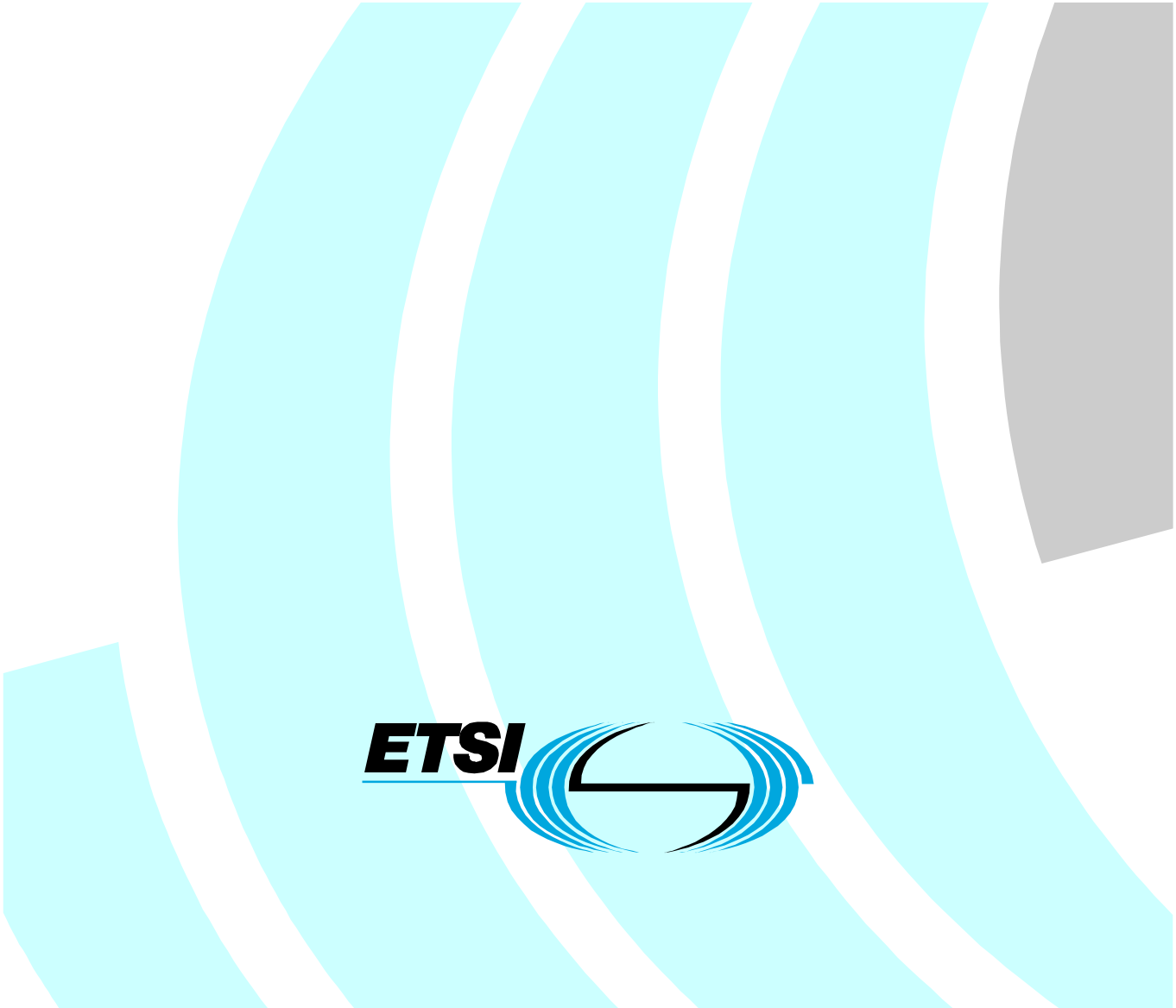
ETSI ES 200 778-4 V1.1.2 (2002-11)

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



Reference
RES/AT-030021-04

Keywords
CLIP, PICS, PSTN, supplementary service, TSS&TP

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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 4 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 Test Suite Structure and Test Purposes (TSS&TP) for both the On-Hook and the Off-Hook Data Transmission over the PSTN Access for Terminal Equipment (TE).

In order to stay aligned with the structure of the base standard, the present document specifies test purposes for FSK signalling while the DTMF test purposes are included in the annex A.

The present document does not cover the combination of services.

ES 200 778-5 [6] specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma based on the present document.

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

[6] ETSI ES 200 778-5 (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 5: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the user; On-Hook and Off-Hook".

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 9646-1 [5].

Abstract Test Suite (ATS): Refer to ISO/IEC 9646-1 [5].

Implementation Under Test (IUT): Refer to ISO/IEC 9646-1 [5].

Protocol Implementation Conformance Statement (PICS): Refer to ISO/IEC 9646-1 [5].

PICS proforma: Refer to ISO/IEC 9646-1 [5].

Test Purpose (TP): Refer to ISO/IEC 9646-1 [5].

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 200 778-5 [6], ES 200 778-1 [1], ES 200 778-2 [2], EN 300 659-3 [3] and the following apply:

AOC-D	Advice Of Charge During the call
AOC-E	Advice Of Charge at the End of the call
AS	Alerting Signal
ATS	Abstract Test Suite
CCBS	Completion of Calls to Busy Subscriber
CCNR	Completion of Calls on No Reply
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
CNIP	Calling Name Identification Presentation
CNIR	Calling Name Identification Restriction
CR	Call Return
CT	Connection Type
DC	Direct Current
DIT	Display Information Transfer
DL	DataLink
DT-AS	Dual Tone-Alerting Signal
DTMF	Dual Tone Multi-Frequency
FSK	Frequency-Shift Keying
IUT	Implementation Under Test
LE	Local Exchange
LR	Line Reversal
LR+DT-AS	Line Reversal followed by a Dual Tone-Alerting Signal
MSN	Multiple Subscriber Number
MWI	Message Waiting Indication
PHY	PHYsical layer
PICS	Protocol Implementation Conformance Statement
PRES	PRESentation
PSTN	Public Switched Telephone Network
RP-AS	Ringing Pulse Alerting Signal

SMS	Short Message Service
SUB	SUB-addressing
TAS	TE Alerting Signal
TE	Terminal Equipment
TE-ACK	TE ACKnowledgement Signal
TP	Test Purpose
TSS	Test Suite Structure

4 Test Suite Structure (TSS)

The following Test Suite Structure (TSS) applies only to signalling behaviour using FSK data transmission. The test purposes for DTMF data transmission are specified in annex A.

Subscriber Line Protocol	**Group Nr**
PHY	
On-hook	01
Off-hook	02
DL	
On-hook	03
Off-hook	04
PRES	
CLIP/CLIR	
Mandatory parameters	05
Optional parameters	06
CNIP/CNIR	
Mandatory parameters	07
Optional parameters	08
AOC-D and AOC-E	
Mandatory parameters	09
Optional parameters	10
SMS	
Mandatory parameters	11
Optional parameters	12
CCBS/CCNR	
Mandatory parameters	13
Optional parameters	14
MWI	
Mandatory parameters	15
Optional parameters	16
MSN, SUB, CT	
Mandatory parameters	17
Optional parameters	18
Call Return	
Mandatory parameters	19
Optional parameters	20
Alarm Call	
Mandatory parameters	21
Optional parameters	22
User Procedure Notification	
Mandatory parameters	23
Optional parameters	24
Monitoring Service	
Mandatory parameters	25
Optional parameters	26
Invalid messages	27

5 Test Purposes (TPs)

5.1 Introduction

For each test requirement a TP is defined.

5.1.1 TP naming convention

TPs are numbered, starting at 001, within each group. Groups are organized according to the TSS. Additional references are added to identify the actual test suite and whether it applies to the user (see table 1).

Table 1: TP identifier naming convention scheme

Identifier: **<Layer>_<SSgroup>_<nnn>**			
<Layer>	=	PHY, DL, PRES:	e.g. "PRES" (for PRESentation)
<PRES_ss>	=	Presentation Layer	
		for a Supplementary Service	e.g. PRES_CNIP
<group>	=	group number	2 digit field representing group reference according to TSS
<nnn>	=	sequential number	(001-999)

5.1.2 Source of TP definition

The TPs are based on ES 200 778-1 [1], ES 200 778-2 [2], and EN 300 659-3 [3].

5.1.3 TP structure

A particular structure has been used and this is illustrated in table 2. This table should be read in conjunction with any TP, i.e. use a TP as an example to fully understand table 2.

Table 2: Structure of a single TP

TP part	Text	Example
Header	<Identifier> CR <Clause number in base EN> CR <selection> CR.	see table 1 clause 4.2.1 of ES 200 778-1 [1] Selection: On-hook supported: PICS: MC.3
Stimulus	Observe that the IUT <precondition> <trigger> *see below for message structure* *or* <goal>	 as an On-hook TE receiving a Call Set Up message
Reaction	<action> <conditions>	correctly receives, etc.
Message structure	Message containing message parameters a) Data Link Message type b) one or several parameters encoded as or including <coding of the field> and back to a or b	Message received containing a) Call Set-Up message type b) Calling Line Identity, etc. encoded as table 8 of EN 300 659-3 [3]

5.1.4 Test strategy

As the base standards ES 200 778-1 [1], ES 200 778-2 [2] and EN 300 659-3 [3] contain no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standards and the PICS specification ES 200 778-3 [4].

The TPs are only based on conformance requirements related to the externally observable behaviour of the IUT, and are limited to conceivable situations to which a real implementation is likely to be faced.

All the test purposes are mandatory unless they have selection criteria. Optional test purposes (with selection criteria) are applicable according to the configuration options of the IUT. A PICS item shall cover the configuration options.

Unless specified:

- all the messages contain at least the mandatory parameters, and the parameters use correct values;
- neither a message nor a parameter, which can lead to a fail or an inconclusive verdict, shall be used.

5.2 Test Purposes for subscriber line protocol

Selection: FSK supported: PICS: MC.1

The following test purposes are intended to check the correct implementation of the protocol over the local loop for display and related services on Access and Terminal equipment.

This protocol consists for the LE of sending messages to the TE, which reacts by activating indicators (e.g. a led) or displaying the received information (calling line Id for example). Except the TE-ACK signal in Off-hook mode (see note), there is no signal sent to the LE indicating the correct reception of the received information.

