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European Standard (Telecommunications series)

**Integrated Services Digital Network (ISDN);
Call Hold (HOLD) supplementary service;
Digital Subscriber Signalling System No. one (DSS1) protocol;
Part 3: Test Suite Structure and Test Purposes (TSS&TP)
specification for the user**



Reference

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Signalling Protocols and Switching (SPS).

The present document is part 3 of a multi-part standard covering the Digital Subscriber Signalling System No. one (DSS1) protocol specification for the Integrated Services Digital Network (ISDN) Call Hold (HOLD) supplementary service, as described below:

- Part 1: "Protocol specification";
- 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".

The present version updates the references to the basic call specifications.

National transposition dates	
Date of adoption of this EN:	19 June 1998
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1 Scope

This third part of EN 300 141 specifies the Test Suite Structure and Test Purposes (TSS&TP) for the User side of the T reference point or coincident S and T reference point (as defined in ITU-T Recommendation I.411 [7]) of implementations conforming to the stage three standard for Call Hold (HOLD) supplementary service for the pan-European Integrated Services Digital Network (ISDN) by means of the Digital Subscriber Signalling System No. one (DSS1) protocol, EN 300 141-1 [1].

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. Other parts specify the TSS&TP and the ATS and partial PIXIT proforma for the Network side of the T reference point or coincident S and T reference point of implementations conforming to EN 300 141-1 [1].

2 Normative references

References may be made to:

- a) specific versions of publications (identified by date of publication, edition number, version number, etc.), in which case, subsequent revisions to the referenced document do not apply; or
- b) all versions up to and including the identified version (identified by "up to and including" before the version identity); or
- c) all versions subsequent to and including the identified version (identified by "onwards" following the version identity); or
- d) publications without mention of a specific version, in which case 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] EN 300 141-1 (V1.2): "Integrated Services Digital Network (ISDN); Call Hold (HOLD) supplementary service ; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [2] EN 300 141-2 (V1.2): "Integrated Services Digital Network (ISDN); Call Hold (HOLD) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 2: Protocol Implementation conformance Statement (PICS) proforma specification".
- [3] ISO/IEC 9646-1: "Information Technology - OSI Conformance Testing Methodology and Framework; Part 1: General Concepts".
- [4] ISO/IEC 9646-2: "Information Technology - OSI Conformance Testing Methodology and Framework; Part 2: Abstract Test Suite specification".
- [5] ISO/IEC 9646-3: "Information Technology - OSI Conformance Testing Methodology and Framework; Part 3: The Tree and Tabular Combined Notation".
- [6] EN 300 196-1: "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [7] ITU-T Recommendation I.411 (1993): "ISDN user-network interfaces - Reference configurations".
- [8] EN 300 403-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification [ITU-T Recommendation Q.931 (1993), modified]".
- [9] ITU-T Recommendation I.112: "Vocabulary and terms for ISDNs".
- [10] CCITT Recommendation E.164: "Numbering plan for the ISDN era".

- [11] ITU-T Recommendation I.210: "Principles of the telecommunication services supported by an ISDN and the means to describe them".
- [12] EN 300 196-2: "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".

3 Definitions

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

3.1 Definitions related to conformance testing

abstract test case: Refer to ISO/IEC 9646-1 [3].

Abstract Test Suite (ATS): Refer to ISO/IEC 9646-1 [3].

Implementation Under Test (IUT): Refer to ISO/IEC 9646-1 [3].

implicit send event: Refer to ISO/IEC 9646-3 [5].

lower tester: Refer to ISO/IEC 9646-1 [3].

point of control and observation: Refer to ISO/IEC 9646-1 [3].

Protocol Implementation Conformance Statement (PICS): Refer to ISO/IEC 9646-1 [3].

PICS proforma: Refer to ISO/IEC 9646-1 [3].

Protocol Implementation eXtra Information for Testing (PIXIT): Refer to ISO/IEC 9646-1 [3].

PIXIT proforma: Refer to ISO/IEC 9646-1 [3].

system under test: Refer to ISO/IEC 9646-1 [3].

Test Purpose (TP): Refer to ISO/IEC 9646-1 [3].

