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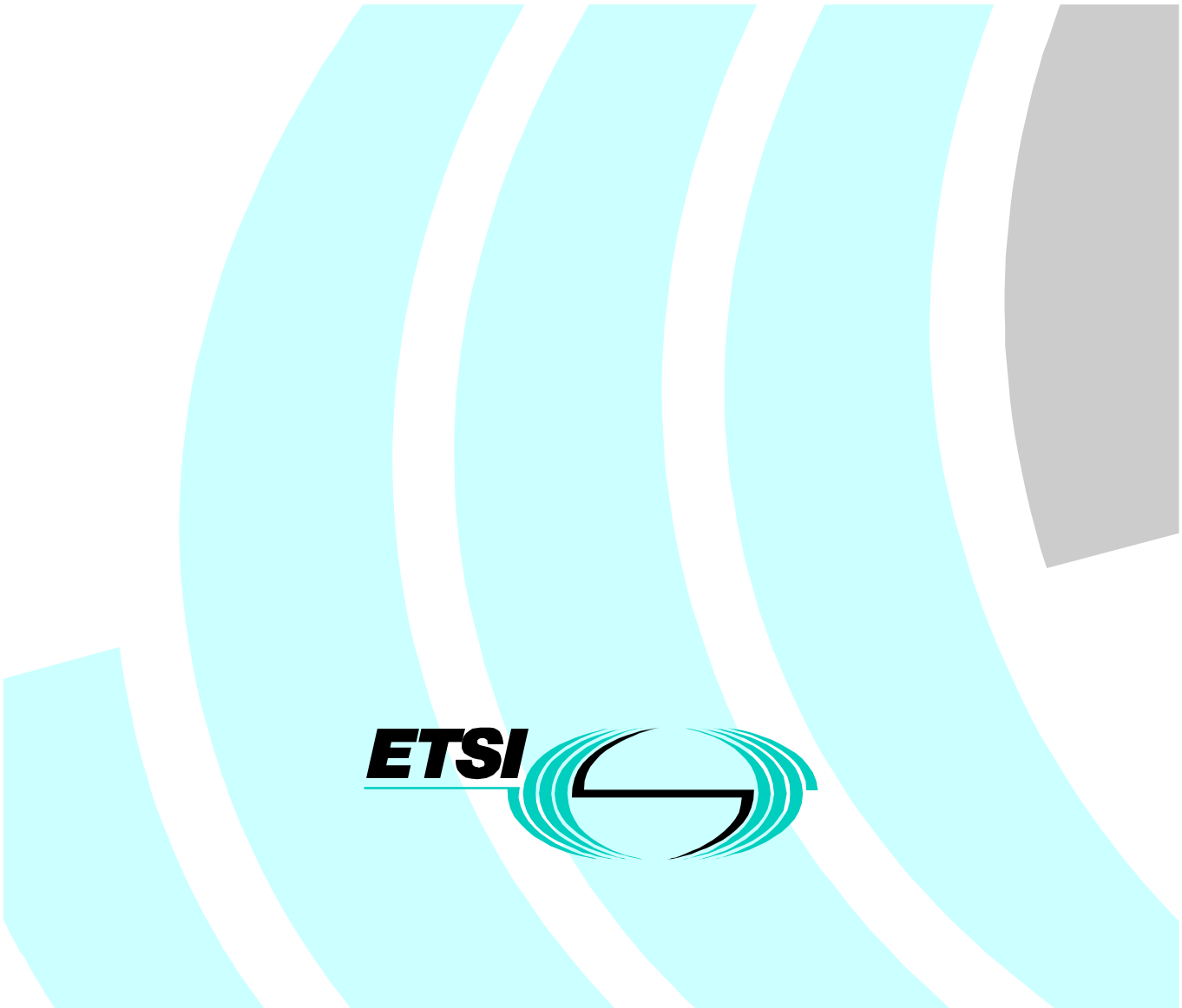
Integrated Services Digital Network (ISDN); Narrowband Multi-service Delivery System (NMDS); Part 4: Test Suite Structure and Test Purposes (TSS&TP) specification for the network layer (NTN side)



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Contents

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN), and is now submitted for the Public Enquiry phase of the ETSI standards Two-step Approval Procedure.

The present document is part 4 of a multi-part deliverable covering the Integrated Services Digital Network (ISDN); Narrowband Multi-service Delivery System (NMDS), as identified below:

Part 1: "NMDS interface specification";

Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";

Part 3: "Test Suite Structure and Test Purposes (TSS&TP) specification for the data link layer (NTN side)";

Part 4: "Test Suite Structure and Test Purposes (TSS&TP) specification for the network layer (NTN side)";

Part 5: "Test Suite Structure and Test Purposes (TSS&TP) specification for the network layer (LE side)";

Part 6: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) specification for the NMDS Layer 2 PSTN-GW function (NTN side)";

Part 7: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) specification for the PSTN NMDS interface Layer 3 (NTN side)";

Part 8: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) specification for the PSTN NMDS interface Layer 3 (LE side)".

Proposed national transposition dates	
Date of latest announcement of this EN (doa):	3 months after ETSI publication
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Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

1 Scope

The present document contains the Test Suite Structure (TSS) and Test Purposes (TPs) for the Network layer (NWK) of a NMDS interface.

The objective of the present document is to provide conformance tests giving a high probability of inter-operability of an Network Termination Node (NTN) and a Local Exchange (LE) from different manufacturers over the NMDS interface. The present document covers only the procedures described in EN 301 141-1 [1].

ISO/IEC 9646-1 [7] is used as the basis for the methodology of conformance testing.

Concerning the Public Switched Telephone Network (PSTN) protocol testing, only the procedures defined in EN 301 141-1 [1] are covered by the tests defined in the present document. An Implementation Under Test (IUT), however, will have implemented a national PSTN protocol part as well. This requires that the tester generates messages containing the national PSTN protocol specific optional Information Elements (IEs), otherwise the IUT would not act on messages according to the PSTN protocol procedure definition. However, this does not provide a comprehensive test of the national PSTN protocol mapping specification, which is outside the scope of the present document.

As the tests use PSTN messages containing optional IEs according to national specifications, the test result is only valid for the implemented national mapping of the V5.1 PSTN protocol.

The present document does not cover tests related to functions of the bearer channel. Those functions should be tested in conjunction with testing of the national PSTN protocol mapping specification.

The present document contains no requirements concerning NWK tests for Integrated Services Digital Network Basic Access (ISDN-BA).

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 EN 301 141-1 (V2.1.1): "Integrated Services Digital Network (ISDN); Narrowband Multi-service Delivery System (NMDS); Part 1: NMDS interface specification".

[2] ETSI EN 301 141-2 (V1.3.1): "Integrated Services Digital Network (ISDN); Narrowband Multi-service Delivery System (NMDS); Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".

