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*European Standard (Telecommunications series)*

**Broadband Integrated Services Digital Network (B-ISDN);  
Digital Subscriber Signalling System No. two (DSS2) protocol;  
Connection characteristics;  
Peak cell rate modification by the connection owner;  
Part 5: Test Suite Structure and Test Purposes (TSS&TP)  
specification for the network**

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**Reference**

DEN/SPS-05152-5 (9ad90idc.PDF)

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## Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Signalling Protocols and Switching (SPS), and is now submitted for the Voting phase of the ETSI standards Two-step Approval Procedure.

The present document is part 5 of a multi-part standard covering the Digital Subscriber Signalling System No. 2 (DSS2) protocol specification for the B-ISDN Peak cell rate modification by the connection owner, as identified below:

- Part 1: "Protocol specification [ITU-T Recommendation Q.2963.1 [8] (1996), modified]";
- Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";
- Part 3: "Test Suite Structure and Test Purposes (TSS&TP) specification for the user";
- Part 4: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the user";
- Part 5: "Test Suite Structure and Test Purposes (TSS&TP) specification for the network";**
- Part 6: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network".

<b>Proposed national transposition dates</b>	
Date of latest announcement of this EN (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

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# 1 Scope

This fifth part of EN 301 003 specifies the network Test Suite Structure and Test Purposes (TSS&TP) for the  $T_B$  reference point or coincident  $S_B$  and  $T_B$  reference point (as defined in ITU-T Recommendation I.413 [5]) of implementations conforming to the standards for the signalling user-network layer 3 specification for Peak cell rate modification by the connection owner of the Digital Subscriber Signalling System No. 2 (DSS2) protocol for the pan-European Broadband Integrated Services Digital Network (B-ISDN), EN 301 003-1 [3].

A further part of the present document specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma based on the present document.

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# 2 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

- [1] ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [2] EN 300 443-1 (V1.3): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; B-ISDN user-network interface layer 3 specification for basic call/bearer control - Part 1: Protocol specification [ITU-T Recommendation Q.2931 (1995), modified]".
- [3] EN 301 003-1 (V1.1): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Connection characteristics; Peak cell rate modification by the connection owner - Part 1: Protocol specification [ITU-T Recommendation Q.2963.1 (1996), modified]".
- [4] EN 301 003-2 (V1.1): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Connection characteristics; Peak cell rate modification by the connection owner - Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".
- [5] ITU-T Recommendation I.413 (1993): "B-ISDN user-network interface".
- [6] ISO/IEC 9646-1: "Information Technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [7] ISO/IEC 9646-2: "Information Technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".
- [8] ITU-T Recommendation Q.2963.1: "Digital Subscriber Signalling System No. 2 – Connection modification: Peak cell rate modification by the connection owner".

## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in EN 301 003-1 [3] and EN 300 443-1 [2] and the following apply:

#### 3.1.1 Definitions related to conformance testing

**abstract test case:** refer to ISO/IEC 9646-1 [6].

**Abstract Test Method (ATM):** refer to ISO/IEC 9646-1 [6].

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

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

**lower tester:** refer to ISO/IEC 9646-1 [6].

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

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

**Protocol Implementation eXtra Information for Testing (PIXIT):** refer to ISO/IEC 9646-1 [6].

**PIXIT proforma:** refer to ISO/IEC 9646-1 [6].

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

#### 3.1.2 Definitions related to EN 301 003-1

**network:** DSS2 protocol entity at the Network side of the user-network interface where a  $T_B$  reference point or coincident  $S_B$  and  $T_B$  reference point applies.

**network ( $S_B/T_B$ ):** DSS2 protocol entity at the Network side of the user-network interface where a coincident  $S_B$  and  $T_B$  reference point applies.

**network ( $T_B$ ):** DSS2 protocol entity at the Network side of the user-network interface where a  $T_B$  reference point applies (user is the private ISDN).

