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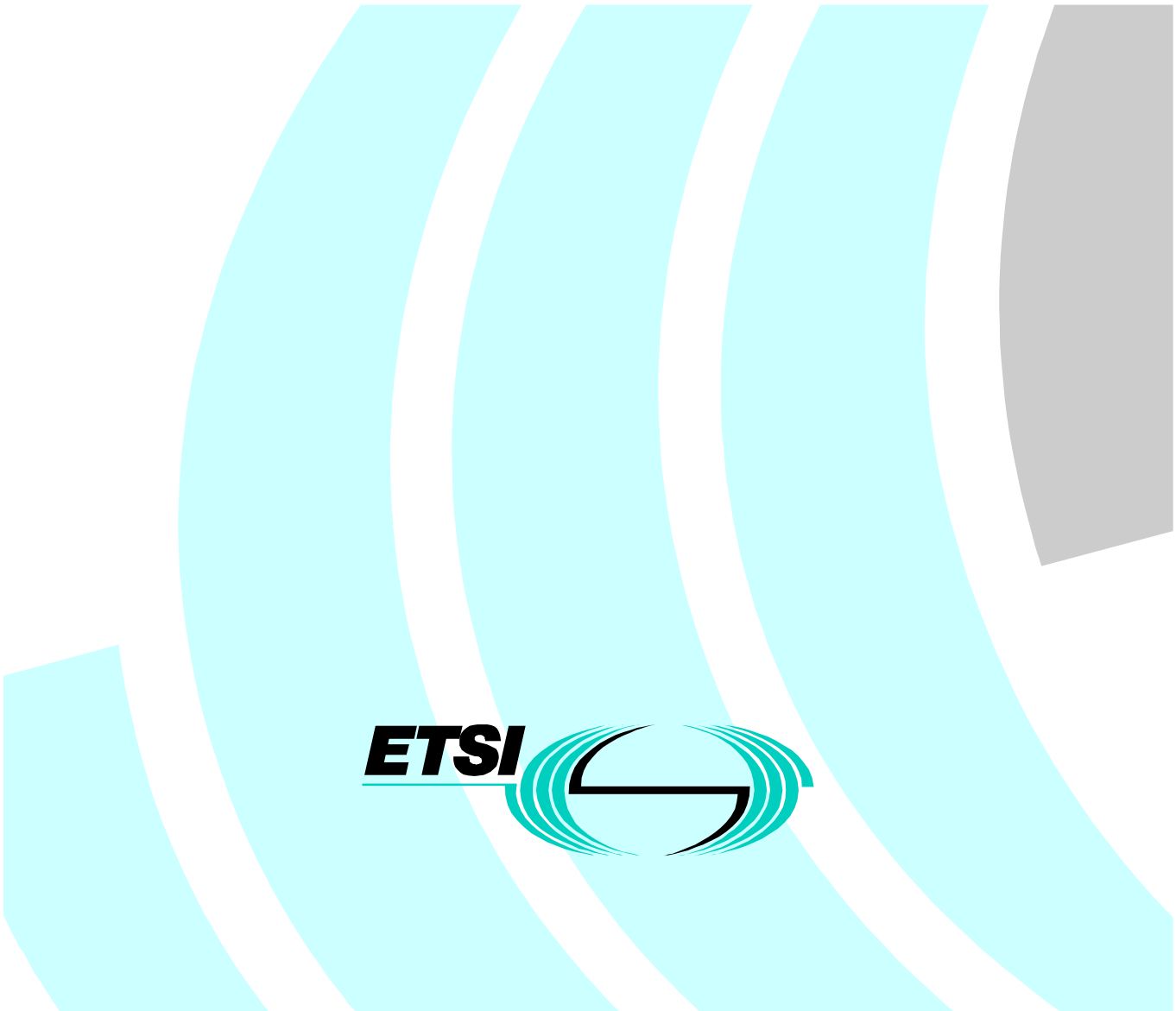
Private Integrated Services Network (PISN); Inter-exchange signalling protocol; Call completion supplementary services; Part 1: Test Suite Structure and Test Purposes (TSS&TP) specification



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Foreword

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

The present document is part 1 of a multi-part standard covering Private Integrated Service Network (PISN); Inter-exchange signalling protocol; Call completion supplementary services [ISO/IEC 13870 [12] (1995) modified], as identified below:

Part 1: "**Test Suite Structure and Test Purposes (TSS&TP) specification";**

Part 2: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma".

The present document covers the Private Integrated Service Network (PISN) Inter-exchange signalling protocol - Call Completion supplementary service - Test Suite Structure and Test Purposes (TSS&TP) specification.

Proposed national transposition dates	
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

1 Scope

The present document specifies the Test Suite Structure and Test Purposes (TSS&TP) for the Call Completion supplementary services of the Interexchange signalling protocol for Private Integrated Services Networks (PISN).

The objective of this TSS&TP specification is to provide conformance tests which give a greater probability of inter-operability. The TSS&TP specification covers the procedures described in ETS 300 366 [11].

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [4], ISO/IEC 9646-2 [5] and ISO/IEC 9646-3 [6]) is used as basis for the test methodology.