[3] ISO/IEC 7498-1: "Information technology - Open Systems Interconnection - Basic Reference Model: The Basic Model".

[4] ISO/IEC 7498-2: "Information processing systems - Open Systems Interconnection - Basic Reference Model - Part 2: Security Architecture".

[5] ISO/IEC 7498-3: "Information technology - Open Systems Interconnection - Basic Reference Model: Naming and addressing".

[6] ISO/IEC 7498-4: "Information processing systems - Open Systems Interconnection - Basic Reference Model - Part 4: Management framework".

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

[8] ETSI EN 300 324-1 (V1.2.3): "V interfaces at the digital Local Exchange (LE); V5.1 interface for the support of Access Network (AN); Part 1: V5.1 interface specification".

[9] ETSI ETS 300 402-2 (1995): "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Data link layer; Part 2: General protocol specification [ITU-T Recommendation Q.921 (1993), modified]".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in EN 300 324-1 [8] and the following apply:

Abstract Test Case (ATC): Refer to ISO/IEC 9646-1.

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

data link layer: Refer to ISO 7498.

implementation under test: Refer to ISO/IEC 9646-1.

incorrect information element: specified information element carrying information element types not defined in EN 301 141-1 nor in EN 300 324-1

invalid PSTN information element: PSTN information element not according to national specific requirements

invalid Protocol Data Unit: PDU which contains incorrect message format

invalid PSTN message: PSTN message carrying information elements not according to national specific requirements

lower tester: Refer to ISO/IEC 9646-1.

network layer: Refer to ISO 7498.

network termination: equipment providing the network side at the ISDN user-network interface for the basic access

NOTE: This term is used in the present document to indicate network-terminating aspects of NT1 and NT2.

physical layer: Refer to ISO 7498.

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

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

specified information element: Information element identifier defined in EN 300 324-1.

System Under Test (SUT): Refer to ISO/IEC 9646-1.

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

unspecified Information Element: information element identifier not defined in EN 301 141-1 nor in EN 300 324-1

valid information element: PSTN information element according to national specific requirements

valid PSTN message: PSTN message carrying information elements according to national specific requirements

3.2 Abbreviations

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

AN	Access Network
ATC	Abstract Test Case
ATS	Abstract Test Suite
FE	Function Element
FSM	Finite State Machine
IE	Information Element
ISDN	Integrated Services Digital Network
ISDN-BA	ISDN Basic Access
IUT	Implementation Under Test
L3addr	Layer 3 address
LE	Local Exchange
NTN	Network Termination Node
NWK	Network layer
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statements
PL	Permanent Line
PSTN	Public Switched Telephone Network
SUT	System Under Test
TP	Test Purpose
TSS	Test Suite Structure
UNI	User Network Interface

4 Test Suite Structure (TSS)

4.1 TSS overview

Figure 1 shows the structure of the NTN side NMDS test suite.

- NMDS_NTN
  - PSTN
    - Valid
      - PSTN FSM AN States (AN1, AN2, AN3, AN4, AN5, AN7)
    - Inopportune
      - PSTN FSM AN States (AN1, AN2, AN3, AN4, AN5, AN7)
    - Syntactically Invalid
      - PSTN FSM AN States (AN1, AN2, AN3, AN4, AN5, AN7)
    - Timers
      - PSTN FSM AN States (AN1, AN2, AN3, AN4, AN5, AN7)
  - ISDN
    - Valid
    - Syntactically Invalid

Figure 1: NMDS NTN TSS

4.2 Test groups

4.2.1 Protocol groups

4.2.1.1 PSTN protocol

All tests in the PSTN protocol (NMDS_NTN/PSTN) test group are intended to verify as thoroughly as possible the various procedures of the NTN_PSTN_protocol entity.

The following PSTN procedures are covered:

- all path related normal operation procedures;
- significant path related exceptional procedures;
- the status enquiry procedure;
- the error handling procedures;
- the layer 3 error detection procedure.

4.2.1.2 ISDN maintenance protocol

All tests in the ISDN protocol (NMDS_NTN/ISDN) test group are intended to verify as thoroughly as possible the various procedures of the NTN_ISDN_protocol entity.

The following ISDN procedures are covered:

- the status enquiry procedure;
- the error handling procedures.

4.2.2 Main test groups

4.2.2.1 Valid Behaviour (V) tests

Predefined state transitions are considered as valid. The test purpose in the Valid Behaviour test subgroup cover as far as reasonable the verification of the normal and exceptional procedures of the various FSMs.

A valid test is a test where the message sequence and the message contents is considered as valid (no error indication shall be indicated).

4.2.2.2 Inopportune Behaviour (I) tests

This test subgroup is intended to verify that the IUT is able to react properly in the case an inopportune protocol event occurring. Such an event is syntactically correct but occurs when it is not expected and an error indication is caused.

4.2.2.3 Syntactically Invalid Behaviour (S) tests

This test subgroup is intended to verify that the IUT is able to react properly having received an invalid PDU. An invalid PDU is defined as a syntactically incorrect message and therefore an error indication is caused.

4.2.2.4 Timer (T) expiry and counter mismatch tests

Different timers and counters are defined to supervise the various state transitions.

4.3 Test step structure

General dynamic behaviours are described in test steps which can be called from all ATCs within the ATS:

- state transitions;
- preconditions;
- preambles;
- postambles;
- status checks;
- common behaviours.

4.3.1 State transitions

The following clauses identify the test steps used in the ATS. In general, each test step represents a state transition. For example in the PSTN protocol, PSTN_NTN1_2 is the test step which brings the NTN PSTN_protocol_FSM from PSTN_path_state AN1 to PSTN_path_state AN2. The state transitions are declared in the parenthesis (originating state - destination state) which follow the test step names.

PSTN: state transitions used to preamble and postamble the PSTN protocol before and after a test purpose can be performed.

To test the NMDS interface certain sequences (i.e. preamble) shall be executed to reach the state which is the subject for the TPs.

4.3.1.1 PSTN protocol

Refer to EN 301 141-1 [1] and EN 300 324-1 [8].

All messages sent within the test steps shall be valid PSTN messages.

PSTN_AN1_2

On receipt of an originating call attempt (FE-subscriber_seizure) the IUT shall send the message ESTABLISH and enter the PSTN_path_state AN2 (Path initiated by AN).

PSTN_AN2_3

On receipt of a FE-subscriber_release, the IUT shall enter the PSTN_path_state AN3.

PSTN_AN1_4

On receipt of the event FE-line_information, the IUT shall send the ESTABLISH message and enter the PSTN_path_state AN4.

PSTN_AN1_5

On receipt of the ESTABLISH message the IUT shall send the message ESTABLISH ACK and enter the PSTN_path_state AN5 (Path active).