### 3.2 Abbreviations

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

ATM	Abstract Test Method
ATS	Abstract Test Suite
B-ISDN	Broadband Integrated Services Digital Network
CR	Call Reference
DSS2	Digital Subscriber Signalling System No. two
IE_AI	Information element action indicator
IE_flag	Information element instruction indicator flag
IUT	Implementation Under Test
N0	Null link state
N1	Call Initiated link state
N10	Active link state
N12	Disconnect Indication call state

N3	Outgoing Call Proceeding link state
N4	Call Delivered link state
N6	Call Present link state
N7	Call Received link state
N9	Incoming Call Proceeding link state
PCR	Peak Cell Rate
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
TP	Test Purpose
TSS	Test Suite Structure

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## 4 Test Suite Structure (TSS)

Signalling procedures at the coincident  $S_B/T_B$  and at the  $T_B$  reference points

Modification procedures at the requesting entity.

Valid behaviour .....	(01)
Handling of error conditions .....	(02)
Timers .....	(03)

Modification procedures at the responding entity.

Valid behaviour .....	(04)
Handling of error conditions .....	(05)

**Figure 1: Test suite structure**

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## 5 Test Purposes (TP)

### 5.1 Introduction

For each test requirement a TP is defined.

#### 5.1.1 TP naming convention

Tps are numbered, starting at 01, within each group. Groups are organized according to the TSS. Additional references are added to identify the actual test suite (see table 1).

**Table 1: TP identifier naming convention scheme**

Identifier:	<suite_id>_<group>_<nn>		
<suite_id>	=	service + type of IUT:	"MODN" for modification, IUT = <b>Network</b>
<group>	=	group number:	two character field representing the group reference according to TSS
<nn>	=	sequential number:	(01-99)

## 5.1.2 Source of TP definition

The TPs are based on EN 301 003-1 [3].

## 5.1.3 Test strategy

As the base standard EN 301 003-1 [3] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the PICS specification EN 301 003-2 [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 (ETS 300 406 [1]).

## 5.1.4 Test of call states

Many TPs include a reference to the IUT's final call state after the realization of the TP. In these cases the TP includes the requirement to ensure that the IUT has entered this particular final call state. Ensuring that the IUT is in a particular call state shall be realized by following the procedures described in subclause 5.6.11 of EN 300 443-1 [2]. According to these procedures, the IUT on receipt of a STATUS ENQUIRY message, shall respond with a STATUS message indicating, in the fifth octet of the Call state information element, the current call state of the IUT. This exchange of messages is not mentioned explicitly in each TP but is considered to be implicit in the reference to the final call state. This way of phrasing the TPs has been used to avoid over-complicating the text and structure of the TPs and to improve the readability.

## 5.2 TPs for the Peak cell rate modification, network

All PICS items referred to in this subclause are as specified in EN 301 003-2 [4] unless indicated otherwise by another numbered reference.

Unless specified:

- the messages indicated are valid and contain at least the mandatory information elements and possibly optional information elements.
- the information elements indicated are valid and contain at least the mandatory parameters and possibly optional parameters.

### 5.2.1 Signalling procedures at the coincident $S_B/T_B$ and at the $T_B$ reference points

NOTE: Unless otherwise specified, the connection defined by the requested ATM traffic descriptor is available for use.

#### 5.2.1.1 Modification procedures at the requesting entity

Test purposes for EN 301 003-1 [3] subclause 9.1.

**Selection:** The iut support the requirements for the modification requesting entity. PICS: R 2.1.

##### 5.2.1.1.1 Valid behaviour (01)

###### MODN\_01\_01

Ensure that the IUT in N10, to indicate that a PCR modification has been requested,

- sends a MODIFY REQUEST message and enters N13.

###### MODN\_01\_02

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message including a Broadband report type information element, with type of report field different from "Modification confirmation"

- sends no message or optionally send a STATUS message (cause value: 100, call state: 10) and enters N10.



**MODN\_01\_03**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message without broadband report type information element,

- sends no message and enters N10.

**MODN\_01\_04**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message including an empty Broadband report type information element,

- sends no message and enters N10.