The Test Suite Structure and Test Purposes specified in the present document are only intended for VPN scenarios at the "b" service entry point.

The VPN "b" service entry point is defined in EN 301 060-1 [9] and ETR 172 [10].

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] EN 300 172: "Private Integrated Services Network (PISN); Inter-exchange signalling protocol; Circuit-mode basic services [ISO/IEC 11572 (1996) modified]".

[2] ETS 300 239: "Private Integrated Services Network (PISN); Inter-exchange signalling protocol; Generic functional protocol for the support of supplementary services [ISO/IEC 11582 (1995), modified]".

[3] ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

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

[5] ISO/IEC 9646-2: "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 2: Abstract test suite specification".

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

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

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

[9] EN 301 060-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Basic call control; Enhancement at the "b" service entry point for Virtual Private Network (VPN) applications; Part 1: Protocol specification".

[10] ETR 172: "Business TeleCommunications (BTC); Virtual Private Networking (VPN); Services and Networking aspects; Standardization requirements and work items".

[11] ETS 300 366: "Private Integrated Services Network (PISN); Inter-exchange signalling protocol; Call completion supplementary services [ISO/IEC 13870 (1995) modified]".

[12] ISO/IEC 13870: "Information technology - Telecommunications and information exchange between systems - Private Integrated Services Network - Inter-exchange signalling protocol - Call completion supplementary services".

[13] 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".

3 Definitions and abbreviations

3.1 Definitions

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

3.1.1 Definitions related to conformance testing

abstract test case: refer to ISO/IEC 9646-1 [4]

Abstract Test Suite (ATS): refer to ISO/IEC 9646-1 [4]

active test: test case where the IUT is required to send a particular message, but not in reaction to a received message.

NOTE: 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

component: refer to EN 300 196-1 [13]

Implementation Under Test (IUT): refer to ISO/IEC 9646-1 [4]

implicit send event: refer to ISO/IEC 9646-3 [6]

lower tester: refer to ISO/IEC 9646-1 [4]

passive test: test case where the IUT is required to respond to a protocol event (e.g. received message) with another protocol event (e.g. send message) which normally does not require any special operator intervention as associated with the implicit send event

point of control and observation: refer to ISO/IEC 9646-1 [4]

Protocol Implementation Conformance Statement (PICS): refer to ISO/IEC 9646-1 [4]

PICS proforma: refer to ISO/IEC 9646-1 [4]

Protocol Implementation eXtra Information for Testing (PIXIT): refer to ISO/IEC 9646-1 [4]

PIXIT proforma: refer to ISO/IEC 9646-1 [4]

system under test: refer to ISO/IEC 9646-1 [4]

Test Purpose (TP): refer to ISO/IEC 9646-1 [4]

3.1.2 Definitions related to ETS 300 366

call independent signalling connection: see ETS 300 239 [2], subclause 4.7

call related: see ETS 300 239 [2], subclause 4.9

incoming call: see EN 300 172 [1], subclause 4.4

incoming Gateway PINX: see EN 300 172 [1], subclause 4.6

Information Elements (IEs) with invalid contents: see EN 300 172 [1], subclause 4.14

Integrated Services Digital Network (ISDN): see ITU-T Recommendation I.112 [7], definition 308

invoke APDU: see ETS 300 239 [2], subclause 11.3.3.4

originating PINX: see EN 300 172 [1], subclause 4.5

outgoing call: see EN 300 172 [1], subclause 4.4

outgoing Gateway PINX: see EN 300 172 [1], subclause 4.6

reject APDU: see ETS 300 239 [2], subclause 11.3.3.4

return error APDU: see ETS 300 239 [2], subclause 11.3.3.4

return result APDU: see ETS 300 239 [2], subclause 11.3.3.4

ROSE APDU: see ETS 300 239 [2], definition 4.33

service; telecommunication service: see ITU-T Recommendation I.112 [7], definition 201

supplementary service: see ITU-T Recommendation I.210 [8], subclause 2.4

terminating PINX: see EN 300 172 [1], subclause 4.5

transit PINX: see EN 300 172 [1], subclause 4.5

Virtual Private Network (VPN): refer to EN 301 060-1 [9] and ETR 172 [10]

3.2 Abbreviations

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

APDU	Application Protocol Data Unit
ATS	Abstract Test Suite
BC	Basic Call
CCBS	Call Completion to Busy Subscriber
CCNR	Call Completion on No Reply
CR	Call Reference
IE	Information Element
ISDN	Integrated Services Digital Network
IUT	Implementation Under Test
PICS	Protocol Implementation Conformance Statement
PINX	Private Integrated Services Network eXchange
PISN	Private Integrated Services Network
PIXIT	Protocol Implementation eXtra Information for Testing
sc	call independent signalling connection
T1	Timer T1
T2	Timer T2
T3	Timer T3
T4	Timer T4
TP	Test Purpose
TSS	Test Suite Structure
VPN	Virtual Private Network