3.2 Definitions related to EN 300 141-1

Call Held auxiliary state: See EN 300 196-1 [6], subclause 7.1.2.

component: See EN 300 196-1 [6], subclause 11.2.2.1.

Hold Requested auxiliary state: See EN 300 196-1 [6], subclause 7.1.2.

Idle auxiliary state: See EN 300 196-1 [6], subclause 7.1.2.

Integrated Services Digital Network (ISDN): See ITU-T Recommendation I.112 [9], definition 308.

ISDN number: A number conforming to the numbering and structure specified in CCITT Recommendation E.164 [10].

invoke component: See EN 300 196-1 [6], subclause 11.2.2.1.

Retrieve Requested auxiliary state: See EN 300 196-1 [6], subclause 7.1.2.

return error component: See EN 300 196-1 [6], subclause 11.2.2.1.

return result component: See EN 300 196-1 [6], subclause 11.2.2.1.

served user: The served user is the user who invokes the HOLD supplementary service.

service; telecommunication service: See ITU-T Recommendation I.112 [9], definition 201.

supplementary service: See ITU-T Recommendation I.210 [11], subclause 2.4.

user: The DSS1 protocol entity at the User side of the user-network interface where a T reference point or coincident S and T reference point applies.

user (S/T): The DSS1 protocol entity at the User side of the user-network interface where a coincident S and T reference point applies.

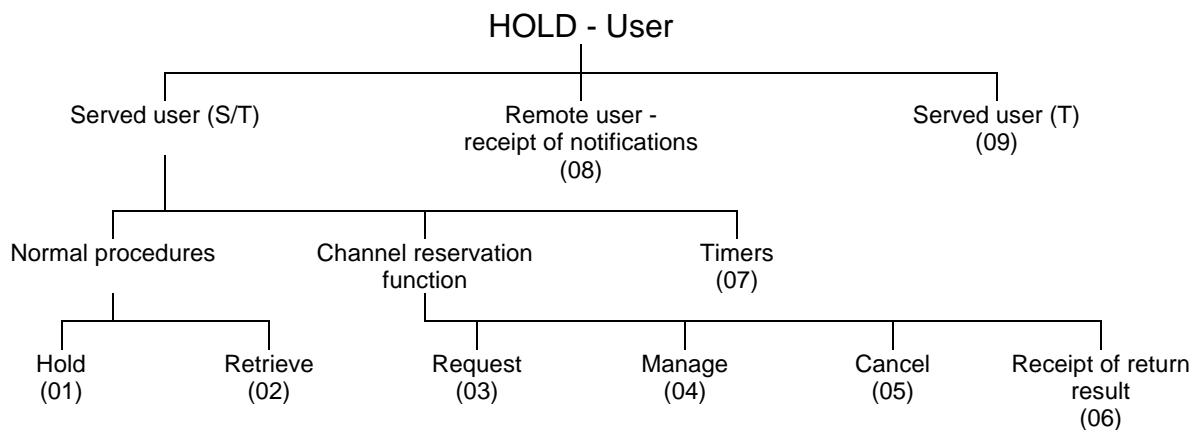
user (T): The DSS1 protocol entity at the user side of the user-network interface where a T reference point applies (commonly referred to as a Private ISDN).

4 Abbreviations

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

ATM	Abstract Test Method
ATS	Abstract Test Suite
DSS1	Digital Subscriber Signalling System No. one
HOLD	Call Hold
ISDN	Integrated Services Digital Network
IUT	Implementation under test
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
TP	Test Purpose
TSS	Test Suite Structure
U04	Call Delivered call state
U07	Call Received call state
U10	Active call state

5 Test Suite Structure (TSS)



NOTE: Numbers in brackets represent group numbers and are used in TP identifiers.

Figure 1: Test suite structure

6 Test Purposes (TP)

6.1 Introduction

For each test requirement a TP is defined.

6.1.1 TP naming convention

TGs 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 network or the user (see table 1).

Table 1: TP identifier naming convention scheme

Identifier: <ss>_<iut><group>_<nnn>			
<ss>	=	supplementary service: e.g. "HOLD"	
<iut>	=	type of IUT:	U User N Network
<group>	=	group	2 digit field representing group reference according to TSS
<nnn>	=	sequential number	(001-999)

6.1.2 Source of TP definition

The TGs are based on EN 300 141-1 [1], clauses 9, 10 and 14.