**MODN\_01\_05**

Ensure that the IUT in N10, having received a MODIFY ACKNOWLEDGE message, including a broadband report type information element requesting confirmation, to indicate that the modification of the connection has been confirmed by the remote user,

- sends a CONNECTION AVAILABLE message and remains in N10.

**MODN\_01\_06**

Ensure that the IUT in N13, on receipt of a MODIFY REJECT message,

- sends no message and enters N10.

**MODN\_01\_07**

Ensure that the IUT in N13, on receipt of a STATUS message (call state: 10, cause value: 97 or 101) with diagnostic identifying of the MODIFY REQUEST message,

- sends no message and enters N10.

**MODN\_01\_08**

Ensure that the IUT in N13, on receipt of a STATUS message (call state: 10, cause value: 97 or 101) without diagnostic identifying of the MODIFY REQUEST message,

- sends a STATUS ENQUIRY message and remains in N13.

**MODN\_01\_09**

Ensure that the IUT in N13, (having sent a STATUS ENQUIRY message), on receipt of a STATUS message (call state: 14),

- sends no message and remains in N13.

**MODN\_01\_10**

Ensure that the IUT in N13, (having sent a STATUS ENQUIRY message), on receipt of a STATUS message (call state: 10),

- sends no message and enters N10.

**MODN\_01\_11**

Ensure that the IUT in N13, on receipt of a RELEASE message,

- enters N11.

**MODN\_01\_12**

Ensure that the IUT in N13, on receipt of a clearing indication at the remote interface,

- sends a RELEASE message and enters N12.

#### 5.2.1.1.2 Handling of errors conditions (02)

**MODN\_02\_01**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message with a protocol discriminator other than '09'0,

- sends no message and remains in N13.

**MODN\_02\_02**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message with an unused Call Reference (CR),

- sends a RELEASE COMPLETE message (CR of the MODIFY ACKNOWLEDGE message, cause value: 81) and remains in N13.

**MODN\_02\_03**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message with a non mandatory IE content error (Broadband report type; IE\_flag = 0,)

- sends a STATUS message (cause value: 100, call state: 10) and enters N10.

**MODN\_02\_04**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message with a non mandatory IE content error (Broadband report type, IE\_flag = 1, IE\_AI = clear call),

- sends a RELEASE message (cause value: 100) and enters N11.

**MODN\_02\_05**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message with a non mandatory IE content error (Broadband report type, IE\_flag = 1, IE\_AI = discard message and report status),

- sends a STATUS message (cause value: 100, call state: 13) and remains in N13.

**MODN\_02\_06**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message with a non mandatory IE content error (Broadband report type, IE\_flag = 1, IE\_AI = discard message and ignore),

- sends no message and remains in N13.

**MODN\_02\_07**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message with a non mandatory IE content error (Broadband report type, IE\_flag = 1, IE\_AI = discard IE, proceed and report),

- sends a STATUS message (cause value: 100, call state: 10), ignores the IE (sends the MODIFY ACKNOWLEDGE message on the remote interface without this IE) and enters N10.

**MODN\_02\_08**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message with a non mandatory IE content error (Broadband report type, IE\_flag = 1, IE\_AI = discard IE and proceed),

- sends no message, ignores the IE (sends the MODIFY ACKNOWLEDGE message on the remote interface without this IE) and enters N10."

**MODN\_02\_09**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message with an unrecognized IE (IE\_flag = 0),

- sends a STATUS message (cause value: 99, call state: 10), ignores the IE (sends the MODIFY ACKNOWLEDGE message on the remote interface without this IE) and enters N10.

**MODN\_02\_10**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message with an unrecognized IE (IE\_flag = 1, IE\_AI = clear call),

- sends a RELEASE message (cause value: 99) and enters N11.

**MODN\_02\_11**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message with an unrecognized IE (IE\_flag = 1, IE\_AI = discard message and report status),

- sends a STATUS message (cause value: 99, call state: 13) and remains in N13.