PSTN_AN5_7

On receipt of a SIGNAL message containing a faulty sequence number the IUT PSTN protocol shall send a DISCONNECT message and enter the PSTN_path_state AN7.

4.3.2 Preconditions

The precondition step of a test group applies at the UP via the user interface as a Permanent Line (PL) condition. This line condition shall be permanent during all tests in that test group.

4.3.3 Preambles

The preamble test step group contains the test steps needed for initialization of the IUT before testing the particular test purpose. All combinations of the test steps defined in clause 4.3.1.1 can be used to create preambles. Each preamble shall start from the IUT initial state as defined in clause 5.1.5.

4.3.4 Postambles

After each ATC the IUT shall be brought back to the initial state as defined in clause 5.1.5. All combinations of the test steps defined in clauses 4.3.1.2 to 4.3.1.5 can be used to create postambles.

4.3.5 Status verification

4.3.5.1 PSTN protocol

Based on EN 301 141-1 [1] and EN 300 324-1 [8], table 29, it is possible to identify the state of the IUT PSTN protocol FSM with valid PSTN messages.

On receipt of a STATUS ENQUIRY message the IUT shall send a STATUS message and remain the same state.

4.3.6 Common test steps

This test step group shall contain procedures which are used in more than one ATC.

4.4 Defaults

The default section describes the behaviour in case of an unexpected test event.

4.5 Abstract Service Primitives (ASPs) and Protocol Data Units (PDUs)

4.5.1 ASPs

The format of the two used ASPs is defined as described in ETS 300 402-2 [9]:

- dl_data_req
- dl_data_ind

4.5.2 PDUs

4.5.2.1 PSTN protocol

- pstn_establish
- pstn_establish_ack
- pstn_signal
- pstn_signal_ack
- pstn_disconnect
- pstn_disconnect_complete
- pstn_status_enquiry

- pstn_status
- pstn_MNT_status_enquiry
- pstn_MNT_status
- pstn_protocol_parameter

4.5.2.2 ISDN maintenance protocol

- isdn_MNT_status_enquiry
- isdn_MNT_status

4.5.3 Information elements

4.5.3.1 Variable length information elements

4.5.3.1.1 PSTN protocol

- pstn_sequence_number
- pstn_cadenced_ringing
- pstn_pulsed_signal
- pstn_steady_signal
- pstn_digit_signal
- pstn_recognition_time
- pstn_enable_autonomous_ack
- pstn_disable_autonomous_ack
- pstn_cause
- pstn_resource_unavailable
- pstn_enable_metering
- pstn_metering_report
- pstn_attenuation
- pstn_gateway_status_response

4.5.3.1.2 ISDN Maintenance protocol

- isdn_uni_status_response

4.5.3.2 Single octet information elements

4.5.3.2.1 PSTN protocol

- pstn_pulse_notification
- pstn_line_infomation
- pstn_state
- pstn_autonomous_signalling_sequence

- pstn_sequence_response
- pstn_gateway_status_request

4.5.3.2.2 ISDN Maintenance protocol

- isdn_uni_status_request

4.6 Timers and counters of the Abstract Test Suite (ATS)

This clause describes the timers and counters used in the ATS. The **min** and **max** indications define if the timer value represents the minimum or maximum limit of a timer. The timer values contain some additional tolerances for delays caused by test simulators. Therefore, a bigger timer tolerance is given than defined in EN 300 324-1 [8]:

- Minimum value of ATS timer = ETS timer - ETS tolerance.
- Maximum value of ATS timer = ETS timer + 2 x ETS tolerance.

The repetition of messages by the IUT shall be tested in the following way: the message has to be repeated within the time period T_min < T < T_max. This testing procedure applies to the tests in the TI test group only.

NOTE: Maximum values of some ATS timers are defined as test suite parameters.

Timers used in the ATS are given in *Timer Declarations* part of the ATS.

Table 1 gives the identified protocol counters used in the ATS and the references to EN 300 324-1 [8].

Table 1: Protocol counter values and references to EN 300 324-1

ATS counter name	ATS counter value	Explanation	Reference to EN 300 324-1 [8]
N1	1	Number of repetitions of the ESTABLISH message before starting T2	clause 13, table 28
N2	3	Maximum number of tested repetitions of the ESTABLISH message	clause 13, table 28
N3	2	Allowed number of repetitions of the DISCONNECT message	clause 13, table 28

5 Test Purposes (TPs)

5.1 Introduction

For each test requirement, a TP is defined.

This clause details the TPs for the AN side of NWK of the NMDS interface for each test group and references to the corresponding ATCs.

At the beginning of each test subgroup the initial state (refer to clause 5.1.5), the preambles (refer to clause 4.3.3) and the postambles (refer to clause 4.3.4) are listed.

5.1.1 TP naming convention

The identifier of the TP is constructed according to the scheme in table 2.

Table 2: TP identifier naming convention scheme

Identifier: **TC<p>_S<x>_<c>_<nn>**				
<p>	=	type of protocol: (test group)	I	ISDN maintenance protocol
			P	PSTN protocol
<x>	=	state:	(1-9)	
			x N/A	
<c>	=	category:	V	Valid Behaviour Tests
			I	Inopportune Behaviour Tests
			S	Syntactically Invalid Behaviour Tests
			T	Timers Expiry and Counter Mismatch
<nn>	=	sequential number:	(01-99)	

5.1.2 Source of TP definition

The source for the TPs is based on EN 301 141-1 [1] and EN 300 324-1 [8].

5.1.3 Test strategy

To achieve a maximum of test coverage with an appropriate number of abstract test cases the following selection criteria have been applied:

a) only the first up to the third value of the PSTN sequence number variables S(S), S(A), S(R), M(S), M(R) is covered;

b) the error handling procedures of the PSTN protocol are not exhaustively tested. Not all possible combinations of protocol errors in all protocol states are covered. The TPs cover only examples for each error handling procedure:

   1) for the PSTN protocol applications the error handling procedures are tested in PSTN_path_state AN1. To easily perform some of the test cases, some procedures are tested in PSTN_path_state AN5;

   2) the procedure for unexpected events of the PSTN protocol is exhaustively tested (all unexpected events in all PSTN_path_states are covered);

c) for several TPs some activities by the testing person are requested (invoking of certain procedures by the System Under Test (SUT)). These TPs are marked with (*).