6.1.3 TP structure

Each TG has been written in a manner which is consistent with all other TGs. The intention of this is to make the TGs more readable and checkable. A particular structure has been used and this is illustrated in table 2. This table should be read in conjunction with any TG, i.e. use a TG as an example to fully understand the table.

Table 2: Structure of a single TG

TP part	Text	Example
Header	<Identifier> <i>tab</i> <paragraph number in base ETS> <i>tab</i> <type of test> <i>tab</i> <condition> <i>CR</i> .	see table 1 subclause 0.0.0 valid, invalid, inopportune mandatory, optional, conditional
Stimulus	Ensure that the IUT in the <basic call state> and <supplementary service state> <trigger> <i>see below for message structure</i> <i>or</i> <goal>	U00, U10, etc. Hold Requested, ... receiving a XXXX message to request a
Reaction	<action> <conditions> <i>if the action is sending</i> <i>see below for message structure</i> <next action>, <i>etc.</i> and remains in the same state <i>or</i> and enters state <state>	sends, saves, does, etc. using en-bloc sending, ...
Message structure	<message type> message containing a a) <info element> information element with b) a <field name> encoded as <i>or</i> including <coding of the field> and <i>back to a or b</i> ,	SETUP, FACILITY, CONNECT, ... Bearer capability, Facility, ...
NOTE:	Text in italics will not appear in TGs and text between <> is filled in for each TG and may differ from one TG to the next.	

6.1.4 Test strategy

As the base standard EN 300 141-1 [1] 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 300 141-2 [2]. The criteria applied included the following:

- only the requirements from the point of view of the T or coincident S and T reference point are considered;
- whether or not a test case can be built from the TP is not considered.

6.2 User TPs for HOLD

All PICS items referred to in this subclause are as specified in EN 300 141-2 [2] unless indicated otherwise by another numbered reference.

6.2.1 Served user (S/T)

Selection: IUT supports coincident S and T reference point procedures. PICS: R 3.1.

6.2.1.1 Normal procedures

6.2.1.1.1 Hold

HOLD_U01_001 subclause 9.1.1 valid mandatory

Ensure that the IUT in the Active call state U10 and Idle auxiliary state to initiate the HOLD service, sends a HOLD message and enters the Hold Requested auxiliary state.

HOLD_U01_002 subclause 9.1.1 valid optional

Ensure that the IUT in the Call Delivered call state U04 and Idle auxiliary state to initiate the HOLD service, sends a HOLD message and enters the Hold Requested auxiliary state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U01_003 subclause 9.1.1 valid mandatory

Ensure that the IUT in the Active call state U10 and Hold Requested auxiliary state receiving a HOLD ACKNOWLEDGE message, releases the B-channel, remains in the Active call state U10 and enters the Call Held auxiliary state.

HOLD_U01_004 subclause 9.1.1 invalid mandatory

Ensure that the IUT in the Active call state U10 and Hold Requested auxiliary state, receiving an HOLD ACKNOWLEDGE message with an optional information element with content error, sends no message or sends a STATUS message cause #100 "invalid information element contents" and enters the Call Held auxiliary state.

HOLD_U01_005 subclause 9.1.1 valid optional

Ensure that the IUT in the Call Delivered call state U04 and Hold Requested auxiliary state, receiving a HOLD ACKNOWLEDGE message, enters the Call Held auxiliary state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U01_006 subclause 9.1.1 invalid optional

Ensure that the IUT in the Call Delivered call state U04 and Hold Requested auxiliary state, receiving a HOLD ACKNOWLEDGE message with an optional information element with content error, sends no message or sends a STATUS message cause #100 "invalid information element contents" and enters the Call Held auxiliary state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U01_007 subclause 9.1.2 **valid** **mandatory**
 Ensure that the IUT in the Active call state U10 and Hold Requested auxiliary state, receiving a HOLD REJECT message,
 does not release the B-channel, remains in the Active call state U10 and enters the Idle auxiliary state.

HOLD_U01_008 subclause 9.1.2 **invalid** **mandatory**
 Ensure that the IUT in the Active call state U10 and Hold Requested auxiliary state, receiving a HOLD REJECT message with an optional information element with content error,
 sends no message or sends a STATUS message cause #100 "invalid information element contents" and enters the Idle auxiliary state.