**MODN\_02\_12**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message with an unrecognized IE (IE\_flag = 1, IE\_AI = discard message and ignore),

- sends no message and remains in N13.

**MODN\_02\_13**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message with an unrecognized IE (IE\_flag = 1, IE\_AI = discard IE, discard IE, proceed and report status),

- sends a STATUS message (cause:99, call state: 10), ignores the IE (sends the MODIFY ACKNOWLEDGE message on the remote interface without this IE) and enters N10.

**MODN\_02\_14**

Ensure that the IUT in N13, on receipt of a MODIFY ACKNOWLEDGE message with an unrecognized IE (IE\_flag = 1, IE\_AI = discard IE, and proceed),

- sends no message, ignores the IE (sends a valid MODIFY ACKNOWLEDGE message on the remote interface) and enters N10.

**MODN\_02\_15**

Ensure that the IUT in N13, on receipt of a MODIFY REJECT message with a protocol discriminator other than '09'O,

- sends no message and remains in N13.

**MODN\_02\_16**

Ensure that the IUT in N13, on receipt of a MODIFY REJECT message with an unused CR,

- sends a RELEASE COMPLETE message (CR of the MODIFY REJECT message, cause value: 81) and remains in N13.

**MODN\_02\_17**

Ensure that the IUT in N13, on receipt of a MODIFY REJECT message with a mandatory IE content error (Cause IE, IE\_flag = 0),

- sends a STATUS message (cause value: 100, call state: 13) and remains in N13.

**MODN\_02\_18**

Ensure that the IUT in N13, on receipt of a MODIFY REJECT message with a mandatory IE missing (Cause IE),

- sends a STATUS message (cause value: 96, call state: 13) and remains in N13.

**MODN\_02\_19**

Ensure that the IUT in N13, on receipt of a MODIFY REJECT message with a mandatory IE content error (Cause IE; IE\_flag = 1, IE\_AI = clear call),

- sends a RELEASE message (cause value: 100) and enters N11.

**MODN\_02\_20**

Ensure that the IUT in N13, on receipt of a MODIFY REJECT message with a mandatory IE content error (Cause IE; IE\_flag = 1, IE\_AI = discard message and report status),

- sends a STATUS message (cause value: 100, call state: 13) and remains in N13.

**MODN\_02\_21**

Ensure that the IUT in N13, on receipt of a MODIFY REJECT message with a mandatory IE content error (Cause IE, IE\_flag = 1, IE\_AI = discard message and ignore),

- sends no message and remains in N13.

**MODN\_02\_22**

Ensure that the IUT in N13, on receipt of a MODIFY REJECT message with a mandatory IE content error (Cause IE, IE\_flag = 1, IE\_AI = discard IE, proceed and report),

- sends a STATUS message (cause value: 100, call state: 10), ignores the IE (sends the MODIFY REJECT message on the remote interface with one of the cause values: 31 or 47) and enters N10.

**MODN\_02\_23**

Ensure that the IUT in N13, on receipt of a MODIFY REJECT message with a mandatory IE content error (Cause IE, IE\_flag = 1, IE\_AI = discard IE and proceed),

- sends no message, ignores the IE (sends the MODIFY REJECT message on the remote interface with one of the cause values = 31 or 47) and enters N10.

**MODN\_02\_24**

Ensure that the IUT in N13, on receipt of a MODIFY REJECT message with an unrecognized IE (IE\_flag = 0),

- sends a STATUS message (cause value: 99, call state: 10) and enters N10.

**MODN\_02\_25**

Ensure that the IUT in N13, on receipt of a MODIFY REJECT message with an unrecognized IE (IE\_flag = 1, IE\_AI = clear call),

- sends a RELEASE message (cause value: 99) and enters N11.

**MODN\_02\_26**

Ensure that the IUT in N13, on receipt of a MODIFY REJECT message with an unrecognized IE (IE\_flag = 1, IE\_AI = discard message and report status),

- sends a STATUS message (cause value: 99, call state: 13) and remains in N13.