4 Test Suite Structure (TSS)

Signalling procedures at the VPN "b" service entry point	**Group**
Procedures at the Originating PINX	
for SS-CCBS	Orig01
for SS-CCNR	Orig02
for User A not busy - path non-reservation method	Orig03
for User A not busy - path reservation method	Orig04
for User A busy - path non-reservation method	Orig05
for User A busy - either before or after the path reservation method	Orig06
for CCBS/CCNR cancellation	Orig07
for Timers expiry	Orig08
Procedures at the Terminating PINX	
for SS-CCBS	Term01
for SS-CCNR	Term02
for indication that User B is not busy	Term03
for CC Call without Path Reservation	Term04
for CC Call with Path Reservation	Term05
for CCBS/CCNR suspension and resumption	Term06
for CCBS/CCNR cancellation	Term07
Procedures for Protocol Interactions between SS-CCBS and other supplementary services and ANFs	
Procedures for the Originating PINX	Int01
Procedures for Protocol Interactions between SS-CCNR and other supplementary services and ANFs	
Procedures for the Originating PINX	Int02

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 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>_<group>_<nnn>**			
<ss>	=	supplementary service:	"CC"
<group>	=	group	up to 8 digit field representing group reference according to TSS
<nnn>	=	sequential number	(001-999)

5.1.2 Source of TP definition

The TPs are based on ETS 300 366 [11].

5.1.3 TP 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. Table 2 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 TP for CCNR

TP part	Text	Example
Header	<Identifier> tab <paragraph number in base ETS> tab	see table 1 subclause 0.0.0
Stimulus	Ensure that the IUT in the <basic call state> or <CC state> <trigger> see below for message structure or <goal>	 state 3 or CC-Idle, etc. receiving a XXXX message to request a...
Reaction	<action> <conditions> if the action is sending see below for message structure <next action>, etc. and remains in the same state *or* 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 *or* including <coding of the field> and *back to a or b,*	SETUP, FACILITY, CONNECT,... Bearer capability, Facility,...
NOTE:	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.	

5.1.4 Test strategy

As the base standard ETS 300 366 [11] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the corresponding PICS proforma.

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 [3]).

5.2 TPs for CC

All PICS items referred to in subclause 5.2 are as specified in ETS 300 366 [11] unless indicated otherwise by another numbered reference.

Unless specified:

- only the requirements from the point of view of the VPN "b" service entry point are considered. This implies that the interactions with other networks are beyond the scope of the present document and consequently the corresponding Test Purposes are not included in the present document.
- 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.

The following wording convention was defined to make the test purposes more readable:

- when a message is to be sent or received on a call independent signalling connection, the message name shall be followed by a '(sc)', e.g. CONNECT (sc) means that the CONNECT message is conveyed on a call independent signalling connection.

5.2.1 SS-CC signalling procedures

5.2.1.1 Actions at the Originating PINX

5.2.1.1.1 CCBS invocation

CC_ Orig01_001 subclause 6.5.2.1.1
Ensure that the IUT in state U00 and in the CC-Idle state, in order to initiate a CCBS call,
- sends a SETUP (sc) message containing in the Facility IE a ccbsRequest invoke APDU and enters state CC-Wait-Ack.

CC_Orig01_002 subclause 6.5.2.1.1
Ensure that the IUT in state CC-Wait-Ack, receiving a CONNECT (sc) message containing in the Facility IE a ccbsRequest return result APDU,
- sends a CONNECT ACKNOWLEDGE (sc) message, enters state U10 and enters state CC-Invoked-user-A-RET.

CC_Orig01_003 subclause 6.5.2.1.1
Ensure that the IUT in state CC-Wait-Ack, receiving a RELEASE (sc) message containing in the Facility IE a ccbsRequest return result APDU,
- sends a RELEASE COMPLETE (sc) message and enters state U00 and state CC-Invoked-user-A-RLS.

CC_Orig01_004 subclause 6.5.2.2.1
Ensure that the IUT in state CC-Wait-Ack, receiving a RELEASE (sc) message containing in the Facility IE a ccbsRequest return error APDU,
- sends a RELEASE COMPLETE (sc) message and enters state U00 and state CC-Idle.

CC_Orig01_005 subclause 6.5.2.2.1
Ensure that the IUT in state CC-Wait-Ack, receiving a RELEASE (sc) message containing in the Facility IE a ccbsRequest reject APDU,
- sends a RELEASE COMPLETE (sc) message and enters state U00 and state CC-Idle.

CC_Orig01_006 subclauses 6.5.2.2.1 and 6.5.2.1.10
Ensure that the IUT in state CC-Wait-Ack, receiving a RELEASE (sc) message for CR1 containing in the Facility IE a ccbsRequest return result APDU, although the connection retention method is required,
- sends a SETUP (sc) message for CR2 containing in the Facility IE a ccCancel invoke APDU including the Argument fullArg with the same basic call information as previously sent in the ccbsRequest invoke APDU, in order to identify the CC request to be cancelled and enters state CC-Idle.

5.2.1.1.2 CCNR invocation

CC_Orig02_001 subclause 6.5.2.1.2
Ensure that the IUT in state U00 and in the CC-Idle state, in order to initiate a CCNR call,
- sends a SETUP (sc) message containing in the Facility IE a ccnrRequest invoke APDU and enters state CC-Wait-Ack.

