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Part 3: Test Suite Structure and Test Purposes (TSS&TP)  
specification for the user**

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## Foreword

This draft European Telecommunication Standard (ETS) has been produced by the Signalling Protocols and Switching (SPS) Technical Committee of the European Telecommunications Standards Institute (ETSI), and is now submitted for the Public Enquiry phase of the ETSI standards approval procedure.

This ETS 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: "TSS&TP specification for the network";
- Part 6: "ATS and partial PIXIT proforma specification for the network".

<b>Proposed transposition dates</b>	
Date of latest announcement of this ETS (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this ETS (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 third part of ETS 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 Digital Subscriber Signalling System No. one (DSS1) protocol.

A further part of this ETS specifies the Abstract Test Suite (ATS) and partial PIXIT proforma based on this ETS. 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 ETS 300 141-1 [1].

## 2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] ETS 300 141-1 (1993): "Integrated Services Digital Network (ISDN); Call Hold (HOLD) supplementary service ; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

NOTE: ETS 300 141-1 (1993) was initially published as ETS 300 141 (1993).

- [2] ETS 300 141-2 (1995): "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] ETS 300 196-1 (1993): "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".

NOTE: ETS 300 196-1 (1993) was initially published as ETS 300 196 (1993).

- [7] ITU-T Recommendation I.411 (1993): "ISDN user-network interfaces - Reference configurations".

- [8] ETS 300 102-1: "Integrated Services Digital Network (ISDN); User-network interface layer 3; Specifications for basic call control".

- [9] ITU-T Recommendation I.112 (1993): "Vocabulary and terms for ISDNs".

- [10] CCITT Recommendation E.164 (1991): "Numbering plan for the ISDN era".

- [11] ITU-T Recommendation I.210 (1993): "Principles of the telecommunication services supported by an ISDN and the means to describe them".

[12] ETS 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 this ETS, the following definitions apply:

#### 3.1 Definitions related to conformance testing

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

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

**active test:** A test case where the IUT is required to send a particular message, but not in reaction to a received message. This would usually involve the use of PIXIT information to see how this message can be generated and quite often is specified in an ATS using an Implicit Send event.

**implementation under test:** 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].

**passive test:** A test case where the IUT is required to respond to a protocol event (e.g. received message) with another protocol event (sends message) and normally does not require any special operator intervention such as is associated with the Implicit Send event.

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

#### 3.2 Definitions related to ETS 300 141-1

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

**call reference:** See ETS 300 102-1 [8], subclause 4.3.

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

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

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

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

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



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

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

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

**return result component:** See ETS 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.

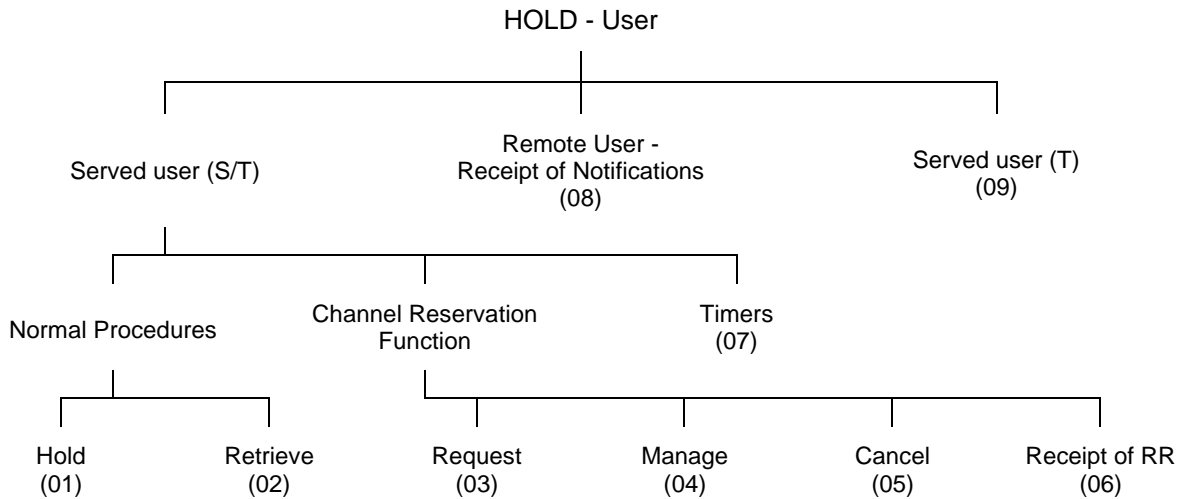
**user (T):** The DSS1 protocol entity at the user side of the user-network interface where a T reference point applies (commonly referred to as a Private ISDN).