**MODN\_02\_27**

Ensure that the IUT in N13, on receipt of a MODIFY REJECT message with an unrecognized IE (IE\_flag = 1, IE\_AI = discard message and ignore),

- sends no message and remains in N13.

**MODN\_02\_28**

Ensure that the IUT in N10, for an incoming call, on receipt of a MODIFY REQUEST message (MSG\_flag = 0),

- sends a STATUS message (cause value: 101, call state: 10) and remains in N10.

**MODN\_02\_29**

Ensure that the IUT in N10, for an incoming call, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = clear call),

- sends a RELEASE message (cause value: 101) and enters N11.

**MODN\_02\_30**

Ensure that the IUT in N10, for an incoming call, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = discard message and ignore),

- sends no message and remains in N10.

**MODN\_02\_31**

Ensure that the IUT in N10, for an incoming call, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = discard message and report),

- sends a STATUS message (cause value: 101, call state: 10) and remains in N10.

**MODN\_02\_32**

Ensure that the IUT in N10 on receipt of a MODIFY ACKNOWLEDGE message (MSG\_flag = 0),

- sends a STATUS message (cause value: 101, call state: 10) and remains in N10.

**MODN\_02\_33**

Ensure that the IUT in N10, for an incoming call, on receipt of a MODIFY ACKNOWLEDGE message (MSG\_flag = 1; MSG\_AI = clear call),

- sends a RELEASE message (cause value: 101) and enters N11.

**MODN\_02\_34**

Ensure that the IUT in N10, for an incoming call, on receipt of a MODIFY ACKNOWLEDGE message (MSG\_flag = 1; MSG\_AI = discard message and ignore),

- sends no message and remains in N10.

**MODN\_02\_35**

Ensure that the IUT in N10, for an incoming call, on receipt of a MODIFY ACKNOWLEDGE message (MSG\_flag = 1; MSG\_AI = discard message and report),

- sends a STATUS message (cause value: 101, call state: 10) and remains in N10.

**MODN\_02\_36**

Ensure that the IUT in N10 on receipt of a MODIFY REJECT message(MSG\_flag = 0),

- sends a STATUS message (cause value: 101, call state: 10) and remains in N10.

**MODN\_02\_37**

Ensure that the IUT in N10, on receipt of a MODIFY REJECT message(MSG\_flag = 1; MSG\_AI = clear call),

- sends a RELEASE message (cause value: 101) and enters N11.

**MODN\_02\_38**

Ensure that the IUT in N10, on receipt of a MODIFY REJECT message(MSG\_flag = 1; MSG\_AI = discard and ignore),

- sends no message and remains in N10.

**MODN\_02\_39**

Ensure that the IUT in N10, on receipt of a MODIFY REJECT message(MSG\_flag = 1; MSG\_AI = discard and ignore),

- sends a STATUS message (cause value: 101, call state: 10) and remains in N10.

**MODN\_02\_40**

Ensure that the IUT in N11, on receipt of a MODIFY ACKNOWLEDGE message (MSG\_flag = 0),

- sends a STATUS message (cause value: 101, call state: 11) and remains in N11.

**MODN\_02\_41**

Ensure that the IUT in N11, on receipt of a MODIFY ACKNOWLEDGE message (MSG\_flag = 1, MSG\_AI = clear call)

- sends no message and remains in N11.

**MODN\_02\_42**

Ensure that the IUT in N11, on receipt of a MODIFY ACKNOWLEDGE message (MSG\_flag = 1, MSG\_AI = discard and ignore)

- sends no message and remains in N11.

**MODN\_02\_43**

Ensure that the IUT in N11, on receipt of a MODIFY ACKNOWLEDGE message (MSG\_flag = 1, MSG\_AI = discard and report)

- sends a STATUS message (cause value: 101, call state: 11) and remains in N11.

**MODN\_02\_44**

Ensure that the IUT in N11, on receipt of a MODIFY ACKNOWLEDGE message (MSG\_flag = 1, MSG\_AI = reserved)

- sends a STATUS message (cause value: 101, call state: 11) and remains in N11.