5.1.4 Requirements not covered by TPs

a) it is not possible to explicitly verify the state of the COM, the ISDN-BA user port FSM and the PSTN user port FSM;

b) the correct use and implementation of national dependent optional IEs within the PSTN protocol is not tested (refer to annex D of EN 300 324-1 [8]):

   1) the capability of the NTN to send PSTN messages in all sequences required by the implemented national mapping;

   2) the capability of the NTN to send PSTN messages containing all combinations of optional IEs required by the implemented national mapping;

c) as the system reaction on the time-out of system management timers is not specified, these time outs are not tested;

d) generating of error indications is not tested;

e) activation of the ISDN user port for the PL capability is only tested concerning those states and state transitions which have relevance to the V5.1 interface.

5.1.5 Initial state

The initial states of the various NMDS protocols are defined as follows:

PSTN_INIT	Initial state to start the preamble of the PSTN TPs
AN1	(null), for PSTN protocol FSMs

5.1.6 Test and data configuration requirements

According to EN 301 141-2 [2], the IUT shall support either one ISDN-BA port or PSTN ports or both. For the aim of the conformance testing only one port of each supported type shall be provisioned.

Each user port shall be provisioned in a way that the IUT tries to enter the operational state for these user ports after system startup.

5.2 PSTN protocol

NOTE: This test group is only valid if PICS A.4.2 is set to "Yes" (see EN 301 141-2 [2]).

5.2.1 Valid behaviour tests (NMDS_NTN/PSTN/V)

Refer to EN 301 141-1 [1]and EN 300 324-1 [8], table 29 and figures L.9.1 to L.9.11.

All messages sent by LT1 and IUT have to be valid PSTN messages.

5.2.1.1 State AN1

Initial state of the IUT: PSTN_INIT

Preamble:
Postamble:

TCP_S1_V_01	On receipt of a STATUS ENQUIRY message the IUT shall send a STATUS message containing the cause_type "response to status enquiry" and the state AN1 and remain in the PSTN_path_state AN1 (Null).
TCP_S1_V_02 (*)	On receipt of an originating call attempt (FE-subscriber_seizure) the IUT shall send the message ESTABLISH and enter the PSTN_path_state AN2 (Path initiated by AN).
TCP_S1_V_03	On receipt of the ESTABLISH message the IUT shall send the message ESTABLISH ACK and enter the PSTN_path_state AN5 (Path active).
TCP_S1_V_04	On receipt of DISCONNECT message the IUT shall send the message DISCONNECT COMPLETE and remain the same PSTN_path_state AN1 (Null).
TCP_S1_V_05 (*)	On receipt of the event FE-line_information, the IUT shall send the ESTABLISH message and enter the PSTN_path_state AN4 (Line information).
TCP_S1_V_06	On receipt of DISCONNECT COMPLETE message the IUT shall remain in the PSTN_path_state AN1 (Null).

TCP_S1_V_07 On receipt of a PSTN maintenance STATUS ENQUIRY message the IUT shall send a STATUS message containing the PSTN gateway status response information element correctly encoded and remain in the PSTN_path_state AN1 (Null).

TCP_S1_V_08 On receipt of the ESTABLISH message with a L3addr = 0, the IUT shall treat the message as valid.

TCP_S1_V_09 On receipt of DISCONNECT COMPLETE message with a L3addr = '7fff', the IUT shall remain in the PSTN_path_state AN1 (Null).

TCP_S1_V_10 On receipt of DISCONNECT message with a L3addr = '7fff', the IUT shall send the message DISCONNECT COMPLETE and remain the same PSTN_path_state AN1 (Null).

5.2.1.2 State AN2

Initial state of the IUT: PSTN_INIT

Precondition: PSTN_AN1_2

Preamble: PSTN_AN1_2
Postamble: PSTN_ANx_1

TCP_S2_V_01 (*) On receipt of an ESTABLISH message, the IUT shall send an ESTABLISH ACK message and enter the PSTN_path_state AN5 (Path active) (if terminating calls have priority).

The IUT shall stop timer T1/T2 and not repeat the message ESTABLISH.

TCP_S2_V_02 (*) On receipt of an ESTABLISH message, the IUT shall remain in the PSTN_path_state AN2 (Path initiated by AN) (if originating calls have priority).

TCP_S2_V_03 (*) On receipt of a FE-subscriber_release, the IUT shall enter the PSTN_path_state AN3 (Path abort request).

TCP_S2_V_04 (*) On receipt of the ESTABLISH ACK message the IUT shall enter the PSTN_path_state AN5 (Path active).

The IUT shall stop timer T1/T2 and not repeat the message ESTABLISH.

TCP_S2_V_05 (*) On receipt of a DISCONNECT message, the IUT shall send a DISCONNECT COMPLETE message and enter the PSTN_path_state AN1 (Null).

Since the subscriber seizure condition is still present, the IUT shall send an ESTABLISH message and enter the PSTN_path_state AN2.

TCP_S2_V_06 (*) On receipt of a DISCONNECT COMPLETE message, the IUT shall enter the PSTN_path_state AN1 (Null).

Since the subscriber seizure condition is still present, the IUT shall send an ESTABLISH message and enter the PSTN_path_state AN2.

TCP_S2_V_07 (*) On receipt of a STATUS ENQUIRY message the IUT shall send a STATUS message containing the cause_type "response to status enquiry" and the state AN2 and remain in the PSTN_path_state AN2 (Path initiated by AN).

TCP_S2_V_08 (*) On receipt of the event FE-line_signal, the IUT shall remain in the PSTN_path_state AN2 (Path initiated by AN).

TCP_S2_V_09 On receipt of a PSTN maintenance STATUS ENQUIRY message the IUT shall send a STATUS message containing the PSTN gateway status response information element correctly encoded and remain in the PSTN_path_state AN2 (Path initiated by AN).

TCP_S2_V_10 On receipt of the ESTABLISH ACK message with an L3addr = 0, the IUT shall enter the PSTN_path_state AN5 (Path active).

The IUT shall stop timer T1/T2 and not repeat the message ESTABLISH.

TCP_S2_V_11 On receipt of a DISCONNECT message with a L3addr = 0, the IUT shall send a DISCONNECT COMPLETE message and enter the PSTN_path_state AN1 (Null).

TCP_S2_V_12 On receipt of a DISCONNECT message with a L3addr = '7fff', the IUT shall send a DISCONNECT COMPLETE message and enter the PSTN_path_state AN1 (Null).

5.2.1.3 State AN3

Initial state of the IUT: PSTN_INIT

Precondition: PSTN_AN1_2 and PSTN_AN2_3

Preamble: PSTN_ANx_1
Postamble: PSTN_ANx_1

TCP_S3_V_01 (*) On receipt of an ESTABLISH ACK message, the IUT shall send a DISCONNECT message and enter the PSTN_path_state AN7 (Disconnect request).

The IUT shall stop timer T1/T2 and not repeat the message ESTABLISH.

TCP_S3_V_02 (*) On receipt of a FE-subscriber_seizure, the IUT shall enter the PSTN_path_state AN2 (Path initiated by AN).

