Content of Selection of Terminal Function parameter with MSN, starts with octet "02" (MSN) followed by the MSN digits (characters according to ITU-T Recommendation T.50, OCTETSTRING[0 to 253]).		PX_MSN_content
2.25	Length of Selection of Terminal Function parameter with SUB content (HEXSTRING [2]).		PX_SUB_length
2.26	Content of Selection of Terminal Function parameter with SUB, starts with octet "03" (SUB) follo2wed by the MSN digits (characters according to ITU-T Recommendation T.50, OCTETSTRING[0 to 253]).		PX_SUB_content

B.6.4 Generic signalling method

Table B.3: Signalling method used in the generic case

Item	Description	Value (Y/N)	Test suite parameter name
3.1	True if the IUT uses Off-hook signalling for testing DL and Presentation layers (as generic physical signalling method).		PX_GEN_OFF_HOOK
3.2	True if the IUT uses On-hook signalling, DT-AS alerting method, for testing DL and Presentation layers (as generic physical signalling method).		PX_GEN_DT_AS
3.3	True if the IUT uses On-hook signalling, RP-AS alerting method, for testing DL and Presentation layers (as generic physical signalling method).		PX_GEN_RP_AS
3.4	True if the IUT uses On-hook signalling, LR+DT-AS alerting method, for testing DL and Presentation layers (as generic physical signalling method).		PX_GEN_LR_DT_AS
3.5	True if the IUT uses On-hook signalling, Prior to Ringing alerting method, for testing DL and Presentation layers (as generic physical signalling method).		PX_GEN_PRIOR_RINGING
3.6	True if the IUT uses On-hook signalling, During Ringing alerting method, for testing DL and Presentation layers (as generic physical signalling method).		PX_GEN_DURING_RINGING
3.7	True if the IUT uses On-hook signalling, Not Associated with Ringing alerting method, for testing DL and Presentation layers (as generic physical signalling method).		PX_GEN_NOT_ASS_RINGING
3.8	True if the Channel seizure field is present in the generic DL message (true if On-hook, FALSE if Off-hook).		PX_GEN_CHAN_SEIZURE

B.6.5 Generic message and parameter content

Table B.4: Content of the messages and parameters used in the generic case

Item	Description	Value	Test suite parameter name
4.1	Number of mark bits in the generic DL message (INTEGER).		PX_GEN_MARK_NR
4.2	Value of the generic message type to be used when no message type is specified in the test purpose (HEXSTRING).		PX_GEN_MSG_TYPE
4.3	Message length (1 octet) to be sent when no message type is specified in the test purpose (HEXSTRING)).		PX_GEN_MSG_length
4.4	Parameter type of the 1. generic parameter (HEXSTRING)		PX_GEN_PAR1_type
4.5	Parameter length of the 1. generic parameter (HEXSTRING)		PX_GEN_PAR1_length
4.6	Parameter content of the 1. generic parameter (OCTETSTRING)		PX_GEN_PAR1_content
4.7	Parameter type of the 2. generic parameter (HEXSTRING)		PX_GEN_PAR2_type
4.8	Parameter length of the 2. generic parameter (HEXSTRING)		PX_GEN_PAR2_length
4.9	Parameter content of the 2. generic parameter (OCTETSTRING)		PX_GEN_PAR2_content
4.10	Parameter type of the 3. generic parameter (HEXSTRING)		PX_GEN_PAR3_type
4.11	Parameter length of the 3. generic parameter (HEXSTRING)		PX_GEN_PAR3_length
4.12	Parameter content of the 3. generic parameter (OCTETSTRING)		PX_GEN_PAR3_content

B.6.6 Timer values

Table B.5: Timer values

Item	Description	Value	Test suite parameter name
5.1	Delay to wait for the operator to a question displayed from the test case (in s).		PX_TWAIT_answer
5.2	Delay to wait for the operator to bring the IUT in the idle state (in s).		PX_TWAIT_idle
5.3	Delay to wait for the operator to bring the IUT in the Off-hook state (in s).		PX_TWAIT_Offhook

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.

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

The TTCN.GR representation of this ATS is contained in an Adobe Portable Document Format™ file (ES200778_5_v120r.pdf contained in archive es_20077805v010102p0.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 (ES200778_5_v120.mp contained in archive es_20077805v010102p0.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): 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 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".

History

Document history		
V1.1.1	May 2002	Publication
V1.1.2	November 2002	Publication