**MODN\_02\_45**

Ensure that the IUT in N11, on receipt of a MODIFY REJECT message (MSG\_flag = 0)

- sends a STATUS message (cause value: 101, call state: 11) and remains in N11.

**MODN\_02\_46**

Ensure that the IUT in N12, on receipt of a MODIFY ACKNOWLEDGE message (MSG\_flag = 0)

- sends a STATUS message (cause value: 101, call state: 12) and remains in N12.

**MODN\_02\_47**

Ensure that the IUT in N12, on receipt of a MODIFY REJECT message (MSG\_flag = 0)

- sends a STATUS message (cause value: 101, call state: 12) and remains in N12."

**5.2.1.1.3 Timers (03)**

Test purposes for EN 301 003-1 [3] subclause 9.1.5.

**MODN\_03\_01**

Ensure that the IUT in N13, on expiry of timer T360,

- sends a RELEASE message with a cause information element indicating a cause value 102 "Recover on timer expiry" and enters N11.

**5.2.1.2 Modification procedures at the responding entity**

Test purposes for EN 301 003-1 [3] subclause 9.2.

**Selection:** The iut support the requirements for the modification responding entity. PICS: R 2.2.

**5.2.1.2.1 Valid behaviour (04)****MODN\_04\_01**

Ensure that the IUT in N10, on receipt of a MODIFY REQUEST message, with compatible parameters in the ATM traffic descriptor information element,

- sends no message and enters call state N14.

**MODN\_04\_02**

Ensure that the IUT in N10, on receipt of a MODIFY REQUEST message, with an incompatible combination of parameters in the ATM traffic descriptor information element,

- sends a MODIFY REJECT message with a cause information element indicating a cause value 73 "Unsupported combination of traffic parameters" and re-enters the state N10.

**MODN\_04\_03**

Ensure that the IUT in N14, to indicate that a modification of the connection parameters has been accepted by the remote user not requesting confirmation,

- sends a MODIFY ACKNOWLEDGE message without a Broadband report type IE and enters N10.

**MODN\_04\_04**

Ensure that the IUT in N14, to indicate that a modification of the connection parameters has been accepted by the remote user requesting confirmation of modification,

- sends a MODIFY ACKNOWLEDGE message with a Broadband report type IE (type of report = modification confirmation) and enters N10."

**MODN\_04\_05**

Ensure that the IUT in N10, having sent a MODIFY ACKNOWLEDGE message including a broadband report type information element requesting confirmation, on receipt of a CONNECTION AVAILABLE message,

- sends no message and remains in N10.

**MODN\_04\_06**

Ensure that the IUT in N14, to indicate that a modification of the connection parameters has been rejected by the remote user,

- sends a MODIFY REJECT (including the originating cause value) message and enters N10.

**MODN\_04\_07**

Ensure that the IUT in N14, on receipt of a RELEASE message,

- enters N11.

**MODN\_04\_08**

Ensure that the IUT in N14, on receipt of a clearing indication at the remote interface,

- sends a RELEASE message and enters N12."

### 5.2.1.2.2 Handling of error conditions (05)

**MODN\_05\_01**

Ensure that the IUT in N10, on receipt of a MODIFY REQUEST message with a protocol discriminator other than '09'0,

- sends no message and remains in N10.

**MODN\_05\_02**

Ensure that the IUT in N10, on receipt of a MODIFY REQUEST message with a unused CR,

- sends a RELEASE COMPLETE message (CR of the MODIFY REQUEST message, cause value: 81) and remains in N10.

**MODN\_05\_03**

Ensure that the IUT in N10, on receipt of a MODIFY REQUEST message with a mandatory IE missing (ATM traffic descriptor IE),

- sends a STATUS message (cause value: 96, call state: 10) and remains in N10.

**MODN\_05\_04**

Ensure that the IUT in N10, on receipt of a MODIFY REQUEST message with a mandatory IE content error (ATM traffic descriptor IE; IE\_flag = 0),

- sends a STATUS message (cause value: 100, call state: 10) and remains in N10.