TCP_S3_V_03 (*) On receipt of an ESTABLISH message, the IUT shall send an ESTABLISH ACK message and enter the PSTN_path_state AN5 (Path active) (if terminating calls have priority).

The IUT shall stop timer T1/T2 and not repeat the message ESTABLISH.

TCP_S3_V_04 (*) On receipt of an ESTABLISH message, the IUT shall remain in the PSTN_path_state AN2 (Path initiated by AN) (if originating calls have priority).

TCP_S3_V_05 (*) On receipt of a DISCONNECT message, the IUT shall send a DISCONNECT COMPLETE message and enter the PSTN_path_state AN1 (Null).

TCP_S3_V_06 (*) On receipt of a DISCONNECT COMPLETE message, the IUT shall enter the PSTN_path_state AN1 (Null).

TCP_S3_V_07 (*) On receipt of a STATUS ENQUIRY message the IUT shall send a STATUS message containing the cause_type "response to status enquiry" and the state AN3 and remain in the PSTN_path_state AN3 (Path abort request).

TCP_S3_V_08 On receipt of a PSTN maintenance STATUS ENQUIRY message the IUT shall send a STATUS message containing the PSTN gateway status response information element correctly encoded and remain in the PSTN_path_state AN3 (Path abort request).

TCP_S3_V_09 (*) On receipt of a DISCONNECT message with the L3addr = 0, the IUT shall send a DISCONNECT COMPLETE message and enter the PSTN_path_state AN1 (Null).

TCP_S3_V_10 (*) On receipt of a DISCONNECT message with the L3addr = '7fff', the IUT shall send a DISCONNECT COMPLETE message and enter the PSTN_path_state AN1 (Null).

TCP_S3_V_11 (*) On receipt of a DISCONNECT COMPLETE message with the L3addr = 0, the IUT shall enter the PSTN_path_state AN1 (Null).

TCP_S3_V_12 (*) On receipt of a DISCONNECT COMPLETE message with the L3addr = '7fff', the IUT shall enter the PSTN_path_state AN1 (Null).

5.2.1.4 State AN4

Initial state of the IUT: PSTN_INIT

Preamble: PSTN_AN1_4
Postamble: PSTN_ANx_1

TCP_S4_V_01	On receipt of a DISCONNECT message, the IUT shall send a DISCONNECT COMPLETE message and enter the PSTN_path_state AN1 (Null).
TCP_S4_V_02	On receipt of a DISCONNECT COMPLETE message, the IUT shall enter the PSTN_path_state AN1 (Null).
TCP_S4_V_03	On receipt of a STATUS ENQUIRY message the IUT shall send a STATUS message containing the cause_type "response to status enquiry" and the state AN4 and remain in the PSTN_path_state AN4 (Line information).
TCP_S4_V_04 (*)	On receipt of an ESTABLISH message, the IUT shall remain in the PSTN_path_state AN4 (Line information).
TCP_S4_V_05 (*)	On receipt of the event FE-subscriber_seizure, the IUT shall remain in the PSTN_path_state AN4 (Line information).
TCP_S4_V_06	On receipt of a PSTN maintenance STATUS ENQUIRY message the IUT shall send a STATUS message containing the PSTN gateway status response information element correctly encoded and remain in the PSTN_path_state AN4 (Line information).
TCP_S4_V_07	On receipt of a DISCONNECT message with a L3addr = '7fff', the IUT shall send a DISCONNECT COMPLETE message and enter the PSTN_path_state AN1 (Null).
TCP_S4_V_08	On receipt of a DISCONNECT COMPLETE message with a L3addr = '7fff', the IUT shall enter the PSTN_path_state AN1 (Null).
TCP_S4_V_09	On receipt of a DISCONNECT message with a L3addr = 0, the IUT shall send a DISCONNECT COMPLETE message and enter the PSTN_path_state AN1 (Null).
TCP_S4_V_10	On receipt of a DISCONNECT COMPLETE message with a L3addr = 0, the IUT shall enter the PSTN_path_state AN1 (Null).

5.2.1.5 State AN5

Initial state of the IUT: PSTN_INIT

Preamble: PSTN_AN1_5
Postamble: PSTN_ANx_1

TCP_S5_V_01	On receipt of a DISCONNECT message, the IUT shall send a DISCONNECT COMPLETE message and enter the PSTN_path_state AN1 (Null).
TCP_S5_V_02	On receipt of a DISCONNECT COMPLETE message, the IUT shall enter the PSTN_path_state AN1 (Null).
TCP_S5_V_03 (*)	On receipt of a line condition (digits) (FE-line_signal), the IUT shall send a SIGNAL message containing the line condition and remain in the PSTN_path_state AN5 (Path active). On receipt of a SIGNAL ACK message containing the correct sequence number IE the IUT shall remain in the PSTN_path_state AN5 (Path active). On receipt of two subsequent line conditions (digits) (FE-line_signal), the IUT shall send two SIGNAL messages containing the line conditions and remain in the PSTN_path_state AN5 (Path active). On receipt of a SIGNAL ACK message containing the correct sequence number IE the IUT shall remain in the PSTN_path_state AN5 (Path active).

TCP_S5_V_04 On receipt of a SIGNAL message, the IUT shall generate line conditions to the line stated in the SIGNAL message and remain in the PSTN_path_state AN5. On time-out of Tr the IUT shall send a SIGNAL ACK message and remain in the PSTN_path_state AN5 (Path active).

On receipt of two subsequent SIGNAL messages, the IUT shall generate line conditions to the line stated in the SIGNAL messages and remain in the PSTN_path_state AN5. On time-out of Tr the IUT shall send a SIGNAL ACK message and remain in the PSTN_path_state AN5 (Path active).

TCP_S5_V_05 On receipt of a STATUS ENQUIRY message the IUT shall send a STATUS message containing the cause_type "response to status enquiry" and the state AN5 and remain in the PSTN_path_state AN5 (Path active).

TCP_S5_V_06 On receipt of a PROTOCOL PARAMETER message, the IUT shall remain in the PSTN_path_state AN5 (Path active). On time-out of Tr the IUT shall send a SIGNAL ACK message and remain in the PSTN_path_state AN5 (Path active).

TCP_S5_V_07 On receipt of a PSTN maintenance STATUS ENQUIRY message the IUT shall send a STATUS message containing the PSTN gateway status response information element correctly encoded and remain in the PSTN_path_state AN5 (Path active).

TCP_S5_V_08 On receipt of a DISCONNECT message with a L3addr = 0, the IUT shall send a DISCONNECT COMPLETE message and enter the PSTN_path_state AN1 (Null).

TCP_S5_V_09 On receipt of a DISCONNECT COMPLETE message with a L3addr = 0, the IUT shall enter the PSTN_path_state AN1 (Null).