CC_Orig02_002 subclause 6.5.2.1.2
Ensure that the IUT in state CC-Wait-Ack, receiving a CONNECT (sc) message containing in the Facility IE a ccnrRequest return result APDU,
- sends a CONNECT ACKNOWLEDGE (sc) message, enters state U10 and enters state CC-Invoked-user-A-RET.

CC_Orig02_003 subclause 6.5.2.1.2
Ensure that the IUT in state CC-Wait-Ack, receiving a RELEASE (sc) message containing in the Facility IE a ccnrRequest return result APDU,
- sends a RELEASE COMPLETE (sc) message and enters state U00 and state CC-Invoked-user-A-RLS.

CC_Orig02_004 subclause 6.5.2.2.1
Ensure that the IUT in state CC-Wait-Ack, receiving a RELEASE (sc) message containing in the Facility IE a ccnrRequest return error APDU,
- sends a RELEASE COMPLETE (sc) message and enters state U00 and state CC-Idle.

CC_Orig02_005 subclause 6.5.2.2.1
Ensure that the IUT in state CC-Wait-Ack, receiving a RELEASE (sc) message containing in the Facility IE a ccnrRequest reject APDU,
- sends a RELEASE COMPLETE (sc) message and enters state U00 and state CC-Idle.

CC_Orig02_006 subclauses 6.5.2.2.1 and 6.5.2.1.10
Ensure that the IUT in state CC-Wait-Ack, receiving a RELEASE (sc) message for CR1 containing in the Facility IE a ccnrRequest return result APDU, although the connection retention method is required,
- sends a SETUP (sc) message for CR2 containing in the Facility IE a ccCancel invoke APDU including the Argument fullArg with the same basic call information as previously sent in the ccnrRequest invoke APDU, in order to identify the CC request to be cancelled and enters state CC-Idle.

5.2.1.1.3 User A not busy - path non-reservation method

CC_Orig03_001 subclauses 6.5.2.1.4 and 6.5.2.1.5
Ensure that the IUT in state CC-Invoked-user-A-RET (connection retention case), receiving a FACILITY (sc) message containing in the Facility IE a ccExecPossible invoke APDU and User A is not busy,
- enters state CC-Wait-user-A-Answer-N, sends a SETUP message for CR2 containing in the Facility IE a ccRingout invoke APDU and enters state CC-Ringout.

CC_Orig03_002 subclause 6.5.2.1.5
Ensure that the IUT in state CC-Ringout, receiving an ALERTING message for CR2,
- enters state U04 and state CC-Idle and waits for a CONNECT message.

CC_Orig03_003 subclause 6.5.2.1.5
Ensure that the IUT in state CC-Ringout, receiving a CONNECT message for CR2,
- sends a CONNECT ACKNOWLEDGE message and enters state U10 and state CC-Idle.

CC_Orig03_004 subclause 6.5.2.2.6
Ensure that the IUT in state CC-Ringout, receiving a DISCONNECT message for CR2 containing in the Facility IE a ccRingout return error APDU with value "remoteUserBusyAgain" and the service retention method applies for that CC Request,
- sends a RELEASE message and enters state CC-Invoked-user-A-RET (connection retention case).

Selection: service retention method applies, PICS: A9, B12

CC_Orig03_005 subclause 6.5.2.2.6
Ensure that the IUT in state CC-Ringout, receiving a DISCONNECT message for CR2 containing in the Facility IE a ccRingout return error APDU with value "remoteUserBusyAgain" when the service retention method does not apply for that CC Request and no re-invocation is selected,
- sends a RELEASE message and enters and state CC-Idle.

Selection: failure indication to User A (no re-invocation), PICS: B13

CC_Orig03_006 subclause 6.5.2.2.6
Ensure that the IUT in state CC-Ringout, receiving a DISCONNECT message for CR2 containing in the Facility IE a ccRingout return error APDU with value "remoteUserBusyAgain" when the service retention method does not apply for that CC Request and re-invocation is selected,
- sends a SETUP (sc) message containing in the Facility IE a ccbsRequest invoke APDU, enters state U01 and state CC-Wait-Ack.

Selection: re-invocation. PICS: B14

CC_Orig03_007 subclause 6.5.2.2.6
Ensure that the IUT in state CC-Ringout, receiving a DISCONNECT message for CR2 containing in the Facility IE a ccRingout return error APDU with value "failureToMatch" and a call independent signalling connection exists,
- sends a RELEASE message enters state CC-Idle.

CC_Orig03_008 subclause 6.5.2.2.6
Ensure that the IUT in state CC-Ringout, receiving a DISCONNECT message for CR2 containing in the Facility IE a ccRingout return error APDU with value "unspecified" and no call independent signalling connection exists,
- sends a RELEASE message enters state CC-Idle.

CC_Orig03_009 subclause 6.5.2.2.6, 6.5.2.1.10
Ensure that the IUT in state CC-Ringout, gets a BC indication that the CC Call failed - without ccRingout return error being received and a call independent signalling connection exists,
- sends a RELEASE (sc) message containing in the Facility IE a ccCancel invoke APDU and state CC-Idle.