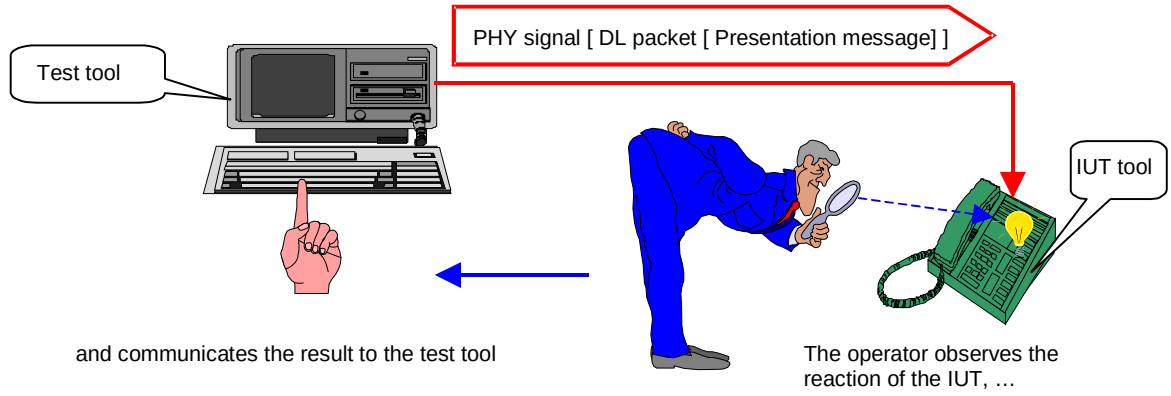
NOTE: The exception is the operation of the physical layer in the case of Off-hook mode where the TE replies with a TE-ACK signal to the alerting signal. In this particular case, the tester can ensure the correct interpretation of the TAS signal sent by receiving the TE-ACK signal from the Terminal.

To ensure the correct reception of the messages by the TE, the test operator shall observe the reaction of the IUT after execution of the test. The operator will than send a signal to the test system (e.g. key Y or N) that reflects the reaction of the IUT on receipt of the message.

A correct reaction of the IUT observed by the test operator would also assume that the TE has received the message.

In the following Physical and DL test purposes, "correctly receives" means that the test operator can observe the correct reaction of the IUT.

In the Presentation test purposes, "displays" means that the indicated parameters were correctly interpreted by the IUT (either by display or sound, etc.).



NOTE: This test method is common to all layers.
The method of displaying depends on the IUT (display on screen, on a printer, on a light, audio message, tone, etc.).
Example (CCBS):
A Call Set-up message is sent to the original calling IUT. In this message, the parameter Call Type is set to CCBS.
It depends on the IUT how to interpret this parameter. Some selected actions:
a) Ringing, as it is usually done. The user will be informed about CCBS call back situation by signalling tones when taking the call (e.g. taking the handset).
b) Special ringing cadence used for CCBS call back only.
c) Ringing and additionally indicating on the screen about CCBS call back situation.

All the presentation test purposes in the present document use the neutral expression "to display" in order to allow an independent description.
Therefore, the expected method of display has to be described prior to the execution of tests.

Figure 1: Manual observation of test result

5.2.1 PHYsical (PHY)

The conformance of the physical layer of the TE under test will therefore be diagnosed by either proper reception or no reception of messages by the IUT at the presentation layer, sent through the physical and the DL layers. Absence of reception of a message may result from no support of the IUT for that particular service or parameter, from the non-conformance of the physical layer of the IUT or from the test purpose itself which is to test the physical layer of the IUT in out of specification ranges.

In case of receipt of a valid message, through a valid DL packet, the IUT shall activate the corresponding indicator. This assumes the proper receipt of the physical signal.

The test operator will evaluate the correct reception of the message, and consequently of the physical signal, by observing the reaction of the IUT.

The final reaction of the IUT is provoked by then presentation layer message, itself correctly embedded in a DL packet. So that to proceed with this test method, a valid Presentation layer message and a valid DL packet shall be chosen. These are generic parameters to be defined before execution of the test purpose, and according to the feature of the IUT.

Two generic data layer signals are defined in the On-hook and in the Off-hook clauses.

The following messages are some examples of generic presentation layer messages, which can be used to execute the physical and DL test purposes; either:

- a minimum content Message Waiting Indicator message (MWI) with only the mandatory parameters contained in that message; this MWI is selected first since it should lead to the easiest detection through the Visual Indicator (on/off); or

- a minimum content Call Set Up for the calling line identity presentation; or

- a minimum content Short Message Service (SMS) message; or
- a minimum content Advice of Charge message.

NOTE: Other "generic" messages may need to be created for testing in the cases where the IUT supports only one very particular service such as Alarm Call.

5.2.1.1 On-Hook (01)

Selection: On-hook supported: PICS: MC.3

5.2.1.1.1 Data Transmission associated with ringing

Clause 4.2.1 of [1**]**
Selection: Data transmission associated with ringing supported: PICS: MC.5

5.2.1.1.1.1 Prior to ringing

Clause 4.2.1.1 of [1**]**
Selection: Prior to ringing data transmission supported: PICS: MC.5.1

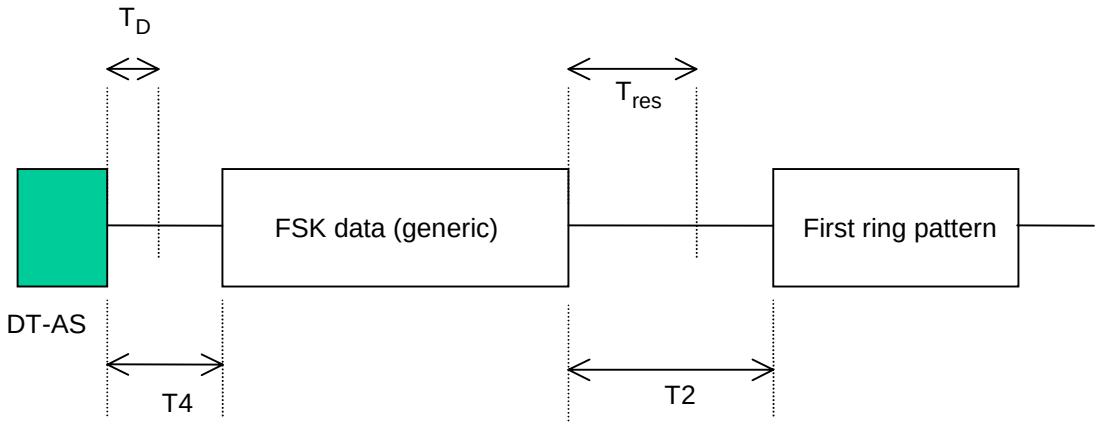


Figure 2: Data transmission prior to ringing - DT-AS

PHY_01_001
Clause 4.2.1.1.1 of [1**]**
Selection: DT-AS supported, PICS: Alert.1
Observe that the IUT, in idle state, receiving the physical DT-AS signals with T4 and T2 with the values **min/min** (see table 3),
correctly receives the transmitted data.

PHY_01_002
Clause 4.2.1.1.1 of [1**]**
Selection: DT-AS supported, PICS: Alert.1
Observe that the IUT, in idle state, receiving the physical DT-AS signals with T4 and T2 with the values **max/min** (see table 3),
correctly receives the transmitted data.

PHY_01_003
Clause 4.2.1.1.1 of [1**]**
Selection: DT-AS supported, PICS: Alert.1
Observe that the IUT, in idle state, receiving the physical DT-AS signals with T4 and T2 with the values **min/max** (see table 3),
correctly receives the transmitted data.

PHY_01_004
Clause 4.2.1.1.1 of [1**]**
Selection: DT-AS supported, PICS: Alert.1
Observe that the IUT, in idle state, receiving the physical DT-AS signals with T4 and T2 with the values **max/max** (see table 3),
correctly receives the transmitted data.

Table 3: T4/T2 DT-AS timers values

Parameter	min/min	max/min	min/max	max/max
T4 timer value - ms	45	500	45	500
T2 timer value - ms	200	200	500	500

PHY_01_005
Clause 4.2.3.1 of [1**]**
Selection: DT-AS supported, PICS: Alert.1
Observe that the IUT, in idle state, receiving a DT-AS specified by **DT-AS1** in table 4,
correctly receives the transmitted data.

PHY_01_006
Clause 4.2.3.1 of [1**]**
Selection: DT-AS supported, PICS: Alert.1
Observe that the IUT, in idle state, receiving a DT-AS specified by **DT-AS2** in table 4,
correctly receives the transmitted data.

Table 4: DT-AS alerting signal

Parameter	DT-AS1	DT-AS2
Lower frequency level	-34 dBV	-9 dBV
Higher Frequency level	-40 dBV	-15 dBV
Frequency - Hz	2 130 and 2 750	2 130 and 2 750
Duration - ms	100	100

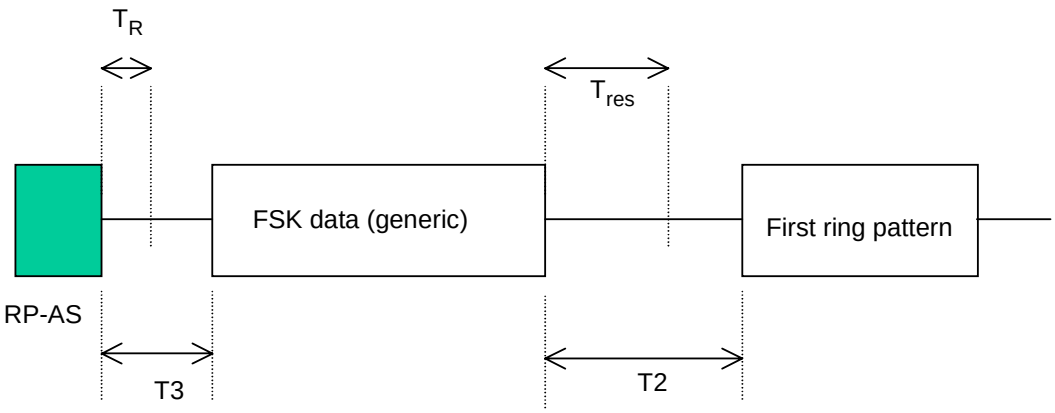


Figure 3: Data transmission prior to ringing - RP-AS

PHY_01_007
Clause 4.2.1.1.2 of [1**]**
Selection: RP-AS supported, PICS: Alert.2
Observe that the IUT, in idle state, receiving the physical RP-AS signals with T3 and T2 with the values **min/min** (see table 5),
correctly receives the transmitted data.