TCP_S5_V_10 On receipt of a DISCONNECT message with a L3addr = '7fff', the IUT shall send a DISCONNECT COMPLETE message and enter the PSTN_path_state AN1 (Null).

TCP_S5_V_11 On receipt of a DISCONNECT COMPLETE message with a L3addr = '7fff', the IUT shall enter the PSTN_path_state AN1 (Null).

TCP_S5_V_12 On receipt of a SIGNAL message with a L3addr indicating a B channel different to that previous used, the IUT shall send a SIGNAL ACK message with the same L3addr used in the SIGNAL message, and remain in the PSTN_path_state AN5 (Path active).

TCP_S5_V_13 On receipt of a SIGNAL message with a L3addr = 0, the IUT shall send a SIGNAL ACK message with the L3addr = 0, and remain in the PSTN_path_state AN5 (Path active).

5.2.1.6 State AN7

Initial state of the IUT: CTRL_COM_INIT, CTRL_PORT_INIT, PSTN_INIT

Preamble: PSTN_AN1_5 and PSTN_AN5_7
Postamble: PSTN_ANx_1

TCP_S7_V_01 On receipt of a DISCONNECT message containing a signal IE, the IUT shall enter the PSTN_path_state AN1 (Null).

TCP_S7_V_02 On receipt of a DISCONNECT COMPLETE message, the IUT shall enter the PSTN_path_state AN1 (Null).

TCP_S7_V_03 On receipt of a STATUS ENQUIRY message the IUT shall send a STATUS message containing the cause_type "response to status enquiry" and the state AN7 and remain in the PSTN_path_state AN7 (Disconnect request).

TCP_S7_V_04 On receipt of an ESTABLISH message the IUT shall remain in the PSTN_path_state AN7 (Disconnect Request).

TCP_S7_V_05 On receipt of an ESTABLISH ACK message the IUT shall remain in the PSTN_path_state AN7 (Disconnect Request).

TCP_S7_V_06	On receipt of a SIGNAL message the IUT shall remain in the PSTN_path_state AN7 (Disconnect Request).
TCP_S7_V_07	On receipt of a SIGNAL ACK message the IUT shall remain in the PSTN_path_state AN7 (Disconnect Request).
TCP_S7_V_08 (*)	On receipt of the event FE-line_signal, the IUT shall remain in the PSTN_path_state AN7 (Disconnect Request).
TCP_S7_V_09 (*)	On receipt of the event FE-subscriber_release, the IUT shall remain in the PSTN_path_state AN7 (Disconnect Request). Check that no further event occurs on the V5 interface.
TCP_S7_V_10	On receipt of a PROTOCOL PARAMETER message the IUT shall remain in the PSTN_path_state AN7 (Disconnect request).
TCP_S7_V_11	On receipt of a PSTN maintenance STATUS ENQUIRY message the IUT shall send a STATUS message containing the PSTN gateway status response information element correctly encoded and remain in the PSTN_path_state AN7 (Disconnect request).
TCP_S7_V_12	On receipt of a DISCONNECT COMPLETE message with a L3addr = 0, the IUT shall enter the PSTN_path_state AN1 (Null).
TCP_S7_V_13	On receipt of a DISCONNECT COMPLETE message with a L3addr = '7fff', the IUT shall enter the PSTN_path_state AN1 (Null).

5.2.2 Inopportune behaviour tests (NMDS_NTN/PSTN/I)

Refer to EN 301 141-1 [1], EN 300 324-1 [8], table 29 and clause L.1.4.

All messages sent by LT1 and IUT have to be valid PSTN messages.

5.2.2.1 State AN1

Initial state of the IUT: PSTN_INIT

Preamble:
Postamble: PSTN_ANx_1

TCP_S1_I_01	On receipt of an ESTABLISH ACK message the IUT shall send a STATUS message containing the cause_type "message not compatible with path state", the ESTABLISH ACK message type identifier and the state AN1. The IUT shall remain in the PSTN_path_state AN1 (Null).
TCP_S1_I_02	On receipt of an SIGNAL message the IUT shall send a STATUS message containing the cause_type "message not compatible with path state", the SIGNAL message type identifier and the state AN1. The IUT shall remain in the PSTN_path_state AN1 (Null).
TCP_S1_I_03	On receipt of an PROTOCOL PARAMETER message the IUT shall send a STATUS message containing the cause_type "message not compatible with path state", the PROTOCOL PARAMETER message type identifier and the state AN1. The IUT shall remain in the PSTN_path_state AN1 (Null).
TCP_S1_I_04	On receipt of an SIGNAL ACK message the IUT shall send a STATUS message containing the cause_type "message not compatible with path state", the SIGNAL ACK message type identifier and the state AN1. The IUT shall remain in the PSTN_path_state AN1 (Null).

5.2.2.2 State AN2

Initial state of the IUT: PSTN_INIT

Precondition: PSTN_AN1_2

Preamble:
Postamble: PSTN_ANx_1

TCP_S2_I_01 (*)	On receipt of a SIGNAL message the IUT shall send a STATUS message containing the cause_type "message not compatible with path state", the SIGNAL message type identifier and the state AN2 The IUT shall remain in the PSTN_path_state AN2 (Path initiated by AN).
TCP_S2_I_02 (*)	On receipt of a SIGNAL ACK message the IUT shall send a STATUS message containing the cause_type "message not compatible with path state", the SIGNAL ACK message type identifier and the state AN2 The IUT shall remain in the PSTN_path_state AN2 (Path initiated by AN).

5.2.2.3 State AN3

Initial state of the IUT: PSTN_INIT

Precondition: PSTN_AN1_2

Preamble: PSTN_AN2_3
Postamble: PSTN_ANx_1

TCP_S3_I_01 (*)	On receipt of a SIGNAL message the IUT shall send a STATUS message containing the cause_type "message not compatible with path state", the SIGNAL message type identifier and the state AN3 The IUT shall remain in the PSTN_path_state AN3 (Path abort request).
TCP_S3_I_02 (*)	On receipt of a SIGNAL ACK message the IUT shall send a STATUS message containing the cause_type "message not compatible with path state", the SIGNAL ACK message type identifier and the state AN3 The IUT shall remain in the PSTN_path_state AN3 (Path abort request).
TCP_S3_I_03 (*)	On receipt of a PROTOCOL PARAMETER message the IUT shall send a STATUS message containing the cause_type "message not compatible with path state", the PROTOCOL PARAMETER message type identifier and the state AN3 The IUT shall remain in the PSTN_path_state AN3 (Path abort request).