5.2.1.1.4 User A not busy - path reservation method

CC_Orig04_001 subclauses 6.5.2.1.4 and 6.5.2.1.6
Ensure that the IUT in state CC-Invoked-user-A-RLS (connection release case), receiving a SETUP (sc) message containing in the Facility IE a ccExecPossible invoke APDU and the association of the APDU with an existing CC Request is successful and User A is not busy,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing",
- sends a SETUP message for CR2 containing in the Facility IE a ccPathReserve invoke APDU and enters state CC-Path-Setup.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig04_002 subclauses 6.5.2.1.4 and 6.5.2.1.6
Ensure that the IUT in state CC-Invoked-user-A-RET (connection retention case), receiving a FACILITY (sc) message containing in the Facility IE a ccExecPossible invoke APDU and the service retention method does not apply (i.e.: the call independent signalling connection can be released),
- sends a RELEASE (sc) message with cause value #16 "normal call clearing",
- sends a SETUP message for CR2 containing in the Facility IE a ccPathReserve invoke APDU and enters state CC-Path-Setup.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig04_003 subclause 6.5.2.1.4, 6.5.2.1.6

Ensure that the IUT in state CC-Invoked-user-A-RET (connection retention case), receiving a FACILITY (sc) message containing in the Facility IE a ccExecPossible invoke APDU and the service retention method applies (i.e.: the call independent signalling connection can not be released),

- sends a SETUP message for CR2 containing in the Facility IE a ccPathReserve invoke APDU and enters state CC-Path-Setup.

Selection: Setup CC call with path reservation, PICS: B7 and service retention method applies, PICS: A9

CC_Orig04_004 subclauses 6.5.2.1.6, 6.5.2.1.8 and 6.5.2.1.9

Ensure that the IUT in state CC-Wait-user-A-Free, gets the indication that User A is not busy,

- sends a SETUP message for CR2 containing in the Facility IE a ccPathReserve invoke APDU and enters state CC-Path-Setup.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig04_005 subclause 6.5.2.1.6

Ensure that the IUT in state CC-Path-Setup, receiving a PROGRESS message for CR2 containing in the Facility IE a ccPathReserve return result APDU

- sends a FACILITY message for CR2 containing in the Facility IE a ccRingout invoke APDU, remain in the same call state and enters state CC-Ringout.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig04_006 subclause 6.5.2.2.2

Ensure that the IUT in state CC-Invoked-user-A-RLS, receiving a SETUP (sc) message containing in the Facility IE a ccExecPossible invoke APDU and the association of the APDU with a CC Request that is in state CC-Invoked-user-A-RLS is unsuccessful,

- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU.

CC_Orig04_007 subclause 6.5.2.2.5

Ensure that the IUT in state CC-Path-Setup, receiving a DISCONNECT message for CR1 containing in the Facility IE a ccPathReserve return error APDU with value "failedDueToInterworking",

- sends a RELEASE message for CR1, sends a SETUP message for CR2 containing in the Facility IE a ccRingout invoke APDU and enters state U01 and state CC-Ringout.

Selection: Setup CC call with path reservation, PICS: B7 and new PICS for CC Call without Path Reservation: B15

CC_Orig04_008 subclause 6.5.2.2.5

Ensure that the IUT in state CC-Path-Setup, receiving a DISCONNECT message for CR1 containing in the Facility IE a ccPathReserve return error APDU with value "failedDueToInterworking",

- sends a RELEASE message for CR1, sends a SETUP message for CR2 containing in the Facility IE a ccPathReserve invoke APDU and remains in state CC-Path-Setup.

Selection: Setup CC call with path reservation, PICS: B7 and new PICS for retry Path Reservation on another route: B16

CC_Orig04_009 subclause 6.5.2.2.5

Ensure that the IUT in state CC-Path-Setup, receiving a DISCONNECT message for CR1 containing in the Facility IE a ccPathReserve return error APDU with value "failedDueToInterworking,

- sends a RELEASE message for CR1, sends a SETUP (sc) message for CR2 containing in the Facility IE a ccCancel invoke APDU including the Argument fullArg with the same basic call information as previously sent in the ccnrRequest invoke APDU, in order to identify the CC request to be cancelled and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7 and new PICS for cancel the CC Request: B17

CC_Orig04_010 subclause 6.5.2.2.5
Ensure that the IUT in state CC-Path-Setup, receiving a DISCONNECT message for CR1 containing in the Facility IE a ccPathReserve reject APDU with value "unrecognizedOperation",
- sends a RELEASE message for CR1, sends a SETUP message for CR2 containing in the Facility IE a ccRingout invoke APDU and enters state U01 and state CC-Ringout.

Selection: Setup CC call with path reservation, PICS: B7 and new PICS for CC Call without Path Reservation: B15

CC_Orig04_011 subclause 6.5.2.2.5
Ensure that the IUT in state CC-Path-Setup, receiving a DISCONNECT message for CR1 containing in the Facility IE a ccPathReserve reject APDU with value "unrecognizedOperation",
- sends a RELEASE message for CR1, sends a SETUP message for CR2 containing in the Facility IE a ccPathReserve invoke APDU and remains in state CC-Path-Setup.