PHY_01_008
Clause 4.2.1.1.2 of [1**]**
Selection: RP-AS supported, PICS: Alert.2
Observe that the IUT, in idle state, receiving the physical RP-AS signals with T3 and T2 with the values **max/min** (see table 5),
correctly receives the transmitted data.

PHY_01_009
Clause 4.2.1.1.2 of [1**]**
Selection: RP-AS supported, PICS: Alert.2
Observe that the IUT, in idle state, receiving the physical RP-AS signals with T3 and T2 with the values **min/max** (see table 5),
correctly receives the transmitted data.

PHY_01_010
Clause 4.2.1.1.2 of [1**]**
Selection: RP-AS supported, PICS: Alert.2
Observe that the IUT, in idle state, receiving the physical RP-AS signals with T3 and T2 with the values **max/max** (see table 5),
correctly receives the transmitted data.

Table 5: T3/T2 RP-AS timers values

Parameter	min/min	max/min	min/max	max/max
T3 timer value - ms	500	800	500	800
T2 timer value - ms	200	200	500	500

PHY_01_011
Clause 4.2.3.2 of [1**]**
Selection: RP-AS supported PICS: Alert.2
Observe that the IUT, in idle state, receiving an RP-AS specified by RP-AS1 in table 6,
correctly receives the transmitted data.

PHY_01_012
Clause 4.2.3.2 of [1**]**
Selection: RP-AS supported PICS: Alert.2
Observe that the IUT, in idle state, receiving an RP-AS specified by RP-AS2 in table 6,
correctly receives the transmitted data.

PHY_01_013
Clause 4.2.3.2 of [1**]**
Selection: RP-AS supported PICS: Alert.2
Observe that the IUT, in idle state, receiving an RP-AS specified by RP-AS3 in table 6,
correctly receives the transmitted data.

Table 6: RP-AS physical parameters

Parameter	RP-AS1	RP-AS2	RP-AS3
Ring Frequency - Hz	25/50	25/50	25/50
Ring voltage - V rms (between A-wire, B-wire)	90	30	50
Ring duration - ms	200	300	200
NOTE: The supplier should state whether the TE is intended to operate with ringing frequency of 25 Hz, 50 Hz or both.			

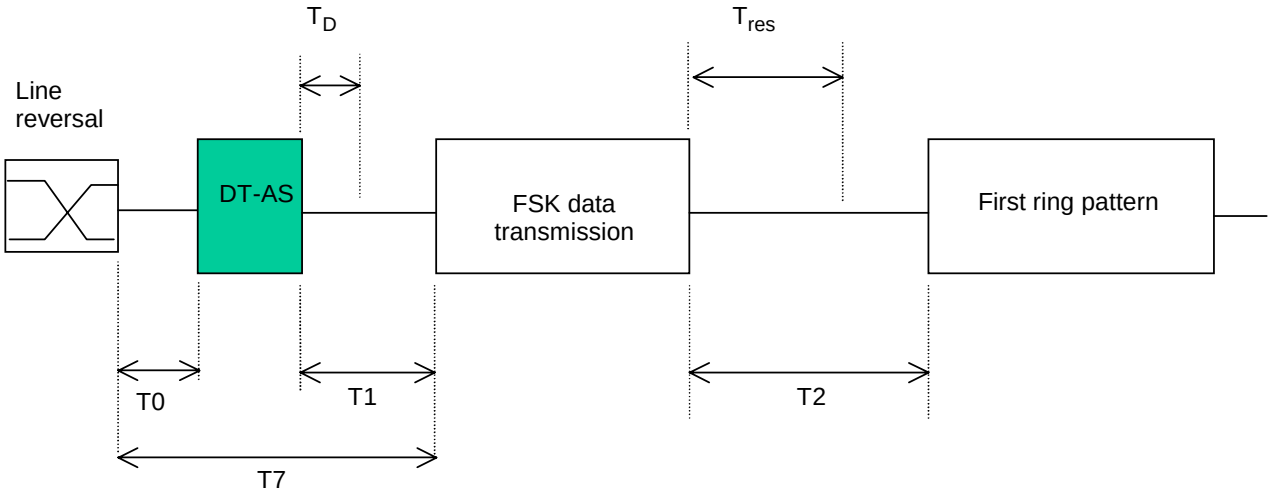


Figure 4: Data transmission prior to ringing - LR + DT-AS signal

PHY_01_014
Clause 4.2.1.1.3 of [1**]**
Selection: LR+DT-AS supported PICS: Alert.3
Observe that the IUT, in idle state, receiving the physical signals with T0, T1 and T2 with the values as **LR_T1** (see table 7),
correctly receives the transmitted data.

PHY_01_015
Clause 4.2.1.1.3 of [1**]**
Selection: LR+DT-AS supported PICS: Alert.3
Observe that the IUT, in idle state, receiving the physical signals with T0, T1 and T2 with the values as **LR_T2** (see table 7),
correctly receives the transmitted data.

PHY_01_016
Clause 4.2.1.1.3 of [1**]**
Selection: LR+DT-AS supported PICS: Alert.3
Observe that the IUT, in idle state, receiving the physical signals with T0, T1 and T2 with the values as **LR_T3** (see table 7),
correctly receives the transmitted data.

PHY_01_017
Clause 4.2.1.1.3 of [1**]**
Selection: LR+DT-AS supported PICS: Alert.3
Observe that the IUT, in idle state, receiving the physical signals with T0, T1 and T2 with the values as **LR_T4** (see table 7),
correctly receives the transmitted data.

Table 7: LR + DT-AS timers values

Parameter	LR_T1	LR_T2	LR_T3	LR_T4
T0 timer value - ms	100	550	100	150
T1 timer value - ms	50	50	500	100
DT-AS duration - ms	100	100	100	100
Resulting T7 duration = (ms)	250	700	700	350
T2 timer value - ms	200	200	200	500

PHY_01_018
Clause 4.2.1.1.3 of [1**]**
Selection: LR+DT-AS supported PICS: Alert.3
Observe that the IUT, in idle state, receiving a LR + DT-AS specified by **LR1** in table 8,
correctly receives the transmitted data.

PHY_01_019
Clause 4.2.1.1.3 of [1**]**
Selection: LR+DT-AS supported PICS: Alert.3
Observe that the IUT, in idle state, receiving a LR + DT-AS specified by **LR2** in table 8,
correctly receives the transmitted data.

Table 8: LR + DT-AS physical parameters

Parameter	LR1	LR2
Reversal	+50 V to -50 V	+50 V to -50 V
Dual Tone: Frequency	2 130 Hz and 2 750 Hz	2 140 Hz and 2 763 Hz
Dual Tone: Level	-30 dBV	-10 dBV
Dual Tone: Twist	6 dB	6 dB

5.2.1.1.1.2 During ringing

Selection: During ringing data transmission supported: PICS: MC.5.2

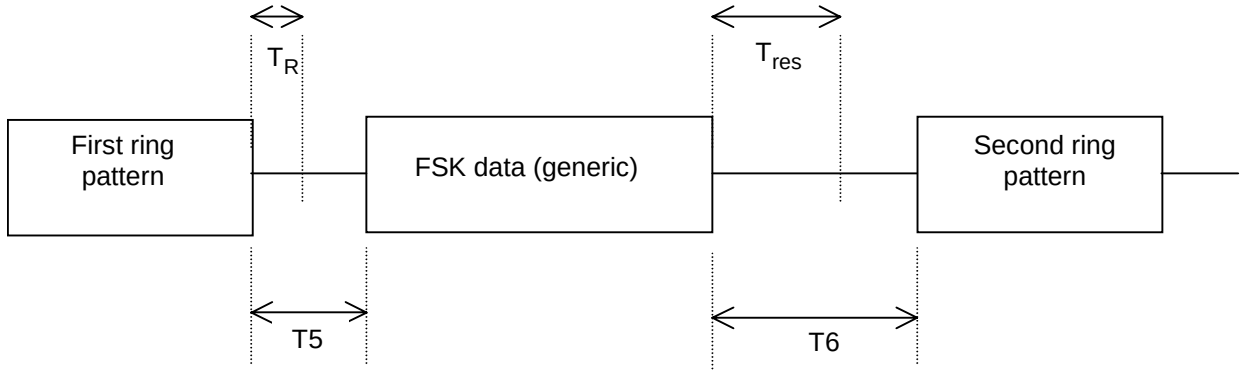


Figure 5: Data transmission during ringing

PHY_01_020
Clause 4.2.1.2 of [1**]**
Observe that the IUT, in idle state, receiving the physical ringing signals with T5, T6 and Ring duration with the values as **R_T1** (see table 9),
correctly receives the transmitted data.

PHY_01_021
Clause 4.2.1.2 of [1**]**
Observe that the IUT, in idle state, receiving the physical ringing signals with T5, T6 and Ring duration with the values as **R_T2** (see table 9),
correctly receives the transmitted data.

PHY_01_022
Clause 4.2.1.2 of [1**]**
Observe that the IUT, in idle state, receiving the physical ringing signals with T5, T6 and Ring duration with the values as **R_T3** (see table 9),
correctly receives the transmitted data.

PHY_01_023
Clause 4.2.1.2 of [1**]**
Observe that the IUT, in idle state, receiving the physical ringing signals with T5, T6 and Ring duration with the values as **R_T4** (see table 9),
correctly receives the transmitted data.

Table 9: Ringing timers values

Parameter	R_T1	R_T2	R_T3	R_T4
T5 timer value - ms	500	1 000	2 000	1 000
T6 timer value - ms	500	500	500	200
Ring duration - ms	400	1 000	1 200	1 000

PHY_01_024
Clause 4.2.1.2 of [1**]**
Observe that the IUT, in idle state, receiving an initial ring pattern specified by **RC1** in table 10,
correctly receives the transmitted data.

PHY_01_025
Clause 4.2.1.2 of [1**]**
Observe that the IUT, in idle state, receiving an initial ring pattern specified by **RC2** in table 10,
correctly receives the transmitted data.

PHY_01_026
Clause 4.2.1.2 of [1**]**
Observe that the IUT, in idle state, receiving an initial ring pattern specified by **RC3** in table 10,
correctly receives the transmitted data.

Table 10: Initial ring physical parameters

Parameter	RC1	RC2	RC3
Voltage - V rms	30	50	90
Frequency - Hz	25/50	25/50	25/50
NOTE: The supplier should state whether the TE is intended to operate with ringing frequency of 25 Hz, 50 Hz or both.			