**MODN\_05\_05**

Ensure that the IUT in N10, on receipt of a MODIFY REQUEST message with a mandatory IE content error (ATM traffic descriptor IE; IE\_flag = 1, IE\_AI = clear call),

- sends a RELEASE message (cause value: 100) and enters N11.

**MODN\_05\_06**

Ensure that the IUT in N10, on receipt of a MODIFY REQUEST message with a mandatory IE content error (ATM traffic descriptor IE; IE\_flag = 1, IE\_AI = discard message and report status),

- sends a STATUS message (cause value: 100, call state: 10) and remains in N10.

**MODN\_05\_07**

Ensure that the IUT in N10, on receipt of a MODIFY REQUEST message with a mandatory IE content error (ATM traffic descriptor IE; IE\_flag = 1, IE\_AI = discard message and ignore),

- sends no message and remains in N10.

**MODN\_05\_08**

Ensure that the IUT in N0, on receipt of a MODIFY REQUEST message (MSG\_flag = 0),

- sends a RELEASE COMPLETE message (cause value: 81) and remains in N0.

**MODN\_05\_09**

Ensure that the IUT in N1, on receipt of a MODIFY REQUEST message (MSG\_flag = 0),

- sends a STATUS message (cause value: 101, call state: 1) and remains in N1.

**MODN\_05\_10**

Ensure that the IUT in N3, on receipt of a MODIFY REQUEST message (MSG\_flag = 0),

- sends a STATUS message (cause value: 101, call state: 3) and remains in N3.

**MODN\_05\_11**

Ensure that the IUT in N4, on receipt of a MODIFY REQUEST message (MSG\_flag = 0),

- sends a STATUS message (cause value: 101, call state: 4) and remains in N4.

**MODN\_05\_12**

Ensure that the IUT in N6, on receipt of a MODIFY REQUEST message, (MSG\_flag = 0),

- sends a STATUS message (cause value: 101, call state: 6) and remains in N6.

**MODN\_05\_13**

Ensure that the IUT in N7, on receipt of a MODIFY REQUEST message (MSG\_flag = 0),

- sends a STATUS message (cause value: 101, call state: 7) and remains in N7.

**MODN\_05\_14**

Ensure that the IUT in N9, on receipt of a MODIFY REQUEST message (MSG\_flag = 0),

- sends a STATUS message (cause value: 101, call state: 9) and remains in N9.

**MODN\_05\_15**

Ensure that the IUT in N12, on receipt of a MODIFY REQUEST message (MSG\_flag = 0),

- sends a STATUS message (cause value: 101, call state: 12) and remains in N12.

**MODN\_05\_16**

Ensure that the IUT in N0, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = clear call),

- sends a RELEASE COMPLETE message (causevalue: 81) and remains in N0.

**MODN\_05\_17**

Ensure that the IUT in N1, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = clear call),

- sends a RELEASE message (cause value: 101) and enters N11.

**MODN\_05\_18**

Ensure that the IUT in N3, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = clear call),

- sends a RELEASE message (cause value: 101) and enters N11.

**MODN\_05\_19**

Ensure that the IUT in N4, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = clear call),

- sends a RELEASE message (cause value: 101) and enters N11.

**MODN\_05\_20**

Ensure that the IUT in N6, on receipt of a MODIFY REQUEST message, (MSG\_flag = 1; MSG\_AI = clear call),

- sends a RELEASE message (cause value: 101) and enters N11.

**MODN\_05\_21**

Ensure that the IUT in N7, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = clear call),

- sends a RELEASE message (cause value: 101) and enters N11.

**MODN\_05\_22**

Ensure that the IUT in N9, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = clear call),

- sends a RELEASE message (cause value: 101) and enters N11.

**MODN\_05\_23**

Ensure that the IUT in N12, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = clear call),

- sends no message and remains in N12.