Selection: Setup CC call with path reservation, PICS: B7 and new PICS for retry Path Reservation on another route: B16

CC_Orig04_012 subclause 6.5.2.2.5
Ensure that the IUT in state CC-Path-Setup, receiving a DISCONNECT message for CR1 containing in the Facility IE a ccPathReserve reject APDU with value "unrecognizedOperation",
- sends a RELEASE message for CR1, sends a SETUP (sc) message for CR2 containing in the Facility IE a ccCancel invoke APDU including the Argument fullArg with the same basic call information as previously sent in the ccnrRequest invoke APDU, in order to identify the CC request to be cancelled and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7 and new PICS for cancel the CC Request: B17

CC_Orig04_013 subclause 6.5.2.2.5
Ensure that the IUT in state CC-Path-Setup, receiving a DISCONNECT message for CR1 containing in the Facility IE a ccPathReserve return error APDU with value "remoteUserBusyAgain" and the connection release case exists,
- sends a RELEASE message for CR1 and enters state CC-Invoked-user-A-RLS.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig04_014 subclause 6.5.2.2.5
Ensure that the IUT in state CC-Path-Setup, receiving a DISCONNECT message for CR1 containing in the Facility IE a ccPathReserve return error APDU with value "remoteUserBusyAgain" and the connection retention case exists,
- sends a RELEASE message for CR1 and enters state CC-Invoked-user-A-RET.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig04_015 subclause 6.5.2.2.5
Ensure that the IUT in state CC-Path-Setup when the connection retention case exists, receiving a DISCONNECT message for CR1 containing in the Facility IE a ccPathReserve return error APDU with value "failureToMatch",
- sends a RELEASE message for CR1, sends a RELEASE (sc) message for the existing sc connection and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig04_016 subclause 6.5.2.2.5
Ensure that the IUT in state CC-Path-Setup when the connection release case exists, receiving a DISCONNECT message for CR1 containing in the Facility IE a ccPathReserve return error APDU with value "unspecified",
- sends a RELEASE message for CR1 and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig04_017 subclause 6.5.2.2.5
Ensure that the IUT in state CC-Path-Setup, receiving a CC fail indication due to network congestion,
- sends a SETUP message for CR2 containing in the Facility IE a ccPathReserve invoke APDU, and enter state U01 and remains in state CC-Path-Setup.

Selection: Setup CC call with path reservation, PICS: B7 and new PICS for retry to establish a path due to network congestion: B18

CC_Orig04_018 subclauses 6.5.2.2.5 and 6.5.2.1.10
Ensure that the IUT in state CC-Path-Setup, receiving a CC fail indication due to network congestion and the connection release case exists,
- sends a SETUP (sc) message containing in the Facility IE a ccCancel invoke APDU and enters CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7 and new PICS for cancel the CC Request due to network congestion: B19

5.2.1.1.5 User A busy - path non-reservation method

CC_Orig05_001 subclause 6.5.2.1.7
Ensure that the IUT in state CC-Invoked-user-A-RET, receiving a FACILITY (sc) message containing in the Facility IE a ccExecPossible invoke APDU and User A is busy and the path non-reservation method is chosen,
- sends a FACILITY (sc) message containing in the Facility IE a ccSuspend invoke APDU and enters state CC-Suspended-user-A.

CC_Orig05_002 subclause 6.5.2.1.7
Ensure that the IUT in state CC-Suspended-user-A, and User A becomes not busy,
- sends a FACILITY (sc) message containing in the Facility IE a ccResume invoke APDU and enters state CC-Invoked-user-A-RET.

5.2.1.1.6 User A busy - either before or after the path reservation method

CC_Orig06_001 subclause 6.5.2.1.8
Ensure that the IUT in state CC-Invoked-user-A-RLS, receiving a SETUP (sc) message containing in the Facility IE a ccExecPossible invoke APDU and User A is busy and the suspend option is not applicable,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and enters state CC-Wait-user-A-Free.

Selection: new PICS for suspend option (suspension is not applicable): B20

CC_Orig06_002 subclause 6.5.2.1.8
Ensure that the IUT in state CC-Invoked-user-A-RLS, receiving a SETUP (sc) message containing in the Facility IE a ccExecPossible invoke APDU and User A is busy and the suspend option is applicable,
- sends a RELEASE (sc) message containing in the Facility IE a ccSuspend invoke APDU and enters state CC-Wait-user-A-Free.

Selection: new PICS for suspend option (suspension is applicable): B20

CC_Orig06_003 subclause 6.5.2.1.8
Ensure that the IUT in state CC-Invoked-user-A-RET, receiving a FACILITY (sc) message containing in the Facility IE a ccExecPossible invoke APDU and User A is busy and the path reservation method is chosen and the connection release method applies and the suspend option is not applicable,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and enters state CC-Wait-user-A-Free.

Selection: Setup CC call with path reservation, PICS: B7 and new PICS for suspend option (suspension is not applicable): B20

CC_Orig06_004 subclause 6.5.2.1.8
Ensure that the IUT in state CC-Invoked-user-A-RET, receiving a FACILITY (sc) message containing in the Facility IE a ccExecPossible invoke APDU and User A is busy and the path reservation method is chosen and the connection release method applies and the suspend option is applicable,
- sends a RELEASE (sc) message containing in the Facility IE a ccSuspend invoke APDU and enters state CC-Wait-user-A-Free.