5.2.1.1.2 Data Transmission not associated with ringing

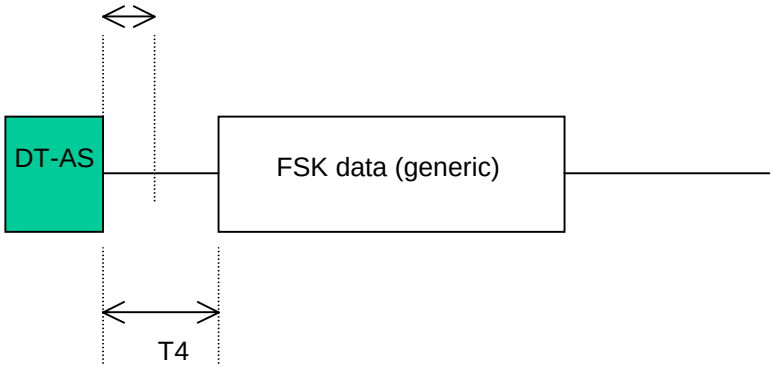


Figure 6: Data transmission not associated to ringing

Clause 4.2.2 of [1**]**
Selection: Data transmission not associated with ringing supported: PICS: MC.6

The test purposes defined in clause 5.2.1.1.1.1 data transmission associated to ringing, prior to ringing, shall apply.

5.2.1.1.3 FSK physical parameters (Idle-line signalling state)

PHY_01_027
Clause 4.1.5 of [1**]**
Selection: DT-AS supported, PICS: Alert.1
Observe that the IUT, in Idle-line signalling state,
correctly receives the transmitted data specified by **FSK1** in table 11.

PHY_01_028
Clause 4.1.5 of [1**]**
Selection: DT-AS supported, PICS: Alert.1
Observe that the IUT, in Idle-line signalling state,
correctly receives the transmitted data specified by **FSK2** in table 11.

PHY_01_029
Clause 4.1.5 of [1**]**
Selection: DT-AS supported, PICS: Alert.1
Observe that the IUT, in Idle-line signalling state,
correctly receives the transmitted data specified by **FSK3** in table 11.

PHY_01_030
Clause 4.1.5 of [1**]**
Selection: DT-AS supported, PICS: Alert.1
Observe that the IUT, in Idle-line signalling state,
correctly receives the transmitted data specified by **FSK4** in table 11.

Table 11: FSK physical parameters

Parameter	FSK1	FSK2	FSK3	FSK4
Mark frequency (logic 1) - Hz	1 300	1 280,5	1 319,5	1 300
Space frequency (logic 0) - Hz	2 100	2 068,5	2 131,5	2 100
Mark level (between A-wire, B-wire)	-20 dBV	-30 dBV	-8 dBV	-55 dBV
Space level (between A-wire, B-wire)	-20 dBV	-36 dBV	-14 dBV	-55 dBV
Interfering signal power level referred to the power level of the signal fundamental frequency and with voice band limited white noise	none	-25 dB	-25 dB	none

5.2.1.2 Off-Hook (02)

Selection: Off-hook supported: PICS: MC.4

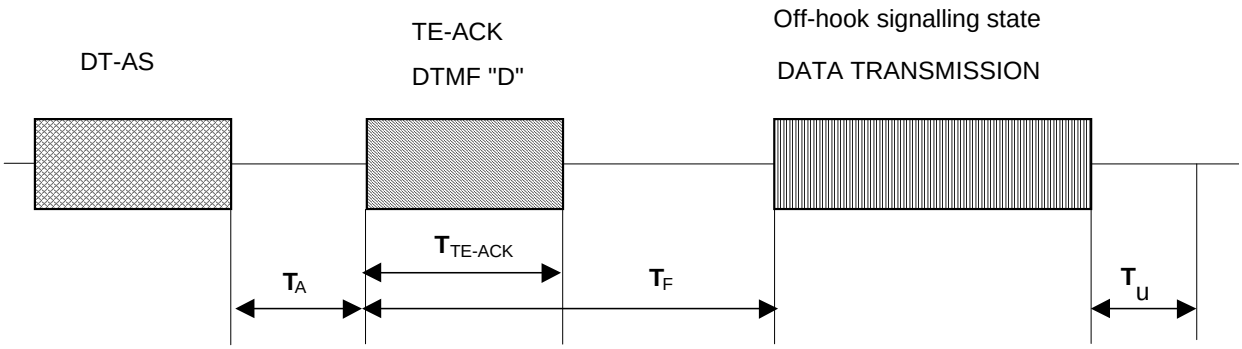


Figure 7: Handshaking sequence and timing requirements

PHY_02_001
Clause 4.3.2 of [2**]**
Observe that the IUT, in the idle state, receiving a DT-AS signal,
correctly mutes the voice path and returns a valid TE-ACK signal within T_A.

NOTE 1: The sending of TE-ACK is considered from the start of the signal.

PHY_02_002
Clause 4.3.2 of [2**]**
Observe that the IUT, in the idle state, receiving a DT-AS as specified in **DT-TAS1** in table 12,
correctly mutes the voice path and returns a valid TE-ACK signal.

PHY_02_003
Clause 4.3.2 of [2**]**
Observe that the IUT, in the idle state, receiving a DT-AS as specified in **DT-TAS2** in table 12,
correctly mutes the voice path and returns a valid TE-ACK signal.

Table 12: DT-AS alerting signal

Parameter	DT-TAS1	DT-TAS2
Lower frequency level	-29 dBV	-12 dBV
Higher Frequency level	-35 dBV	-18 dBV
Frequency - Hz	2 130 and 2 750	2 130 and 2 750
Duration - ms	80	80

PHY_02_004
Clause 4.3.3 start time of [2**]**
Observe that the IUT, in the Off-hook signalling state, receiving a valid FSK signal 95 ms after having sent the TE-ACK signal
correctly receives the transmitted data.

NOTE 2: The receiving of the FSK signal is considered from the start of FSK data transmission.

PHY_02_005
Clause 4.3.3 start time of [2**]**
Observe that the IUT, in the Off-hook signalling state, receiving a valid FSK signal 290 ms (maximum T_F timer value) after having sent the TE-ACK signal,
correctly receives the transmitted data.

NOTE 3: The receiving of the FSK signal is considered from the start of FSK data transmission.

PHY_02_006
Clause 4.3.1 Time out of [2**]**
Observe that the IUT, in the Off-hook signalling state, after having sent the TE-ACK signal and not receiving a valid FSK signal within time TF from the start of the TE-ACK signals,
does not correctly receive the transmitted data and restores the voice path within T_U.

PHY_02_007
Clause 4.4 of [2**]**
Observe that the IUT, in the Off-hook signalling state,
correctly receives the transmitted data specified by **FSK1** in table 13.

PHY_02_008
Clause 4.4 of [2**]**
Observe that the IUT, in the Off-hook signalling state,
correctly receives the transmitted data specified by **FSK2** in table 13.

PHY_02_009
Clause 4.4 of [2**]**
Observe that the IUT, in the Off-hook signalling state,
correctly receives the transmitted data specified by **FSK2** in table 13.

Table 13: FSK physical parameters

Parameter	FSK1	FSK2	FSK3
Mark frequency (logic 1) - Hz	1 300	1 280,5	1 319,5
Space frequency (logic 0) - Hz	2 100	2 068,5	2 131,5
Mark level (between A-wire, B-wire)	-20 dBV	-27 dBV	-11 dBV
Space level (between A-wire, B-wire)	-20 dBV	-33 dBV	-17 dBV
Line feed Resistor value. R1	1 000 Ω	2 000 Ω (see note)	500 Ω
Interfering signal power level referred to the power level of the signal fundamental frequency and with a voice band limited white noise	none	-25 dB	-25 dB
NOTE: It is recognized that line currents corresponding to a line feed resistance of up to 2 800 Ω can be expected in certain networks in Europe.			

PHY_02_010
Clause 4.3.1 of [2**]**
Observe that the IUT, in the Off-hook Signalling state, having received a valid FSK signal,
correctly restores the voice path within T_U.

5.2.2 DataLink (DL)

The DataLink Test Purposes assume that a proper physical layer has been set-up, that the DataLink layer behaviour is independent of the means used to set-up that physical layer and that a minimum generic presentation layer message recognizable by the IUT is carried on top of the data link layer to allow diagnostic of the data layer having properly operated or not.

5.2.2.1 On-Hook (03)

Selection: On-hook supported PICS: MC.3

5.2.2.1.1 Valid Data Link Signals

DL_03_001
Clause 5 of [1**]**
Observe that IUT being presented with a valid data link structure where all data fields of clause 5 [1] are fulfilled including a mark signal of 180 mark-bits duration,
receives the valid presentation layer message.

DL_03_002
Clause 5 of [1**]**
Observe that IUT being presented with a valid data link structure where all data fields of clause 5 [1] are fulfilled including a mark signal of 80 mark-bits duration,
receives the valid presentation layer message.

5.2.2.2 Off-Hook (04)

Selection: Off-hook supported PICS: MC.4

5.2.2.2.1 Valid Data Link Signals

Those test purposes apply to FSK as well as to a DTMF means of transmission.

DL_04_001
Clause 5 of [2**]**
Observe that IUT being presented with a valid data link structure where all data fields of clause 5 are fulfilled with no channel seizure and including a mark signal of 80 mark-bits nominal duration,
receives the valid presentation layer message.

DL_04_002
Clause 5.3.2 of [2**]**
Observe that IUT, being presented with an unknown message type,
discards the message and restore the voice path.

DL_04_003
Clause 5.3.2 of [2**]**
Observe that IUT, being presented with an unknown message type,
indicates an error, and restore the voice path.

DL_04_004
Clause 5.6 of [2**]**
Observe that IUT being presented with an invalid data link structure where the received check sum does not match the content of the message,
does not display the otherwise valid presentation layer message, identifies the incorrect checksum and restores the voice path.

5.2.3 PRESentation (PRES)

All test purposes are applicable to On-hook and Off-hook operations with the following exceptions:

- CCBS/CCNR which is defined only for On-hook operation;
- Call Return which is defined only for Off-hook operation.

The test purposes of the presentation layer assume that the underlying layers physical and data link have been properly set-up and the test result does not depend on the actual way the physical layer was set up (On-hook/Off-hook).

In order to limit the number of test cases, the two extreme cases of number of parameters in the presentation layer message type have been considered: the case where only the mandatory message parameter(s) are presented to the IUT and the case where the complete set of parameters are presented to the IUT; considering that it is acceptable for the IUT to support part of the list of the optional parameters attached to a given service, and that a parameter unknown to the IUT will simply be dropped and will not affect the proper reception of the known parameters, the maximum parameter message is the simplest way of testing the conformance of the IUT in one test case. The result of the test will of course depend on the actual support of a given parameter by the IUT.