HOLD_U01_009 subclause 9.1.2 **invalid** **mandatory**
 Ensure that the IUT in the Active call state U10 and Hold Requested auxiliary state, receiving a HOLD REJECT message with a mandatory information element with content error,
 sends a STATUS message cause #100 "invalid information element contents" and remains in the same state.

HOLD_U01_010 subclause 9.1.2 **invalid** **optional**
 Ensure that the IUT in the Call Delivered call state U04 and Hold Requested auxiliary state, receiving a HOLD REJECT message,
 enters the Idle auxiliary state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U01_011 subclause 9.1.2 **invalid** **optional**
 Ensure that the IUT in the Call Delivered call state U04 and Hold Requested auxiliary state, receiving a HOLD REJECT message with an optional information element with content error,
 sends no message or sends a STATUS message cause #100 "invalid information element contents" and enters the Idle auxiliary state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U01_012 subclause 9.1.2 **invalid** **optional**
 Ensure that the IUT in the Call Delivered call state U04 and Hold Requested auxiliary state, receiving a HOLD REJECT message with a mandatory information element with content error,
 sends a STATUS message cause #100 "invalid information element contents" and remains in the same state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

6.2.1.1.2 Retrieve

HOLD_U02_001 subclause 9.3.1 **valid** **mandatory**
 Ensure that the IUT in the Active call state U10 and Call Held auxiliary state to initiate the Retrieve function,
 sends a RETRIEVE message and enters the Retrieve Requested auxiliary state.

HOLD_U02_002 subclause 9.3.1 **valid** **optional**
 Ensure that the IUT in the Call Delivered call state U04 and Call Held auxiliary state to initiate the Retrieve function,
 sends a RETRIEVE message and enters the Retrieve Requested auxiliary state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U02_003 subclause 9.3.1 **valid** **mandatory**
 Ensure that the IUT in the Active call state U10 and Retrieve Requested auxiliary state receiving a RETRIEVE ACKNOWLEDGE message,
 connects to the B channel and enters the Idle auxiliary state.

HOLD_U02_004 subclause 9.3.1 **invalid** **mandatory**
 Ensure that the IUT in the Active call state U10 and Retrieve Requested auxiliary state receiving a RETRIEVE ACKNOWLEDGE message with an optional information element with content error,
 sends no message or sends a STATUS message cause #100 "invalid information element contents" and enters the Idle auxiliary state.

HOLD_U02_005 subclause 9.3.1**valid****optional**

Ensure that the IUT in the Call Delivered call state U04 and Retrieve Requested auxiliary state, receiving a RETRIEVE ACKNOWLEDGE message,
connects to the B channel and enters the Idle auxiliary state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U02_006 subclause 9.3.1**invalid****optional**

Ensure that the IUT in the Call Delivered call state U04 and Retrieve Requested auxiliary state, receiving a RETRIEVE ACKNOWLEDGE message with an optional information element with content error,
sends no message or sends a STATUS message cause #100 "invalid information element contents" and enters the Idle auxiliary state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U02_007 subclause 9.3.2**valid****mandatory**

Ensure that the IUT in the Active call state U10 and Retrieve Requested auxiliary state, receiving a RETRIEVE REJECT message,

does not connect to the B-channel, remains in the Active call state U10 and enters the Call Held auxiliary state.

HOLD_U02_008 subclause 9.3.2**invalid****mandatory**

Ensure that the IUT in the Active call state U10 and Retrieve Requested auxiliary state, receiving a RETRIEVE REJECT message with an optional information element with content error,

sends no message or, sends a STATUS message cause #100 "invalid information element contents" and enters the Idle auxiliary state.

HOLD_U02_009 subclause 9.3.2**invalid****mandatory**

Ensure that the IUT in the Active call state U10 and Retrieve Requested auxiliary state, receiving a RETRIEVE REJECT message with a mandatory information element with content error,

sends a STATUS message cause #100 "invalid information element contents" and remains in the same state.