5.2.2.4 State AN4

Initial state of the IUT: PSTN_INIT

Preamble: PSTN_AN1_4
Postamble: PSTN_ANx_1

TCP_S4_I_01	On receipt of a SIGNAL message the IUT shall send a STATUS message containing the cause_type "message not compatible with path state", the SIGNAL message type identifier and the state AN4 The IUT shall remain in the PSTN_path_state AN4 (Line information).
TCP_S4_I_02	On receipt of a SIGNAL ACK message the IUT shall send a STATUS message containing the cause_type "message not compatible with path state", the SIGNAL ACK message type identifier and the state AN4 The IUT shall remain in the PSTN_path_state AN4 (Line information).

TCP_S4_I_03 On receipt of a PROTOCOL PARAMETER message the IUT shall send a STATUS message containing the cause_type "message not compatible with path state", the PROTOCOL PARAMETER message type identifier and the state AN4 The IUT shall remain in the PSTN_path_state AN4 (Line information).

TCP_S4_I_04 On receipt of an ESTABLISH ACK message the IUT shall send a STATUS message containing the cause_type "message not compatible with path state", the ESTABLISH ACK message type identifier and the state AN4 The IUT shall remain in the PSTN_path_state AN4 (Line information).

5.2.2.5 State AN5

Initial state of the IUT: PSTN_INIT

Preamble: PSTN_AN1_5
Postamble: PSTN_ANx_1

TCP_S5_I_01 On receipt of an ESTABLISH message the IUT shall send a STATUS message containing the cause_type "message not compatible with path state", the ESTABLISH message type identifier and the state AN5 The IUT shall remain in the PSTN_path_state AN5 (Path active).

TCP_S5_I_02 On receipt of an ESTABLISH ACK message the IUT shall send a STATUS message containing the cause_type "message not compatible with path state", the ESTABLISH ACK message type identifier and the state AN5 The IUT shall remain in the PSTN_path_state AN5 (Path active).

5.2.3 Syntactically invalid behaviour tests (NMDS_NTN/PSTN/S)

Refer to EN 301 141-1 [1], EN 300 324-1 [8], clause 13.5.2.

5.2.3.1 State AN1

Initial state of the IUT: PSTN_INIT

Preamble:
Postamble: PSTN_ANx_1

TCP_S1_S_01 Check that the IUT discards messages containing less than 4 octets and remains in the PSTN_path_state AN1 (Null).

TCP_S1_S_02 (protocol discriminator error)

Check that the IUT discards an ESTABLISH message (sends no ESTABLISH ACK message) containing an unspecified protocol_discriminator IE. The IUT shall remain in the PSTN_path_state AN1 (Null).

TCP_S1_S_03 (L3 address error)

Check that the IUT discards an ESTABLISH message (sends no ESTABLISH ACK message) containing reserved L3addr. The IUT shall send a STATUS message containing the cause_type "L3 address error" and the state AN1. The IUT shall remain in the PSTN_path_state AN1 (Null).

The STATUS message sent by the AN shall contain the state IE "not applicable" and not "AN1" (refer to EN 300 324-1 [8], clause 13.5.2.2).

TCP_S1_S_04 (message type error)

Check that the IUT discards a message containing an unspecified message_type IE. The IUT shall send a STATUS message containing the cause_type "message type unrecognized", the received message type identifier and the state AN1. The IUT shall remain in the PSTN_path_state AN1 (Null).

TCP_S1_S_05 (repeated optional IEs)

On receipt of an DISCONNECT message containing more than 3 repeated valid optional IE the IUT shall send a STATUS message containing the cause_type "repeated optional IEs", the DISCONNECT message identifier, the repeated IE identifier and the state AN1. The IUT shall then send an DISCONNECT COMPLETE message and remains in the PSTN_path_state AN1 (Null).

TCP_S1_S_06 (repeated conditional IEs)

On receipt of an ESTABLISH message containing more than 3 repeated valid conditional IE the IUT shall send a STATUS message containing the cause_type "repeated mandatory IEs", the ESTABLISH message identifier, the repeated IE identifier and the state AN1. The IUT shall then send an ESTABLISH ACK message and enter the PSTN_path_state AN5 (Path active).

NOTE: ESTABLISH message does not contain any more optional element.

TCP_S1_S_07 (unrecognized IE)

On receipt of an ESTABLISH message containing one valid and one unspecified optional IE the IUT shall send a STATUS message containing the cause_type "unrecognized IE", the ESTABLISH message identifier, the unrecognized IE identifier and the state AN1. The IUT shall then send an ESTABLISH ACK message and enter the PSTN_path_state AN5 (Path active).

TCP_S1_S_08 (content error of optional IE)

On receipt of an DISCONNECT message containing an incorrect IE the IUT shall send a STATUS message containing the cause_type "optional IE content error", the DISCONNECT message identifier, the faulty IE identifier and the state AN1. The IUT shall then send an DISCONNECT COMPLETE message and remains in the PSTN_path_state AN1 (NULL).

TCP_S1_S_09 (content error of mandatory IE)

On receipt of an ESTABLISH message containing an incorrect conditional IE the IUT shall send a STATUS message containing the cause_type "mandatory IE content error", the ESTABLISH message identifier, the faulty IE identifier and the state AN1. The IUT shall then send an ESTABLISH ACK message and remains in the PSTN_path_state AN5 (Path active).

TCP_S1_S_10 (optional IE not allowed)

Check that the IUT discards an ESTABLISH message (sends no ESTABLISH ACK message) containing two different valid IEs The IUT shall send a STATUS message containing the cause_type "too many IEs", the ESTABLISH message identifier and the state AN1. The IUT shall remain in the PSTN_path_state AN1 (Null).

TCP_S1_S_11 (protocol discriminator error)

Check that the IUT discards an Maintenance STATUS ENQUIRY (including PSTN g/w IE) message containing an unspecified protocol_discriminator IE. The IUT shall remain in the PSTN_path_state AN1 (Null).

5.2.3.2 State AN5

Initial state of the IUT: PSTN_INIT

Preamble: PSTN_AN1_5
Postamble: PSTN_ANx_1

TCP_S5_S_01 (IE out of sequence)

Check that the IUT discards a SIGNAL message (sends no SIGNAL ACK message) containing a valid conditional IE and the correct sequence_number IE out of sequence. The IUT shall send a STATUS message containing the cause_type " mandatory IE missing ", the SIGNAL message identifier, the faulty IE identifier and the state AN5. The IUT shall remain in the PSTN_path_state AN5 (Path Active).

TCP_S5_S_02 (repeated mandatory IEs)

Check that the IUT discards a SIGNAL ACK message containing two repeated sequence number IEs. The IUT shall send a STATUS message containing the cause_type "repeated mandatory IE", the SIGNAL message identifier, the repeated IE identifier and the state AN5. The IUT shall remain in the PSTN_path_state AN5 (Path Active).