Selection: Setup CC call with path reservation, PICS: B7 and new PICS for suspend option (suspension is applicable): B20

CC_Orig06_005 subclause 6.5.2.1.8
Ensure that the IUT in state CC-Invoked-user-A-RET, receiving a FACILITY (sc) message containing in the Facility IE a ccExecPossible invoke APDU and User A is busy and the path reservation method is chosen and the connection retention method applies and the suspend option is applicable,

- sends a FACILITY (sc) message containing in the Facility IE a ccSuspend invoke APDU and enters state CC-Wait-user-A-Free.

Selection: Setup CC call with path reservation, PICS: B7 and new PICS for suspend option (suspension is applicable): B20

CC_Orig06_006 subclause 6.5.2.1.9
Ensure that the IUT in state CC-Path-Setup, receiving a PROGRESS message containing in the Facility IE a ccPathReserve return result APDU and User A is busy,

- sends a DISCONNECT message containing in the Facility IE a ccSuspend invoke APDU and enters state CC-Wait-user-A-Free.

Selection: Setup CC call with path reservation, PICS: B7

5.2.1.1.7 CCBS/CCNR cancellation

CC_Orig07_001 subclause 6.5.2.1.10
Ensure that the IUT on receiving a CC cancel request from User A and a call independent signalling connection is active and no CC call is active,

- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU with the argument extArg and enters state CC-Idle.

CC_Orig07_002 subclause 6.5.2.1.10
Ensure that the IUT on receiving a CC cancel request from User A and no call independent signalling connection is active and no path has been reserved,

- sends a SETUP (sc) message containing in the Facility IE a ccCancel invoke APDU with the argument fullArg and enters state CC-Idle.

CC_Orig07_003 subclause 6.5.2.1.10
Ensure that the IUT in state CC-Path-Setup, receiving a CC cancel request from User A and a call independent signalling connection is active,

- sends a DISCONNECT message for CR2,

- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig07_004 subclause 6.5.2.1.10
Ensure that the IUT in state CC-Path-Setup, receiving a CC cancel request from User A and no call independent signalling connection is active,

- sends a DISCONNECT message for CR2,

- sends a SETUP (sc) message containing in the Facility IE a ccCancel invoke APDU and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig07_005 subclause 6.5.2.1.10
Ensure that the IUT on receiving a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU with the argument extArg and no CC call is active,

- sends a RELEASE COMPLETE (sc) message enters state U00 and state CC-Idle.

CC_Orig07_006 subclause 6.5.2.1.10
Ensure that the IUT on receiving a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU with the argument extArg and a CC call (CR2) is active,

- sends a DISCONNECT message for CR2 with cause value #16 "normal call clearing" and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig07_007 subclause 6.5.2.1.10
Ensure that the IUT on receiving a SETUP (sc) message containing in the Facility IE a ccCancel invoke APDU with the argument fullArg and the association of the APDU with an active CC Request is successful and no CC call is active,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and enters state CC-Idle.

CC_Orig07_008 subclause 6.5.2.1.10
Ensure that the IUT on receiving a SETUP (sc) message containing in the Facility IE a ccCancel invoke APDU with the argument fullArg and the association of the APDU with an active CC Request is successful and a CC call (CR2) is active,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing",

- sends a DISCONNECT message for CR2 with cause value #16 "normal call clearing" and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig07_009 subclause 6.5.2.2.2
Ensure that the IUT on receiving a SETUP (sc) message containing in the Facility IE a ccCancel invoke APDU and the association of the APDU with an active CC Request is unsuccessful,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing".

5.2.1.1.8 Timers expiry

CC_Orig08_001 subclause 6.5.2.2.1
Ensure that the IUT in call state U03 and in state CC-Wait-Ack, on expiry of T1,
- sends a RELEASE (sc) message and enters state CC-Idle.

Note: executable only if the timer values of TWAIT and of T310 (which is implementation dependent) is higher then the timer value of T1 (10-30s)

CC_Orig08_002 subclause 6.5.2.2.3
Ensure that the IUT in state CC-Invoked-user-A-RET, on expiry of T2,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU and enters state CC-Idle.

CC_Orig08_003 subclause 6.5.2.2.3
Ensure that the IUT in state CC-Suspended-user-A, on expiry of T2,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU and enters state CC-Idle.

CC_Orig08_004 subclause 6.5.2.2.3
Ensure that the IUT in state CC-Invoked-user-A-RLS, on expiry of T2,
- sends a SETUP (sc) message containing in the Facility IE a ccCancel invoke APDU and enters state CC-Idle.

CC_Orig08_005 subclause 6.5.2.2.3
Ensure that the IUT in state CC-Wait-user-A-Free, on expiry of T2 and a call independent signalling connection exists,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7 and new PICS for suspend option (suspension is not applicable): B20

CC_Orig08_006 subclause 6.5.2.2.3
Ensure that the IUT in state CC-Wait-user-A-Free, on expiry of T2 and no call independent signalling connection exists,
- sends a SETUP (sc) message containing in the Facility IE a ccCancel invoke APDU and enters state CC-Idle.