HOLD_U02_010 subclause 9.3.2**valid****optional**

Ensure that the IUT in the Call Delivered call state U04 and Retrieve Requested auxiliary state, receiving a RETRIEVE REJECT message,

enters the Call Held auxiliary state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U02_011 subclause 9.3.2**invalid****optional**

Ensure that the IUT in the Call Delivered call state U04 and Retrieve Requested auxiliary state, receiving a RETRIEVE REJECT message with an optional information element with content error,

sends no message or sends a STATUS message cause #100 "invalid information element contents" and enters the Idle auxiliary state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U02_012 subclause 9.3.2**invalid****optional**

Ensure that the IUT in the Call Delivered call state U04 and Retrieve Requested auxiliary state, receiving a RETRIEVE REJECT message with a mandatory information element with content error,

sends a STATUS message cause #100 "invalid information element contents" and remains in the same state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

6.2.1.2 Channel reservation function

Selection: IUT supports explicit channel reservation function. PICS: [12] MCu 4.2.

6.2.1.2.1 Request

HOLD_U03_001 subclause 9.1.1 **valid** **optional**

Ensure that the IUT in the Call Delivered call state U04 and Idle auxiliary state, to request an explicit reservation, sends an ExplicitReservationCreationControl invoke component, in a Facility information element in a HOLD message and enters the Hold Request state or in a FACILITY, or INFORMATION message and remains in the same state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U03_002 subclause 9.1.1 **valid** **mandatory**

Ensure that the IUT in the Active call state U10 and Idle auxiliary state, to request an explicit reservation, sends an ExplicitReservationCreationControl invoke component, in a Facility information element in a HOLD message and enters the Hold Request state or in a FACILITY, or INFORMATION message and remains in the same state.

HOLD_U03_003 subclause 9.1.1 **valid** **optional**

Ensure that the IUT in the Call Delivered call state U04 and Call Held auxiliary state to request an explicit reservation, sends an ExplicitReservationCreationControl invoke component, in a Facility information element in a RETRIEVE message and enters to the Retrieve Request auxiliary state or in a FACILITY, or INFORMATION message and remains in the same state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U03_004 subclause 9.1.1 **valid** **mandatory**

Ensure that the IUT in the Active call state U10 and Call Held auxiliary state to request an explicit reservation, sends an ExplicitReservationCreationControl invoke component, in a Facility information element in a RETRIEVE message and enters to the Retrieve Request auxiliary state or in a FACILITY or INFORMATION message and remains in the same state.

6.2.1.2.2 Manage

HOLD_U04_001 subclause 9.1.1 **valid** **optional**

Ensure that the IUT in the Call Delivered call state U04 and Call Held auxiliary state to manage an explicit reservation with reservation indicator, sends an ExplicitReservationManagement invoke component with the reservation indicator in a Facility information element in a RETRIEVE message.

Selection: the IUT is able to handle a reservation with reservation indicator.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U04_002 subclause 9.1.1 **valid** **optional**

Ensure that the IUT in the Call Delivered call state U04 and Call Held auxiliary state to manage an explicit reservation without reservation indicator, sends an ExplicitReservationManagement invoke component without reservation indicator in a Facility information element in a RETRIEVE message.

Selection: the IUT is able to handle a reservation without reservation indicator.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U04_003 subclause 9.1.1 **valid** **optional**

Ensure that the IUT in the Active call state U10 and Call Held auxiliary state to manage an explicit reservation with reservation indicator, sends an ExplicitReservationManagement invoke component with the reservation indicator in a Facility information element in a RETRIEVE message.

Selection: the IUT is able to handle a reservation with reservation indicator.

HOLD_U04_004 subclause 9.1.1**valid****optional**

Ensure that the IUT in the Active call state U10 and Call Held auxiliary state to manage an explicit reservation without reservation indicator,

sends an ExplicitReservationManagement invoke component without reservation indicator in a Facility information element in a RETRIEVE message.

Selection: the IUT is able to handle a reservation without reservation indicator.