## 4 Abbreviations

For the purposes of this ETS, the following abbreviations apply:

HOLD	Call Hold
IUT	Implementation under test
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
TSS	Test Suite Structure
TP	Test Purpose
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 Test Purpose identifiers.

**Figure 1: Test suite structure**

## 6 Test Purposes (TP)

### 6.1 Introduction

For each test requirement a Test Purpose (TP) is defined.

#### 6.1.1 Test purpose (TP) naming convention

Test Purposes 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 side (see table 1).

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

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

### 6.1.2 Source of test purpose definition

The test purposes were developed based on ETS 300 141-1 [1], clauses 9, 10 and 14.

### 6.1.3 Test purpose structure

Each TP has been written in a manner which is consistent with all other TPs. The intention of this is to make the TPs 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 TP i.e. use a TP as an example to fully understand the table.

**Table 2: Structure of a single Test Purpose for HOLD**

TP Part	Text	Example
<b>Header</b>	<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
<b>Stimulus</b>	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. and Hold Requested,... receiving a XXXX message to request a ....
<b>Reaction</b>	<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, ...
<b>Message structure</b>	<message type> message containing a <i>a)</i> <info element> information element with <i>b)</i> 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, ...
<b>NOTE:</b>	Text in italics will not appear in TPs and text between <> is filled in for each TP and may differ from one TP to the next.	

### 6.1.4 Test strategy

As the base standard contained no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and PICS. The criteria applied included the following:

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

## 6.2 User side Test Purposes for HOLD

All PICS items referred to in this subclause are as specified in ETS 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\_0010           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\_0011           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\_0012           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, while 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, while 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, while 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, while 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, while 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, while 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, while 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, while 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, while 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, while 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, while 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, while 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, while 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, while 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, while 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, while 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, while 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\_0010            subclause 9.1.1            valid    optional**

Ensure that the IUT, while 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\_0011 subclause 9.1.1 valid mandatory**

Ensure that the IUT, while 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\_0012 subclause 9.1.1 valid mandatory**

Ensure that the IUT, while 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, while in the Call Delivered call state U04 and Hold Request auxiliary state receiving a HOLD ACKNOWLEDGE message with a 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, while in the Active call state U10 and Hold Request auxiliary state receiving a HOLD ACKNOWLEDGE message with a 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, while in the Call Delivered call state U04 and Retrieve Request auxiliary state receiving a RETRIEVE ACKNOWLEDGE message with a 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, while in the Active call state U10 and Retrieve Request auxiliary state receiving a RETRIEVE ACKNOWLEDGE message with a 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, while in the Call Delivered call state U04 and Retrieve Request auxiliary state, receiving a RETRIEVE ACKNOWLEDGE message with a 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, while in the Active call state U10 and Retrieve Request auxiliary state, receiving a RETRIEVE ACKNOWLEDGE message with a 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, while in the Call Delivered call state U04 and Hold Request auxiliary state, receiving a HOLD ACKNOWLEDGE message with a 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, while in the Active call state U10 and Hold Request auxiliary state, receiving a HOLD ACKNOWLEDGE message with a 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, while in the Call Delivered call state U04 and Retrieve Request auxiliary state, receiving a RETRIEVE ACKNOWLEDGE message with a 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, while in the Active call state U10 and Retrieve Request auxiliary state, receiving a RETRIEVE ACKNOWLEDGE message with a 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            subclause 13            valid    optional**

Ensure that the IUT, while 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            subclause 13            valid    optional**

Ensure that the IUT, while 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 & 13            valid    mandatory**

Ensure that the IUT, while 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 & 13            valid    mandatory**

Ensure that the IUT, while 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 apply to IUTs supporting combined S and T reference point procedures OR T reference point procedures - behaviour is the same for both.

**HOLD\_U08\_001**                      **subclause 9.2.1 & 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**                      **subclause 9.2.1 & 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**                      **subclause 9.2.1 & 10.2.1**                      **valid**    **mandatory**

Ensure that the IUT in the Call Received call state U07 receiving a PROGRESS message with a notification indicator information element coded as 'remote hold' does not respond and remains in the same state.

**HOLD\_U08\_004**                      **subclause 9.2.1 & 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\_005**                      **subclause 9.2.1 & 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\_006**                      **subclause 9.4.1 & 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\_007**                      **subclause 9.4.1 & 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\_008**                      **subclause 9.4.1 & 10.2.1**                      **valid**    **mandatory**

Ensure that the IUT in the Call Received call state U07 receiving a PROGRESS message with a notification indicator information element coded as "remote retrieval" does not respond and remains in the same state.

**HOLD\_U08\_009**                      **subclause 9.4.1 & 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\_010**                      **subclause 9.4.1 & 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 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 has user 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 state. PICS: MC 2.2.

## History

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