TCP_S5_S_03 (mandatory IE missing)

Check that the IUT discards a SIGNAL message (sends no SIGNAL ACK message) containing no sequence_number IE. The IUT shall send a STATUS message containing the cause_type "mandatory IE missing", the SIGNAL message identifier, the missing IE identifier and the state AN5. The IUT shall remain in the PSTN_path_state AN5 (Path Active).

TCP_S5_S_04 (content error of mandatory IE)

On receipt of an SIGNAL message containing an invalid length of the mandatory IE "sequence_number" the IUT shall send a STATUS message containing the cause_type "Mandatory IE content error", the SIGNAL message identifier, the missing IE identifier and the state AN5. The IUT shall remain in the PSTN_path_state AN5 (Path active)

TCP_S5_S_05 (content error of mandatory IE)

On receipt of an SIGNAL message containing an invalid length of the conditional IE "Enable-metering" the IUT shall send a STATUS message containing the cause_type "Mandatory IE content error", the SIGNAL message identifier, the missing IE identifier and the state AN5. The IUT shall remain in the PSTN_path_state AN5 (Path active)

TCP_S5_S_06 (conditional IE missing)

Check that the IUT discards a SIGNAL message (sends no SIGNAL ACK message) containing no conditional IE. The IUT shall send a STATUS message containing the cause_type "mandatory IE missing ", the SIGNAL message identifier and the state AN5. The IUT shall remain in the PSTN_path_state AN5 (Path Active).

5.2.4 Timer expiry and counter mismatch tests (NMDS_NTN/PSTN/T)

Refer to EN 301 141-1 [1], EN 300 324-1 [8], table 29 and clause L.1.4.

5.2.4.1 State AN2

Initial state of the IUT: PSTN_INIT

Preamble: PSTN_AN1_2
Postamble: PSTN_ANx_1

TCP_S2_T_01 (*)	On time-out of timer T1 the IUT shall repeat sending the ESTABLISH message and remain in the PSTN_path_state AN2 (Path initiated by AN). On receipt of an ESTABLISH ACK message after N1 repetitions of the ESTABLISH message the IUT shall enter the PSTN_path_state AN5 (Path active).
TCP_S2_T_02 (*)	On time-out of timer T1 the IUT shall repeat sending the ESTABLISH message and remain in the PSTN_path_state AN2 (Path initiated by AN). On time-out of timer T2 the IUT shall repeat sending the ESTABLISH message and remain in the PSTN_path_state AN2 (Path initiated by AN). On receipt of an ESTABLISH ACK message after N2 repetitions of the ESTABLISH message the IUT shall enter the PSTN_path_state AN5 (Path active).

5.2.4.2 State AN3

Initial state of the IUT: PSTN_INIT

Preamble: PSTN_AN1_2 and PSTN_AN2_3
Postamble: PSTN_ANx_1

TCP_S3_T_01 (*)	On time-out of timer T1 the IUT shall send a DISCONNECT COMPLETE message and shall enter the PSTN_path_state AN1 (Null).

5.2.4.3 State AN4

Initial state of the IUT: PSTN_INIT

Preamble: PSTN_AN1_4
Postamble: PSTN_ANx_1

TCP_S4_T_01 (*)	On time-out of timer T1 the IUT shall repeat sending the ESTABLISH message and remain in the PSTN_path_state AN4 (Line information). On receipt of a DISCONNECT COMPLETE message after N1 repetitions of the ESTABLISH message the IUT shall enter the PSTN_path_state AN1 (Null).
TCP_S4_T_02 (*)	On time-out of timer T1 the IUT shall repeat sending the ESTABLISH message and remain in the PSTN_path_state AN4 (Line information). On time-out of timer T2 the IUT shall repeat sending the ESTABLISH message and remain in the PSTN_path_state AN4 (Line information). On receipt of a DISCONNECT COMPLETE message after N2 repetitions of the ESTABLISH message the IUT shall enter the PSTN_path_state AN1 (Null).

5.2.4.4 State AN5

Initial state of the IUT: PSTN_INIT

Preamble: PSTN_AN1_5
Postamble: PSTN_ANx_1

TCP_S5_T_01 On time-out of timer Tt after sending a SIGNAL message the IUT shall send a DISCONNECT message and enter the PSTN_path_state AN7 (Disconnect Request).

TCP_S5_T_02 On receipt of a SIGNAL message containing a faulty sequence number the IUT shall send a DISCONNECT message and enter the PSTN_path_state AN7 (Disconnect Request).

TCP_S5_T_03 On receipt of a SIGNAL ACK message containing a faulty sequence number after sending a SIGNAL message the IUT shall send a DISCONNECT message and enter the PSTN_path_state AN7 (Disconnect Request).

5.2.4.5 State AN7

Initial state of the IUT: PSTN_INIT

Preamble: PSTN_AN1_5 and PSTN_AN5_7
Postamble: PSTN_ANx_1

TCP_S7_T_01 On time-out of timer T3 the IUT shall repeat sending the DISCONNECT message and remain in the PSTN_path_state AN7 (Disconnect Request). On receipt of a DISCONNECT COMPLETE message after N3 repetitions of the DISCONNECT message the IUT shall enter the PSTN_path_state AN1 (Null).

TCP_S7_T_02 On time-out of timer T3 the IUT shall repeat sending the DISCONNECT message and remain in the PSTN_path_state AN7 (Disconnect Request). On N3+1 time-outs of timer T3 the IUT shall send a DISCONNECT message and remain in the PSTN_path_state AN7 (Disconnect Request).

On receipt of a DISCONNECT COMPLETE message after N3+2 repetitions of the DISCONNECT message the IUT shall enter the PSTN_path_state AN1 (Null).

5.3 ISDN Maintenance protocol

NOTE: This test group is only valid if PICS A.4.1 is set to "Yes" (see EN 301 141-2 [2]).

5.3.1 Valid behaviour tests (NMDS_NTN/ISDN/V)

Initial state of the IUT: ISDN_INIT

Preamble:
Postamble:

TCI_Sx_V_01 On receipt of a ISDN maintenance STATUS ENQUIRY message the IUT shall send a STATUS message containing the ISDN UNI status response information element correctly encoded.

5.3.2 Syntactically invalid behaviour tests (NMDS_NTN/ISDN/S)

Initial state of the IUT: ISDN_INIT

Preamble:
Postamble:

TCI_Sx_S_01 (protocol discriminator error)

Check that the IUT discards an Maintenance STATUS ENQUIRY (including ISDN UNI i.e.) message containing an unspecified protocol_discriminator IE.

Annex A (informative): Bibliography

- ETSI ETS 300 297 (1995): "Integrated Services Digital Network (ISDN); Access digital section for ISDN basic access".
- ETSI ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

History

Document history			
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