6.2.1.2.3 Cancel

HOLD_U05_001 subclause 9.1.1**valid****optional**

Ensure that the IUT in the Call Delivered call state U04 and Idle auxiliary state to cancel an explicit reservation with reservation indicator,

sends an ExplicitReservationCancel invoke component with the reservation indicator in a Facility information element in a FACILITY or INFORMATION message.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U05_002 subclause 9.1.1**valid****optional**

Ensure that the IUT in the Call Delivered call state U04 and Idle auxiliary state to cancel an explicit reservation without reservation indicator,

sends an ExplicitReservationCancel invoke component without reservation indicator in a Facility information element in a FACILITY or INFORMATION message.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U05_003 subclause 9.1.1**valid****mandatory**

Ensure that the IUT in the Active call state U10 and Idle auxiliary state to cancel an explicit reservation with reservation indicator,

sends an ExplicitReservationCancel invoke component with the reservation indicator in a Facility information element in a FACILITY or INFORMATION message.

HOLD_U05_004 subclause 9.1.1**valid****mandatory**

Ensure that the IUT in the Active call state U10 and Idle auxiliary state to cancel an explicit reservation without reservation indicator,

sends an ExplicitReservationCancel invoke component without reservation indicator in a Facility information element in a FACILITY or INFORMATION message.

HOLD_U05_005 subclause 9.1.1**valid****optional**

Ensure that the IUT in the Call Delivered call state U04 and Idle auxiliary state to cancel an explicit reservation with reservation indicator,

sends an ExplicitReservationCancel invoke component with the reservation indicator in a Facility information element in a HOLD message and enters the Held Request auxiliary state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U05_006 subclause 9.1.1**valid****optional**

Ensure that the IUT in the Call Delivered call state U04 and Idle auxiliary state to cancel an explicit reservation without reservation indicator,

sends an ExplicitReservationCancel invoke component without reservation indicator in a Facility information element in a HOLD message and enters the Held Request auxiliary state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U05_007 subclause 9.1.1**valid****mandatory**

Ensure that the IUT in the Active call state U10 and Idle auxiliary state to cancel an explicit reservation with reservation indicator,

sends an ExplicitReservationCancel invoke component with the reservation indicator in a Facility information element in a HOLD message and enters the Held Request auxiliary state.

HOLD_U05_008 subclause 9.1.1 valid mandatory

Ensure that the IUT in the Active call state U10 and Idle auxiliary state to cancel an explicit reservation without reservation indicator,

sends an ExplicitReservationCancel invoke component without reservation indicator in a Facility information element in a HOLD message and enters the Held Request auxiliary state.

HOLD_U05_009 subclause 9.1.1 valid optional

Ensure that the IUT in the Call Delivered call state U04 and Call Held auxiliary state to cancel an explicit reservation with reservation indicator,

sends an ExplicitReservationCancel invoke component with the reservation indicator in a RETRIEVE, FACILITY or INFORMATION message.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U05_010 subclause 9.1.1 valid optional

Ensure that the IUT in the Call Delivered call state U04 and Call Held auxiliary state to cancel an explicit reservation without reservation indicator,

sends an ExplicitReservationCancel invoke component without reservation indicator in a RETRIEVE, FACILITY or INFORMATION message.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U05_011 subclause 9.1.1 valid mandatory

Ensure that the IUT in the Active call state U10 and Call Held auxiliary state to cancel an explicit reservation with reservation indicator,

sends an ExplicitReservationCancel invoke component without reservation indicator in a RETRIEVE, FACILITY or INFORMATION message.

HOLD_U05_012 subclause 9.1.1 valid mandatory

Ensure that the IUT in the Active call state U10 and Call Held auxiliary state to cancel an explicit reservation without reservation indicator,

sends an ExplicitReservationCancel invoke component with the reservation indicator in a RETRIEVE, FACILITY or INFORMATION message.

6.2.1.2.4 Receipt of return result

HOLD_U06_001 subclause 9.1.1 valid optional

Ensure that the IUT in the Call Delivered call state U04 and Hold Request auxiliary state receiving a HOLD ACKNOWLEDGE message with an ExplicitReservationCreationControl return result component in a Facility information element,

does not send a message with the ExplicitReservationCreationControl reject component in a Facility information element.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U06_002 subclause 9.1.1 valid mandatory

Ensure that the IUT in the Active call state U10 and Hold Request auxiliary state receiving a HOLD ACKNOWLEDGE message with an ExplicitReservationCreationControl return result component in a Facility information element,

does not send a message with the ExplicitReservationCreationControl reject component in a Facility information element.