It is not mandatory to an IUT to support all supplementary services defined in annex B of EN 300 659-3 [3]; however, once an IUT declares in the PICS support of a given supplementary service, then the support of some parameters become mandatory while the support of others is optional.

Test Purposes assume that the IUT has received a generic physical layer Set-Up (to reach the signalling idle state) corresponding either to the On-hook mode or to the Off-hook mode, a generic Data Link layer initialization prior to receiving the PRESentation message described in the test Purpose.

NOTE 1: In the case of CCBS, only the generic physical layer Set-Up corresponding to the On-hook mode is assumed to be received.

NOTE 2: In the case of Call Return, only the generic physical layer Set-Up corresponding to the Off-hook mode of operation is assumed to have been received.

5.2.3.1 Calling Line Identification Presentation (CLIP)/Calling Line Identification Restriction (CLIR)

Selection: CLIP/CLIR supported PICS: SC.1 OR SC.2

5.2.3.1.1 Mandatory (05)

PRES_CLIP05_001
Annex B of [3**]**
Selection: CLIP supported PICS: SC.1
Observe that the IUT having received a Call Set-Up message with a single parameter Calling Line Identity,
displays the Calling Line Identity.

PRES_CLIP05_002
Annex B of [3**]**
Selection: CLIR supported PICS: SC.2
Observe that the IUT having received a Call Set-Up message with a single parameter Reason for absence of calling line identity,
displays the reason for the absence of calling line identity.

PRES_CLIP05_003
Clause 5.2.1 and annex B of [3**]**
Selection: CLIP supported PICS: SC.1
Observe that the IUT having received a Call Set-Up message with a set of parameters listed below:
date and time;
calling line identity;
called line identity;
complementary calling line identity;
call type;
first called line identity;
type of forwarded call;
type of calling user;
redirecting number;
network provider identity;
carrier identity;
selection of terminal function;
display information;
displays at least the Calling Line Identity.

PRES_CLIP05_004
Clause 5.2.1 and annex B of [3**]**
Selection: CLIR supported PICS: SC.2
Observe that the IUT having received a Call Set-Up message with a set of parameters listed below:
date and time;
reason for absence of calling line identity;
called line identity;
complementary calling line identity;
call type;
first called line identity;
type of forwarded call;
type of calling user;
redirecting number;
network provider identity;
carrier identity;
selection of terminal function;
display information;
displays at least the Reason for absence of Calling Line Identity.

5.2.3.1.2 Optional (06)

PRES_CLIP06_005
Clause 5.2.1 and annex B of [3**]**
Selection: PICS: CallSetUp.1
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Line Identity and single optional parameter date and time,
displays the sent parameter(s).

PRES_CLIP06_006
Clause 5.2.1 and annex B of [3**]**
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Line Identity and a single optional parameter: date and time
displays the sent parameter(s) Reason for Absence of Calling Line Identity and Date and Time.

PRES_CLIP06_007
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.4
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Line Identity and single optional parameter Called Line Identity,
displays the sent parameter(s).

PRES_CLIP06_008
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.4
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Line Identity and single optional parameter Called Line Identity,
displays the sent parameter(s).

PRES_CLIP06_009
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.7
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Line Identity and a single optional parameter Complementary Calling Line Identity,
displays the sent parameter(s).

PRES_CLIP06_010
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.7
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Line Identity and single optional parameter Complementary Calling Line Identity,
displays the sent parameter(s).

PRES_CLIP06_011
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.8
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Line Identity and a single optional parameter Call Type,
displays the sent parameter(s).

PRES_CLIP06_012
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.8
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Line Identity and single optional parameter Call Type,
displays the sent parameter(s).

PRES_CLIP06_013
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.9
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Line Identity and a single optional parameter First Called Line Identity,
displays the sent parameter(s).

PRES_CLIP06_014
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.9
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Line Identity and single optional parameter First Called Line Identity,
displays the sent parameter(s).

PRES_CLIP06_015
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.11
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Line Identity and a single optional parameter Type of Forwarded Call,
displays the sent parameter(s).

PRES_CLIP06_016
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.11
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Line Identity and single optional parameter Type of Forwarded Call,
displays the sent parameter(s).

PRES_CLIP06_017
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.12
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Line Identity and a single optional parameter Type of Calling User,
displays the sent parameter(s).

PRES_CLIP06_018
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.12
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Line Identity and single optional parameter Type of Calling User,
displays the sent parameter(s).

PRES_CLIP06_019
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.13
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Line Identity and a single optional parameter Redirecting Number,
displays the sent parameter(s).

PRES_CLIP06_020
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.13
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Line Identity and single optional parameter Redirecting Number,
displays the sent parameter(s).

PRES_CLIP06_021
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.14
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Line Identity and a single optional parameter Network Provider Identity,
displays the sent parameter(s).

PRES_CLIP06_022
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.14
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Line Identity and single optional parameter Network Provider Identity,
displays the sent parameter(s).

PRES_CLIP06_023
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.15
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Line Identity and a single optional parameter Carrier Identity,
displays the sent parameter(s).

PRES_CLIP06_024
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.15
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Line Identity and single optional parameter Carrier Identity,
displays the sent parameter(s).

PRES_CLIP06_025
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.16
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Line Identity and a single optional parameter Selection of Terminal Function,
displays the sent parameter(s).

PRES_CLIP06_026
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.16
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Line Identity and single optional parameter Selection of Terminal Function,
displays the sent parameter(s).

PRES_CLIP06_027
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.17
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Line Identity and a single optional parameter Display Information,
displays the sent parameter(s).

PRES_CLIP06_028
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.17
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Line Identity and single optional parameter Display Information,
displays the sent parameter(s).

5.2.3.2 Calling Name Identification Presentation (CNIP)/Calling Name Identification Restriction (CNIR)

Selection: CNIP/CNIR supported PICS SC.3 OR SC.4

5.2.3.2.1 Mandatory (07)

PRES_CNIP07_001
Annex B of [3**]**
Selection: CNIP supported PICS SC.3
Observe that the IUT having received a Call Set-Up message with a single parameter Calling Party Name,
displays the Calling Party Name.

PRES_CNIP07_002
Annex B of [3**]**
Selection: CNIR supported PICS SC.4
Observe that the IUT having received a Call Set-Up message with a single parameter Reason for absence of calling party name,
displays the reason for the absence of Calling Party Name.

PRES_CNIP07_003
Annex B of [3**]**
Selection: CNIP supported PICS SC.3
Observe that the IUT having received a Call Set-Up message with a set of parameters listed below including Calling Party Name:

date and time;
called line identity;
calling party name;
complementary calling line identity;
call type;
first called line identity;
type of forwarded call;
type of calling user;
redirecting number;
network provider identity;
carrier identity;
selection of terminal function;
display information;
displays at least the Calling Party Name.

PRES_CNIP07_004
Annex B of [3**]**
Selection: CNIR supported PICS SC.4
Observe that the IUT having received a Call Set-Up with a set of parameters listed below including Reason for absence of Calling Party Name:

date and time;
called line identity;
Reason for absence of calling party name;
complementary calling line identity;
call type;
first called line identity;
type of forwarded call;
type of calling user;
redirecting number;
network provider identity;
carrier identity;
selection of terminal function;
display information;
displays at least the Reason for absence of Calling Party Name.

5.2.3.2.2 Optional (08)

PRES_CNIP08_005
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.5 or CallSetup.6
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Party Name and single optional parameter date and time,

displays the sent parameter(s).

PRES_CNIP08_006
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.5 or CallSetup.6
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Party Name and single optional parameter date and time,

displays the sent parameter(s).

PRES_CNIP08_007
Clause 5.2.1 and annex B of [3**]**
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Party Name and single optional parameter Called Line Identity,

displays the sent parameter(s).

PRES_CNIP08_008
Clause 5.2.1 and annex B of [3**]**
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Party Name and single optional parameter Called Line Identity,
displays the sent parameter(s).

PRES_CNIP08_009
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.7
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Party Name and a single optional parameter Complementary Calling Line Identity,
displays the sent parameter(s).

PRES_CNIP08_010
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.7
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Party Name and single optional parameter Complementary Calling Line Identity,
displays the sent parameter(s).

PRES_CNIP08_011
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.8
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Party Name and a single optional parameter Call Type,
displays the sent parameter(s).

PRES_CNIP08_012
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.8
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Party Name and single optional parameter Call Type,
displays the sent parameter(s).

PRES_CNIP08_013
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.9
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Party Name and a single optional parameter First Called Line Identity,
displays the sent parameter(s).

PRES_CNIP08_014
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.9
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Party Name and single optional parameter First Called Line Identity,
displays the sent parameter(s).

PRES_CNIP08_015
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.11
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Party Name and a single optional parameter Type of Forwarded Call,
displays the sent parameter(s).

PRES_CNIP08_016
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.11
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Party Name and single optional parameter Type of Forwarded Call,
displays the sent parameter(s).

PRES_CNIP08_017
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.12
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Party Name and a single optional parameter Type of Calling User,
displays the sent parameter(s).

PRES_CNIP08_018
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.12
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Party Name and single optional parameter Type of Calling User,
displays the sent parameter(s).

PRES_CNIP08_019
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.13
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Party Name and a single optional parameter Redirecting Number,
displays the sent parameter(s).

PRES_CNIP08_020
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.13
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Party Name and single optional parameter Redirecting Number,
displays the sent parameter(s).

PRES_CNIP08_021
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.14
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Party Name and a single optional parameter Network Provider Identity,
displays the sent parameter(s).

PRES_CNIP08_022
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.14
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Party Name and single optional parameter Network Provider Identity,
displays the sent parameter(s).

PRES_CNIP08_023
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.15
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Party Name and a single optional parameter Carrier Identity,
displays the sent parameter(s).

PRES_CNIP08_024
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.15
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Party Name and single optional parameter Carrier Identity,
displays the sent parameter(s).

PRES_CNIP08_025
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.16
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Party Name and a single optional parameter Selection of Terminal Function,
displays the sent parameter(s).

PRES_CNIP08_026
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.16
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Party Name and single optional parameter Selection of Terminal Function,
displays the sent parameter(s).

PRES_CNIP08_027
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.17
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Calling Party Name and a single optional parameter Display Information,
displays the sent parameter(s).

PRES_CNIP08_028
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.17
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Reason for absence of Calling Party Name and single optional parameter Display Information,
displays the sent parameter(s).