**MODN\_05\_24**

Ensure that the IUT in N7, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = discard message and ignore),

- sends no message and remains in N7.

**MODN\_05\_25**

Ensure that the IUT in N7, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = discard message and report status status),

- sends a STATUS message (cause value: 101, call state: 7) and remains in N7.

**MODN\_05\_26**

Ensure that the IUT in N7, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = reserved),

- sends a STATUS message (cause value: 101, call state: 7) and remains in N7.

**MODN\_05\_27**

Ensure that the IUT in N9, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = discard message and ignore),

- sends no message and remains in N9.

**MODN\_05\_28**

Ensure that the IUT in N9, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = discard message and report status status),

- sends a STATUS message (cause value: 101, call state: 9) and remains in N9.

**MODN\_05\_29**

Ensure that the IUT in N9, on receipt of a MODIFY REQUEST message (MSG\_flag = 1; MSG\_AI = reserved),

- sends a STATUS message (cause value: 101, call state: 9) and remains in N9.

**MODN\_05\_30**

Ensure that the IUT in N10, on receipt of a CONNECTION AVAILABLE message with a protocol discriminator other than '09'0,

- sends no message and remains in N10.

**MODN\_05\_31**

Ensure that the IUT in N10, on receipt of a CONNECTION AVAILABLE message with a unused CR,

- sends a RELEASE COMPLETE message (CR of the CONNECTION AVAILABLE message, cause value: 81) and remains in N10.

**MODN\_05\_32**

Ensure that the IUT in N10, on receipt of a CONNECTION AVAILABLE message with an unrecognized IE (IE\_flag = 1, IE\_AI = clear call),

- sends a RELEASE message (cause value: 99) and enters N11.

**MODN\_05\_33**

Ensure that the IUT in N10, on receipt of a CONNECTION AVAILABLE message with an unrecognized IE (IE\_flag = 1, IE\_AI = discard message and report status),

- sends a STATUS message (cause value: 99, call state: 10) and remains in N10.



**MODN\_05\_34**

Ensure that the IUT in N10, on receipt of a CONNECTION AVAILABLE message with an unrecognized IE (IE\_flag = 1, IE\_AI = discard message and ignore),

- sends no message and remains in N10.

**MODN\_05\_35**

Ensure that the IUT in N10, on receipt of a CONNECTION AVAILABLE message with an unrecognized IE (IE\_flag = 1, IE\_AI = discard IE, discard IE, proceed and report status),

- sends a STATUS message (cause: 99, call state: 10), and remains in N10.

**MODN\_05\_36**

Ensure that the IUT in N10, on receipt of a CONNECTION AVAILABLE message with an unrecognized IE (IE\_flag = 1, IE\_AI = discard IE, and proceed),

- sends no message and remains in N10.

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## 6 Compliance

An ATS which complies with this TSS&TP specification shall:

- a) consist of a set of test cases corresponding to the set or to a subset of the TPs specified in clause 5;
- b) use a TSS which is an appropriate subset of the whole of the TSS specified in clause 4;
- c) use the same naming conventions for the test groups and test cases;
- d) maintain the relationship specified in clause 5 between the test groups and TPs and the entries in the PICS proforma to be used for test case deselection;
- e) comply with ISO/IEC 9646-2 [7].

In the case of a) or b) above, a subset shall be used only where a particular Abstract Test Method (ATM) makes some TPs untestable. All testable TPs from clause 5 shall be included in a compliant ATS.

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## 7 Requirements for a comprehensive testing service

As a minimum the Remote test method, as specified in ISO/IEC 9646-2 [7], shall be used by any organization claiming to provide a comprehensive testing service for network equipment claiming conformance to EN 301 003-1 [3].

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## Bibliography

The following material, though not specifically referenced in the body of the present document (or not publicly available), gives supporting information.

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

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## History

<b>Document history</b>				
V1.1.1	December 1998	Public Enquiry	PE 9917:	1998-12-25 to 1999-04-23
V1.1.2	August 1999	Vote	V 9945:	1999-08-24 to 1999-10-22