HOLD_U06_003 subclause 9.1.1 valid optional

Ensure that the IUT in the Call Delivered call state U04 and Retrieve Request auxiliary state receiving a RETRIEVE ACKNOWLEDGE message with an ExplicitReservationCreationControl return result component in a Facility information element,

does not send a message with the ExplicitReservationCreationControl reject component in a Facility information element.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U06_004 subclause 9.1.1**valid****mandatory**

Ensure that the IUT in the Active call state U10 and Retrieve Request auxiliary state receiving a RETRIEVE ACKNOWLEDGE message with an ExplicitReservationCreationControl return result component in a Facility information element,

does not send a message with the ExplicitReservationCreationControl reject component in a Facility information element.

HOLD_U06_005 subclause 9.1.1**valid****optional**

Ensure that the IUT in the Call Delivered call state U04 and Retrieve Request auxiliary state, receiving a RETRIEVE ACKNOWLEDGE message with an ExplicitReservationManagement return result component in a Facility information element,

does not send a message with the ExplicitReservationManagement reject component in a Facility information element.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U06_006 subclause 9.1.1**valid****mandatory**

Ensure that the IUT in the Active call state U10 and Retrieve Request auxiliary state, receiving a RETRIEVE ACKNOWLEDGE message with an ExplicitReservationManagement return result component in a Facility information element,

does not send a message with the ExplicitReservationManagement reject component in a Facility information element.

HOLD_U06_007 subclause 9.1.1**valid****optional**

Ensure that the IUT in the Call Delivered call state U04 and Hold Request auxiliary state, receiving a HOLD ACKNOWLEDGE message with an ExplicitReservationCancel return result component in a Facility information element,

does not send a message with the ExplicitReservationCancel reject component in a Facility information element.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U06_008 subclause 9.1.1**valid****mandatory**

Ensure that the IUT in the Active call state U10 and Hold Request auxiliary state, receiving a HOLD ACKNOWLEDGE message with an ExplicitReservationCancel return result component in a Facility information element,

does not send a message with the ExplicitReservationCancel reject component in a Facility information element.

HOLD_U06_009 subclause 9.1.1**valid****optional**

Ensure that the IUT in the Call Delivered call state U04 and Retrieve Request auxiliary state, receiving a RETRIEVE ACKNOWLEDGE message with an ExplicitReservationCancel return result component in a Facility information element,

does not send a message with the ExplicitReservationCancel reject component in a Facility information element.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U06_0010 subclause 9.1.1**valid****mandatory**

Ensure that the IUT in the Active call state U10 and Retrieve Request auxiliary state, receiving a RETRIEVE ACKNOWLEDGE message with an ExplicitReservationCancel return result component in a Facility information element,

does not send a message with the ExplicitReservationCancel reject component in a Facility information element.

6.2.1.3 Timers**HOLD_U07_001 clause 13****valid****optional**

Ensure that the IUT in the Call Delivered call state U04 and entering the Hold Request auxiliary state, receiving no HOLD ACKNOWLEDGE or HOLD REJECT message before the expiry of the timer T-HOLD, enters the Idle auxiliary state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U07_002 clause 13 **valid** **optional**
 Ensure that the IUT in the Call Delivered call state U04 and entering the Retrieve Request auxiliary state, receiving no RETRIEVE ACKNOWLEDGE or RETRIEVE REJECT message before the expiry of the timer T-RETRIEVE, enters the Call Held auxiliary state.

Selection: IUT supports holding a call in call state U04. PICS: MC 1.2.

HOLD_U07_003 subclause 9.1.1 and clause 13 **valid** **mandatory**
 Ensure that the IUT in the Active call state U10 and entering the Hold Request auxiliary state, receiving no HOLD ACKNOWLEDGE or HOLD REJECT message before the expiry of the timer T-HOLD, does not release the B-channel and remains in the Active call state.

HOLD_U07_004 subclause 9.3.1 and clause 13 **valid** **mandatory**
 Ensure that the IUT in the Active call state U10 and entering the Retrieve Request auxiliary state, receiving no RETRIEVE ACKNOWLEDGE or RETRIEVE REJECT message before the expiry of the timer T-RETRIEVE, does not connect to the B-channel and remains in the Active call state.