5.2.3.3 Advice Of Charge During the call (AOC-D), Advice Of Charge at the End of the call (AOC-E)

Selection: AOC supported PICS SC.5 OR SC.6

All the test purposes in this group are applicable to AOC-D and AOC-E. Consequently, for each test purpose, two corresponding test cases shall be produced: one for AOC-D and one for AOC-E.

5.2.3.3.1 Mandatory (09)

PRES_AOCDE09_001
Annex B of [3**]**
Observe that the IUT having received an Advice of Charge message with a single parameter Charge,
displays the Charge information.

PRES_AOCDE09_002
Clause 5.2.3 and annex B of [3**]**
Observe that the IUT having received an Advice of Charge message with a set of parameters including Charge and listed below:
date and time;
calling line identity;
called line identity;
complementary calling line identity;
charge;
additional charge;
duration of the call;
network provider identity;
carrier identity;
selection of terminal function;
display information;
displays at least the charge information.

5.2.3.3.2 Optional (10)

PRES_AOCDE10_003
Clause 5.2.3 and annex B of [3**]**
Selection: PICS AOC.1
Observe that the IUT having received an Advice Of Charge message with the mandatory parameter Charge and the single optional parameter Date and Time,
displays the sent parameter(s).

PRES_AOCDE10_004
Clause 5.2.3 and annex B of [3**]**
Selection: PICS AOC.2
Observe that the IUT having received an Advice Of Charge message with the mandatory parameter Charge and the single optional parameter Calling Line Identity,
displays the sent parameter(s).

PRES_AOCDE10_005
Clause 5.2.3 and annex B of [3**]**
Selection: PICS AOC.3
Observe that the IUT having received an Advice Of Charge message with the mandatory parameter Charge and the single optional parameter Called Line Identity,
displays the sent parameter(s).

PRES_AOCDE10_006
Clause 5.2.3 and annex B of [3**]**
Selection: PICS AOC.5
Observe that the IUT having received an Advice Of Charge message with the mandatory parameter Charge and the single optional parameter Complementary Calling Line Identity,
displays the sent parameter(s).

PRES_AOCDE10_007
Clause 5.2.3 and annex B of [3**]**
Selection: PICS AOC.6
Observe that the IUT having received an Advice Of Charge message with the mandatory parameter Charge and the single optional parameter Additional charge,
displays the sent parameter(s).

PRES_AOCDE10_008
Clause 5.2.3 and annex B of [3**]**
Selection: PICS AOC.7
Observe that the IUT having received an Advice Of Charge message with the mandatory parameter Charge and the single optional parameter Duration of the Call,
displays the Charge and the Duration of the Call parameters.

PRES_AOCDE10_009
Clause 5.2.3 and annex B of [3**]**
Selection: PICS AOC.8
Observe that the IUT having received an Advice Of Charge message with the mandatory parameter Charge and the single optional parameter Network Provider Identity,
displays the sent parameter(s).

PRES_AOCDE10_010
Clause 5.2.3 and annex B of [3**]**
Selection: PICS AOC.9
Observe that the IUT having received an Advice Of Charge message with the mandatory parameter Charge and the single optional parameter Carrier Identity,
displays the sent parameter(s).

PRES_AOCDE10_011
Clause 5.2.3 and annex B of [3**]**
Selection: PICS AOC.10
Observe that the IUT having received an Advice Of Charge message with the mandatory parameter Charge and the single optional parameter Selection of Terminal Function,
displays the sent parameter(s).

PRES_AOCDE10_012
Clause 5.2.3 and annex B of [3**]**
Selection: PICS AOC.11
Observe that the IUT having received an Advice Of Charge message with the mandatory parameter Charge and the single optional parameter Display Information,
displays the sent parameter(s).

5.2.3.4 Short Message Service (SMS)

Selection: SMS supported PICS: SC.7

5.2.3.4.1 Mandatory (11)

PRES_SMS11_001
Annex B of [3**]**
Observe that the IUT having received a Short Message Service message with a single mandatory parameter Display Information
displays the Display Information.

PRES_SMS11_002
Annex B of [3**]**
Observe that the IUT having received a Short Message service message with the mandatory parameter Display Information and a set of parameters listed below:
date and time;
calling line identity;
calling party name;
complementary calling line identity;
type of calling user;
network provider identity;
selection of terminal function;
display information;
displays at least the display information.

5.2.3.4.2 Optional (12)

PRES_SMS12_003
Clause 5.2.4 and annex B of [3**]**
Selection: PICS SMS.1
Observe that the IUT having received a Short Message Service message with the mandatory parameter Display Information and a single parameter Date and Time,
displays the sent parameter(s).

PRES_SMS12_004
Clause 5.2.4 and annex B of [3**]**
Selection: PICS SMS.2
Observe that the IUT having received a Short Message Service message with the mandatory parameter Display Information and a single optional parameter Calling Line Identity,
displays the sent parameter(s).

PRES_SMS12_005
Clause 5.2.4 and annex B of [3**]**
Selection: PICS SMS.3
Observe that the IUT having received a Short Message Service message with the single mandatory parameter Display Information and a single optional parameter Calling Party Name,
displays the sent parameter(s).

PRES_SMS12_006
Clause 5.2.4 and annex B of [3**]**
Selection: PICS SMS.6
Observe that the IUT having received a Short Message Service message with the single mandatory parameter Display Information and a single optional parameter Complementary Calling Line Identity,
displays the sent parameter(s).

PRES_SMS12_007
Clause 5.2.4 and annex B of [3**]**
Selection: PICS SMS.7
Observe that the IUT having received a Short Message Service message with the single mandatory parameter Display Information and a single optional parameter Type of Calling User,
displays the sent parameter(s).

PRES_SMS12_008
Clause 5.2.4 and annex B of [3**]**
Selection: PICS SMS.8
Observe that the IUT having received a Short Message Service message with the single mandatory parameter Display Information and a single optional parameter Network Provider Identity,
displays the sent parameter(s).

PRES_SMS12_009
Clause 5.2.4 and annex B of [3**]**
Selection: PICS SMS.9
Observe that the IUT having received a Short Message Service message with the single mandatory parameter Display Information and a single optional parameter Selection of Terminal Function,
displays the sent parameter(s).

PRES_SMS12_010
Clause 5.2.4 and annex B of [3**]**
Selection: PICS SMS11
Observe that the IUT having received a Short Message Service message with the single mandatory parameter Display Information and a single optional parameter Service Information,
displays the sent parameter(s).

5.2.3.5 Completion of Calls to Busy Subscriber (CCBS)/Completion of Calls on No Reply (CCNR)

Selection: CCBS/CCNR supported PICS: SC.8 OR SC.9

NOTE: CCBS/CCNR applies only to On-hook mode of operation.

5.2.3.5.1 Mandatory (13)

PRES_CCBS13_001
Annex B of [3**]**
Observe that the original calling IUT having received a Call Set-Up message with a single parameter Call Type set to CCBS/CCNR,
displays the Call Type.

PRES_CCBS13_002
Annex B of [3**]**
Observe that the original calling IUT having received a Call Set-Up message with a Call Type parameter set to CCBS/CCNR, and the set of parameters listed below:
date and time;
calling line identity;
called line identity;
network provider identity;
carrier identity;
selection of terminal function;
display information;
displays at least the Call Type.

5.2.3.5.2 Optional (14)

PRES_CCBS14_003
Annex B of [3**]**
Selection: PICS CallSetUp.1
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Call Type set to CCBS/CCNR and a single optional parameter Date and Time,
displays the sent parameter(s).

PRES_CCBS14_004
Annex B of [3**]**
Selection: PICS CallSetUp.2
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Call Type set to CCBS/CCNR and a single optional parameter Calling Line Identity,
displays the sent parameter(s).

PRES_CCBS14_005
Annex B of [3**]**
Selection: PICS CallSetup.4
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Call Type set to CCBS/CCNR and a single optional parameter Called Line Identity,
displays the sent parameter(s).

PRES_CCBS14_006
Annex B of [3**]**
Selection: PICS CallSetup.14.
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Call Type set to CCBS/CCNR and a single optional parameter Network Provider Identity,
displays the sent parameter(s).

PRES_CCBS14_007
Annex B of [3**]**
Selection: PICS CallSetup.15
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Call Type set to CCBS/CCNR and a single optional parameter Carrier Identity,
displays the sent parameter(s).

PRES_CCBS14_008
Annex B of [3**]**
Selection: PICS CallSetup.16
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Call Type set to CCBS/CCNR and a single optional parameter Selection of Terminal Function,
displays the sent parameter(s).

PRES_CCBS14_009
Annex B of [3**]**
Selection: PICS CallSetup.17
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Call Type set to CCBS/CCNR and a single optional parameter Display Information,
displays the sent parameter(s).

5.2.3.6 Message Waiting Indication (MWI)

Selection: MWI supported PICS: SC.10

5.2.3.6.1 Mandatory (15)

PRES_MWI15_001
Annex B of [3**]**
Observe that the IUT having received a Message Waiting Indicator message with a single mandatory parameter Visual Indicator,
displays the Visual Indicator.

PRES_MWI15_002
Annex B of [3**]**
Observe that the IUT having received a Message Waiting Indicator message with a set of parameters listed below:
date and time;
calling line identity;
visual indicator;
message identification;
last message cli;
complementary date and time;
complementary calling line identity;
number of messages;
type of calling user;
network provider identity;
selection of terminal function;
display information;
extension for network operator use;
displays at least the visual indicator.

5.2.3.6.2 Optional (16)

PRES_MWI16_003
Clause 5.2.2 and annex B of [3**]**
Selection: PICS MWI.1
Observe that the IUT having received a Message Waiting Indicator message with a single mandatory parameter Visual Indicator and a single optional parameter Date and Time,
displays the sent parameter(s).

PRES_MWI16_004
Clause 5.2.2 and annex B of [3**]**
Selection: PICS MWI.2
Observe that the IUT having received a Message Waiting Indicator message with a single mandatory parameter Visual Indicator and a single optional parameter Calling Line Identity,
displays the sent parameter(s).

PRES_MWI16_005
Clause 5.2.2 and annex B of [3**]**
Selection: PICS MWI.4
Observe that the IUT having received a Message Waiting Indicator message with a single mandatory parameter Visual Indicator and a single optional parameter Calling Party Name,
displays the sent parameter(s).

PRES_MWI16_006
Clause 5.2.2 and annex B of [3**]**
Selection: PICS MWI.7
Observe that the IUT having received a Message Waiting Indicator message with a single mandatory parameter Visual Indicator and a single optional parameter Message Identification,
displays the sent parameter(s).

PRES_MWI16_007
Clause 5.2.2 and annex B of [3**]**
Selection: PICS MWI.8
Observe that the IUT having received a Message Waiting Indicator message with a single mandatory parameter Visual Indicator and a single optional parameter Last Message CLI,
displays the sent parameter(s).

PRES_MWI16_008
Clause 5.2.2 and annex B of [3**]**
Selection: PICS MWI.9
Observe that the IUT having received a Message Waiting Indicator message with a single mandatory parameter Visual Indicator and a single optional parameter Complementary Date and Time,
displays the sent parameter(s).

PRES_MWI16_009
Clause 5.2.2 and annex B of [3**]**
Selection: PICS MWI.10
Observe that the IUT having received a Message Waiting Indicator message with a single mandatory parameter Visual Indicator and a single optional parameter Complementary Calling Line Identity,
displays the sent parameter(s).

PRES_MWI16_010
Clause 5.2.2 and annex B of [3**]**
Selection: PICS MWI.11
Observe that the IUT having received a Message Waiting Indicator message with a single mandatory parameter Visual Indicator and a single optional parameter Number of Messages,
displays the sent parameter(s).

PRES_MWI16_011
Clause 5.2.2 and annex B of [3**]**
Selection: PICS MWI.12
Observe that the IUT having received a Message Waiting Indicator message with a single mandatory parameter Visual Indicator and a single optional parameter Type of Calling User,
displays the sent parameter(s).

PRES_MWI16_012
Clause 5.2.2 and annex B of [3**]**
Selection: PICS MWI.13
Observe that the IUT having received a Message Waiting Indicator message with a single mandatory parameter Visual Indicator and a single optional parameter Network Provided Identity,
displays the sent parameter(s).

PRES_MWI16_013
Clause 5.2.2 and annex B of [3**]**
Selection: PICS MWI.14
Observe that the IUT having received a Message Waiting Indicator message with a single mandatory parameter Visual Indicator and a single optional parameter Selection of Terminal Function,
displays the sent parameter(s).

PRES_MWI16_014
Clause 5.2.2 and annex B of [3**]**
Selection: PICS MWI.15
Observe that the IUT having received a Message Waiting Indicator message with a single mandatory parameter Visual Indicator and a single optional parameter Display Information,
displays the sent parameter(s).

5.2.3.7 Multiple Subscriber Number (MSN), SUB-addressing (SUB), Connection Type (CT)

Selection: MSN, SUB, CT supported PICS: SC.11 OR SC.12 OR SC.13

MSN, SUB and CT are shortened into MSC.

5.2.3.7.1 Mandatory (17)

PRES_MSC17_001
Clause 5.2.1 and annex B of [3**]**
Selection: CT supported PICS: SC.13
Observe that the IUT having received a Call Set-Up message with a single parameter Selection of Terminal Function set to CT (Connection Type),
displays the Connection Type.

PRES_MSC17_002
Clause 5.2.1 and annex B of [3**]**
Selection: MSN supported PICS: SC.11
Observe that the IUT having received a Call Set-Up message with a single parameter Selection of Terminal Function set to MSN (Multiple Subscriber Number),
displays the Multiple Subscriber Number.

PRES_MSC17_003
Clause 5.2.1 and annex B of [3**]**
Selection: SUB supported PICS: SC.12
Observe that the IUT having received a Call Set-Up message with a single parameter Selection of Terminal Function set to SUB (Sub-Address),
displays the SUB-Address.

PRES_MSC17_004
Clause 5.2.1 and annex B of [3**]**
Observe that the IUT having received a Call Set-Up message with the parameters listed below:
date and time;
calling line identity;
called line identity;
complementary calling line identity;
call type;
first called line identity;
type of forwarded call;
type of calling user;
redirecting number;
network provider identity;
carrier identity;
selection of terminal function set to connection type;
display information;
displays at least the selection of terminal function set to connection type.

PRES_MSC17_005
Clause 5.2.1 and annex B of [3**]**
Observe that the IUT having received a Call Set-Up message with the parameters listed below:
date and time;
calling line identity;
called line identity;
complementary calling line identity;
call type;
first called line identity;
type of forwarded call;
type of calling user;
redirecting number;
network provider identity;
carrier identity;
selection of terminal function set to multiple subscriber number;
display information;
displays at least the selection of terminal function set to multiple subscriber number.

PRES_MSC17_006
Clause 5.2.1 and annex B of [3**]**
Observe that the IUT having received a message type Call Set-Up with the parameters listed below:
date and time;
calling line identity;
called line identity;
complementary calling line identity;
call type;
first called line identity;
type of forwarded call;
type of calling user;
redirecting number;
network provider identity;
carrier identity;
selection of terminal function set to sub-addressing;
display information;
displays at least the selection of terminal function set to sub-addressing.

5.2.3.7.2 Optional (18)

NOTE: The following Test Purposes apply indifferently to the parameters in the Terminal Function Selection set to MSN, SUB or CT.

PRES_MSC18_007
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetUp.1
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Selection of Terminal Function and a single optional parameter Date and Time,
displays the sent parameter(s).

PRES_MSC18_008
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetUp.2
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Selection of Terminal Function and a single optional parameter Calling Line identity,
displays the sent parameter(s).

PRES_MSC18_009
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.4
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Selection of Terminal Function and a single optional parameter Called Line Identity,
displays the sent parameter(s).

PRES_MSC18_010
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.5
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Selection of Terminal Function and a single optional parameter Calling Party Name,
displays the sent parameter(s).

PRES_MSC18_011
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.7
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Selection of Terminal Function and a single optional parameter Complementary Calling Line Identity,
displays the sent parameter(s).

PRES_MSC18_012
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.8
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Selection of Terminal Function and a single optional parameter Call Type,
displays the sent parameter(s).

PRES_MSC18_013
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.9
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Selection of Terminal Function and a single optional parameter First Called Line Identity,
displays the sent parameter(s).

PRES_MSC18_014
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.11
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Selection of Terminal Function and a single optional parameter Type of Forwarded Call,
displays the sent parameter(s).

PRES_MSC18_015
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.12
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Selection of Terminal Function and a single optional parameter Type of Calling User,
displays the sent parameter(s).

PRES_MSC18_016
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.13
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Selection of Terminal Function and a single optional parameter Redirecting Number,
displays the sent parameter(s).

PRES_MSC18_017
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.14
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Selection of Terminal Function and a single optional parameter Network Provided Identity,
displays the sent parameter(s).

PRES_MSC18_018
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.15
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Selection of Terminal Function and a single optional parameter Carrier Identity,
displays the sent parameter(s).

PRES_MSC18_019
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetup.17
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Selection of Terminal Function and a single optional parameter Display Information,
displays the sent parameter(s).

5.2.3.8 Call Return (CR)

Selection: Call Return supported PICS: SC.14

NOTE 1: This service is supported only when Off-hook.

NOTE 2: Call Return is shortened into CR for that clause.

5.2.3.8.1 Mandatory (19)

PRES_CR19_001
Clause 5.2.1 and annex B of [3**]**
Selection: CLIP supported PICS: SC.1
Observe that the IUT having received a Call Set-Up message with the two mandatory parameters Calling Line Identity and Call Type set to Call Return,
displays Calling Line Identity and Call Type set to Call Return.

PRES_CR19_002
Clause 5.2.1 and annex B of [3**]**
Selection: CLIR supported PICS: SC.2
Observe that the IUT having received a Call Set-Up message with the two mandatory parameters Reason for Absence of Calling Line Identity and Call Type set to Call Return,
displays Reason for Absence of Calling Line Identity and Call Type set to Call Return.

PRES_CR19_003
Clause 5.2.1 and annex B of [3**]**
Observe that the IUT having received a Call Set-Up message with the following parameter list:
calling line identity;
call type set to call return;
date and time;
complementary calling line identity;
first called line identity;
type of forwarded call;
type of calling user;
redirecting number;
network provided identity;
selection of terminal function;
display information;
displays at least the parameters calling line identity and call type set to call return.

5.2.3.8.2 Optional (20)

PRES_CR20_004
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetUp.18
Observe that the IUT having received a Call Set-Up message with the two mandatory parameters Calling Line Identity and Call Type set to Call Return and a single optional parameter date and time,
displays the sent parameter(s).

PRES_CR20_005
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetUp.5 or CallSetUp.6
Observe that the IUT having received a Call Set-Up message with the two mandatory parameters Calling Line Identity and Call Type set to Call Return and a single optional parameter Calling Party Name,
displays the sent parameter(s).

PRES_CR20_006
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetUp.7
Observe that the IUT having received a Call Set-Up message with the two mandatory parameters Calling Line Identity and Call Type set to Call Return and a single optional parameter Complementary Calling Line Identity,
displays the sent parameter(s).

PRES_CR20_007
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetUp.9
Observe that the IUT having received a Call Set-Up message with the two mandatory parameters Calling Line Identity and Call Type set to Call Return and a single optional parameter First Called Line Identity,
displays the sent parameter(s).

PRES_CR20_008
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetUp.11
Observe that the IUT having received a Call Set-Up message with the two mandatory parameters Calling Line Identity and Call Type set to Call Return and a single optional parameter Type of Forwarded Call,
displays the sent parameter(s).

PRES_CR20_009
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetUp.12
Observe that the IUT having received a Call Set-Up message with the two mandatory parameters Calling Line Identity and Call Type set to Call Return and a single optional parameter Type of Calling User,
displays the sent parameter(s).

PRES_CR20_010
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetUp.13
Observe that the IUT having received a Call Set-Up message with the two mandatory parameters Calling Line Identity and Call Type set to Call Return and a single optional parameter Redirecting Number,
displays the sent parameter(s).

PRES_CR20_011
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetUp.14
Observe that the IUT having received a Call Set-Up message with the two mandatory parameters Calling Line Identity and Call Type set to Call Return and a single optional parameter Network Provided Identity,
displays the sent parameter(s).

PRES_CR20_012
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetUp.16
Observe that the IUT having received a Call Set-Up message with the two mandatory parameters Calling Line Identity and Call Type set to Call Return and a single optional parameter Selection of Terminal Function,
displays the sent parameter(s).

PRES_CR20_013
Clause 5.2.1 and annex B of [3**]**
Selection: PICS CallSetUp.17
Observe that the IUT having received a Call Set-Up message with the two mandatory parameters Calling Line Identity and Call Type set to Call Return and a single optional parameter Display Information,
displays the sent parameter(s).