6.2.2 Remote user - receipt of notifications

NOTE: This group of tests applies to IUTs supporting combined S and T reference point procedures or T reference point procedures - the behaviour is the same for both.

HOLD_U08_001 subclauses 9.2.1 and 10.2.1 **valid** **mandatory**
 Ensure that the IUT in the Active call state U10 receiving a NOTIFY message with a notification indicator information element coded as "remote hold", does not respond and remains in the same state.

HOLD_U08_002 subclauses 9.2.1 and 10.2.1 **valid** **mandatory**
 Ensure that the IUT in the Active call state U10 receiving a FACILITY message with a notification indicator information element coded as "remote hold", does not respond and remains in the same state.

HOLD_U08_003 subclauses 9.2.1 and 10.2.1 **valid** **mandatory**
 Ensure that the IUT in the Call Received call state U07 receiving a NOTIFY message with a notification indicator information element coded as "remote hold", does not respond and remains in the same state.

HOLD_U08_004 subclauses 9.2.1 and 10.2.1 **valid** **mandatory**
 Ensure that the IUT in the Call Received call state U07 receiving a FACILITY message with a notification indicator information element coded as "remote hold", does not respond and remains in the same state.

HOLD_U08_005 subclauses 9.4.1 and 10.2.1 **valid** **mandatory**
 Ensure that the IUT in the Active call state U10 receiving a NOTIFY message with a notification indicator information element coded as "remote retrieval", does not respond and remains in the same state.

HOLD_U08_006 subclauses 9.4.1 and 10.2.1 **valid** **mandatory**
 Ensure that the IUT in the Active call state U10 receiving a FACILITY message with a notification indicator information element coded as "remote retrieval", does not respond and remains in the same state.

HOLD_U08_007 subclauses 9.4.1 and 10.2.1 **valid** **mandatory**
 Ensure that the IUT in the Call Received call state U07 receiving a NOTIFY message with a notification indicator information element coded as "remote retrieval", does not respond and remains in the same state.

HOLD_U08_008 subclauses 9.4.1 and 10.2.1 **valid** **mandatory**
 Ensure that the IUT in the Call Received call state U07 receiving a FACILITY message with a notification indicator information element coded as "remote retrieval", does not respond and remains in the same state.

6.2.3 User (T)

Selection: IUT supports T reference point procedures. PICS R 3.2.

HOLD_U09_001 subclause 10.1.1 **valid** **mandatory**

Ensure that the IUT in the Active call state U10 and the served user has reached the Call Held state, sends a notification indicator information element coded as "remote hold" in a NOTIFY or FACILITY message.

HOLD_U09_002 subclause 10.1.1 **valid** **optional**

Ensure that the IUT in the Call Delivered call state U04 and the served user has reached the Call Held state, sends a notification indicator information element coded as "remote hold" in a NOTIFY or FACILITY message.

Selection: The private Network supports call hold in Call Delivered call state. PICS: MC 2.2.

HOLD_U09_003 subclause 10.1.1 **valid** **mandatory**

Ensure that the IUT in the Active call state U10 and the served user has reached the Idle state from the Call Held state, sends a notification indicator information element coded as "remote retrieval" in a NOTIFY or FACILITY message.

HOLD_U09_004 subclause 10.1.1 **valid** **optional**

Ensure that the IUT in the Call Delivered call state U04 and the served user has reached the Idle status from the Call Held state, sends a notification indicator information element coded as "remote retrieval" in a NOTIFY or FACILITY message.

Selection: The private Network supports call hold in Call Delivered call state. PICS: MC 2.2.

7 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 6;
- b) use a TSS which is an appropriate subset of the whole of the TSS specified in clause 5;
- c) use the same naming conventions for the test groups and test cases;
- d) maintain the relationship specified in clause 6 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 [4].

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 6 shall be included in a compliant ATS.

8 Requirements for a comprehensive testing service

As a minimum the Remote test method, as specified in ISO/IEC 9646-2 [4], shall be used by any organization claiming to provide a comprehensive testing service for user equipment claiming conformance to EN 300 141-1 [1].

Annex A (informative): Changes with respect to the previous ETS 300 141-3

The following changes have been done:

- conversion to EN layout;
- substitution of non-specific references to basic standards where the intention is to refer to the latest version.

History

Document history		
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