5.2.3.9 Alarm call

Selection: Alarm Call supported PICS: SC.15

5.2.3.9.1 Mandatory (21)

PRES_ALARM21_001
Annex B of [3**]**
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Call Type set to Alarm Call,
displays Call Type set to Alarm Call.

PRES_ALARM21_002
Annex B of [3**]**
Observe that the IUT having received with a Call Type Alarm Call and with the set of parameters listed below:
date and time;
call type;
network provider identity;
selection of terminal function;
display information;
displays at least Call Type set to Alarm Call.

5.2.3.9.2 Optional (22)

PRES_ALARM22_003
Annex B of [3**]**
Selection: PICS CallSetUp.1
Observe that the IUT having received a Call Set-Up message with one mandatory parameter Call Type set to Alarm Call and a single optional parameter date and time,
displays the sent parameter(s).

PRES_ALARM22_004
Annex B of [3**]**
Selection: PICS CallSetup.14
Observe that the IUT having received a Call Set-Up message with one mandatory parameter Call Type set to Alarm Call and a single optional parameter Network Provided Identity,
displays the sent parameter(s).

PRES_ALARM22_005
Annex B of [3**]**
Selection: PICS CallSetup.16
Observe that the IUT having received a Call Set-Up message with one mandatory parameter Call Type set to Alarm Call and a single optional parameter Selection of Terminal Function,
displays the sent parameter(s).

PRES_ALARM22_006
Annex B of [3**]**
Selection: PICS CallSetup.17
Observe that the IUT having received a Call Set-Up message with one mandatory parameter Call Type set to Alarm Call and a single optional parameter Display Information,
displays the sent parameter(s).

5.2.3.10 User procedure notification

Selection: User Procedure Notification supported PICS: SC.16

5.2.3.10.1 Mandatory (23)

PRES_USER23_001
Annex B of [3**]**
Observe that the IUT having received a Short Message Service message with a single mandatory parameter Service Information,
displays the Service Information.

PRES_USER23_002
Annex B of [3**]**
Observe that the IUT having received a Short Message Service message with a set of parameters belonging to User Procedure Notification, including the mandatory Service Information, and listed below:
date and time;
type of forwarded call;
network provider identity;
selection of terminal function (MSN);
display information;
extension for network operator use;
displays at least the Service Information.

5.2.3.10.2 Optional (24)

PRES_USER24_003
Annex B of [3**]**
Selection: PICS SMS.1
Observe that the IUT having received a Short Message Service message with the mandatory parameter Service Information and a single optional parameter Date and Time,
displays the sent parameter(s).

PRES_USER24_004
Annex B of [3**]**
Selection: PICS SMS.8
Observe that the IUT having received a Short Message Service message with the mandatory parameter Service Information and a single optional parameter Network Provided Identity,
displays the sent parameter(s).

PRES_USER24_005
Annex B of [3**]**
Selection: PICS SMS.9
Observe that the IUT having received a Short Message Service message with the mandatory parameter Service Information and a single optional parameter Selection of Terminal Function,
displays the sent parameter(s).

PRES_USER24_006
Annex B of [3**]**
Selection: PICS SMS.10
Observe that the IUT having received a Short Message Service message with the mandatory parameter Service Information and a single optional parameter Display Information,
displays the sent parameter(s).

5.2.3.11 Monitoring service

Selection: Monitoring Service supported PICS: SC.17

5.2.3.11.1 Mandatory (25)

PRES_MONING25_001
Annex B of [3**]**
Observe that the IUT having received a Call Set-Up message with a single mandatory parameter Call Type set to Monitoring Call,
displays Call Type set to Monitoring Call.

PRES_MONING25_002
Annex B of [3**]**
Observe that the IUT having received a Call Set-Up message with the complete set of parameters listed below:
date and time;
calling line identity;
called line identity;
calling party name;
complementary calling line identity;
call type set to monitoring call;
first called line identity;
type of forwarded call;
type of calling user;
redirecting user;
network provider identity;
selection of terminal function;
display information;
service information;
displays at least call type set to monitoring call.

5.2.3.11.2 Optional (26)

PRES_MONING26_003
Annex B of [3**]**
Selection: PICS CallSetUp.1
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Call Type (set to Monitoring Call) and a single optional parameter Date and Time,
displays the sent parameter(s).

PRES_MONING26_004
Annex B of [3**]**
Selection: PICS CallSetUp.2
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Call Type (set to Monitoring Call) and a single optional parameter Calling Line Identity,
displays the sent parameter(s).

PRES_MONING26_005
Annex B of [3**]**
Selection: PICS CallSetUp.4
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Call Type (set to Monitoring Call) and a single optional parameter Called Line Identity,
displays the sent parameter(s).

PRES_MONING26_006
Annex B of [3**]**
Selection: PICS CallSetup.5
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Call Type (set to Monitoring Call) and a single optional parameter Calling Party Name,
displays the sent parameter(s).

PRES_MONING26_007
Annex B of [3**]**
Selection: PICS CallSetup.7
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Call Type (set to Monitoring Call) and a single optional parameter Complementary Calling Line Identity,
displays the sent parameter(s).

PRES_MONING26_008
Annex B of [3**]**
Selection: PICS CallSetup.9
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Call Type (set to Monitoring Call) and a single optional parameter First Called Line Identity,
displays the sent parameter(s).

PRES_MONING26_009
Annex B of [3**]**
Selection: PICS CallSetup.11
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Call Type (set to Monitoring Call) and a single optional parameter Type of Forwarded Call,
displays the sent parameter(s).

PRES_MONING26_010
Annex B of [3**]**
Selection: PICS CallSetup.12
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Call Type (set to Monitoring Call) and a single optional parameter Type of Calling User,
displays the sent parameter(s).

PRES_MONING26_011
Annex B of [3**]**
Selection: PICS CallSetup.13
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Call Type (set to Monitoring Call) and a single optional parameter Redirecting Number,
displays the sent parameter(s).

PRES_MONING26_012
Annex B of [3**]**
Selection: PICS CallSetup.14
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Call Type (set to Monitoring Call) and a single optional parameter Network Provided Identity,
displays the sent parameter(s).

PRES_MONING26_013
Annex B of [3**]**
Selection: PICS CallSetup.16
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Call Type (set to Monitoring Call) and a single optional parameter Selection of Terminal Function,
displays the sent parameter(s).

PRES_MONING26_014
Annex B of [3**]**
Selection: PICS CallSetup.17
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Call Type (set to Monitoring Call) and a single optional parameter Display Information,
displays the sent parameter(s).

PRES_MONING26_015
Annex B of [3**]**
Selection: PICS CallSetup.19
Observe that the IUT having received a Call Set-Up message with the mandatory parameter Call Type (set to Monitoring Call) and a single optional parameter Service Information,
displays the sent parameter(s).

5.2.3.12 Invalid messages (27)

The following test purposes are covering the clause 5.1.3 of EN 300 659-3 [3], for the behaviour of Terminal on receipt of invalid messages.

PRES_INV29_001
Clause 5.1.3 of [3**]**
Selection: Invalid.1
Observe that IUT on receipt of a valid message containing a parameter with valid content and a parameter with an unknown value,
discards the parameter with unknown value and displays the valid parameter.

PRES_INV29_002
Clause 5.1.3 of [3**]**
Selection: Invalid.2
Observe that IUT on receipt of an unknown message,
discards the message.

PRES_INV29_003
Clause 5.1.3 of [3**]**
Selection: Invalid.3
Observe that IUT on receipt of a valid message containing a parameter with valid content and an unknown parameter,
discards the unknown parameter and displays the valid parameter.

PRES_INV29_004
Clause 5.1.3 of [3**]**
Selection: Invalid.4
Observe that IUT on receipt of message containing two mutual exclusive parameters,
discards the message.

PRES_INV29_005
Clause 5.1.3 of [3**]**
Selection: Invalid.5
Observe that IUT on receipt of message containing two times the same parameter type with different values,
discards the message.

PRES_INV29_006
Clause 5.1.3 of [3**]**
Selection: Invalid.6
Observe that IUT on receipt of message containing two times the same parameter with identical values,
displays only one time the parameter (discards the second parameter).

Annex A (normative): DTMF Test Purposes

Selection: DTMF supported PICS: MC.4

The DTMF transmitter/receiver test purposes are outside the scope of the present document since their base standards are contained in separate documents ES 201 235-1, 2, 3 and 4 (see bibliography).

DTMF_001
Clause A.3.2.2 of [1**]**
Observe that the IUT in idle state, receiving line reversal of polarity,
present a correct DC resistance

DTMF_002
Clause A.3.2.3 of [1**]**
Observe that the IUT in idle state, receiving line reversal of polarity,
present a correct AC impedance

DTMF_003
Clause A.3.3 of [1**]**
Observe that the IUT in idle state, having received line reversal of polarity, on receipt of a valid DTMF information covering all the 16 DTMF codes,
properly receives the DTMF signal.

NOTE: in the dynamic behaviour description, a timer shall be inserted between line reversal and sending of DTMF information.

DTMF_004
Clause A.3.4.2 a) of [1**]**
Observe that the IUT in DIT state, having received a DTMF code "C",
do not properly receive any further DTMF code.

DTMF_005
Clause A.3.4.2 b) of [1**]**
Observe that the IUT in DIT state, having received valid ring signal,
do not properly receive any further DTMF code.

DTMF_006
Clause A.3.4.2 c) of [1**]**
Observe that the IUT in DIT state, having received line polarity reversal (back to the initial idle state polarity),
do not properly receive any further DTMF code.

DTMF_007
Clause A.3.4.2 d) of [1**]**
Observe that the IUT in DIT state, having received no DTMF code for one second, do not properly receive any, further DTMF code.

DTMF_008
Clause A.3.4.2 e) of [1**]**
Observe that the IUT in DIT state, having received no DTMF code by one second after receipt of a first DTMF code,
do not properly receive any further DTMF code.

Annex B (informative): Bibliography

ETSI ES 201 235-1: "Specification of Dual Tone Multi-Frequency (DTMF) Transmitters and Receivers; Part 1: General".

ETSI ES 201 235-2: "Specification of Dual Tone Multi-Frequency (DTMF) Transmitters and Receivers; Part 2: Transmitters".

ETSI ES 201 235-3: "Specification of Dual Tone Multi-Frequency (DTMF) Transmitters and Receivers; Part 3: Receivers".

ETSI ES 201 235-4: "Specification of Dual Tone Multi-Frequency (DTMF) Transmitters and Receivers; Part 4: Receivers for use in Terminal Equipment for end-to-end signalling".

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