Selection: new PICS for suspend option (suspension is applicable): B20

CC_Orig08_007 subclause 6.5.2.2.3
Ensure that the IUT in state CC-Wait-user-A-Answer-N, on expiry of T2,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU and enters state CC-Idle.

Selection: Cancel Option after timeout of T2 - cancel the CC Request.

CC_Orig08_008 subclause 6.5.2.2.3
Ensure that the IUT in state CC-Path-Setup, on expiry of T2 and no call independent signalling connection exists,
- sends a DISCONNECT message for CR2 with cause value #16 "normal call clearing",

- sends a SETUP (sc) message containing in the Facility IE a ccCancel invoke APDU and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7 and Cancel Option after timeout of T2 - cancel the CC Request.

CC_Orig08_009 subclause 6.5.2.2.3
Ensure that the IUT in state CC-Path-Setup, on expiry of T2,
- takes no actions and remains in state CC-Path-Setup.

Selection: Setup CC call with path reservation, PICS: B7 and Defer Option after timeout of T2 - remain in the same state.

CC_Orig08_010 subclause 6.5.2.2.3
Ensure that the IUT in state CC-Wait-user-A-Answer-R, on expiry of,
- takes no actions and remains in state CC-Wait-user-A-Answer-R.

Selection: Setup CC call with path reservation, PICS: B7 and Defer Option after timeout of T2- remain in the same state.

CC_Orig08_011 subclause 6.5.2.2.3
Ensure that the IUT in state CC-Wait-user-A-Answer-R, on expiry of T2 and a call independent signalling connection exists,
- sends a DISCONNECT message for CR2 with cause value #16 "normal call clearing",

- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7 and Cancel Option after timeout of T2 - cancel the CC Request.

CC_Orig08_012 subclause 6.5.2.2.3
Ensure that the IUT in state CC-Ringout, on expiry of T2 and no call independent signalling connection exists,
- sends a DISCONNECT message for CR2 with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7 and Cancel Option after timeout of T2 - cancel the CC Request.

CC_Orig08_013 subclause 6.5.2.2.3
Ensure that the IUT in state CC-Ringout, on expiry of T2,
- takes no actions and remains in state CC-Ringout.

Selection: Defer Option after timeout of T2 - remain in the same state.

CC_Orig08_014 subclause 6.5.2.2.4
Ensure that the IUT in state CC-Wait-user-A-Answer-N, on expiry of T3,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig08_015 subclauses 6.5.2.2.4 and 6.5.2.1.10
Ensure that the IUT in state CC-Wait-user-A-Answer-R, on expiry of T3 and a call independent signalling connection exists,
- sends a RELEASE (sc) message for CR1 with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU with the argument extArg,

- sends a DISCONNECT message for CR2 with cause value #16 "normal call clearing" and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig08_016 subclauses 6.5.2.2.4 and 6.5.2.1.10
Ensure that the IUT in state CC-Wait-user-A-Answer-R, on expiry of T3 and no call independent signalling connection exists,
- sends a DISCONNECT message with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU with the argument extArg and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig08_017 subclauses 6.5.2.2.5 and 6.5.2.1.10
Ensure that the IUT in state CC-Path-Setup, on expiry of T4 and no call independent signalling connection exists,
- sends a DISCONNECT message for CR2 with cause value #16 "normal call clearing",

- sends a SETUP (sc) message containing in the Facility IE a ccCancel invoke APDU with the argument fullArg and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7

CC_Orig08_018 subclauses 6.5.2.2.5 and 6.5.2.1.10
Ensure that the IUT in state CC-Path-Setup, on expiry of T4 and a call independent signalling connection exists,
- sends a DISCONNECT message for CR2 with cause value #16 "normal call clearing",

- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU with the argument extArg and enters state CC-Idle.

Selection: Setup CC call with path reservation, PICS: B7

5.2.1.2 Actions at the Terminating PINX

5.2.1.2.1 CCBS invocation

CC_Term01_001 subclauses 6.5.3.1.1 and 6.5.3.1.3
Ensure that the IUT in state CC-Idle, receiving a SETUP (sc) message containing in the Facility IE a ccbsRequest invoke APDU and for maintain the signalling connection,
- sends a CONNECT (sc) message containing in the Facility IE a ccbsRequest return result APDU and enters state CC-Invoked-user-B.

CC_Term01_002 subclauses 6.5.3.1.1 and 6.5.3.1.3
Ensure that the IUT in state CC-Idle, receiving a SETUP (sc) message containing in the Facility IE a ccbsRequest invoke APDU and for not maintain the signalling connection,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccbsRequest return result APDU and enters state CC-Invoked-user-B.

CC_Term01_003 subclause 6.5.3.2.1
Ensure that the IUT in state CC-Idle, receiving a SETUP (sc) message containing in the Facility IE a ccbsRequest invoke APDU including a numberB parameter for which user A has already activated a CC-Request,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccbsRequest return error APDU with value "shortTermRejection"and enters state CC-Idle.

CC_Term01_004 subclause 6.5.3.2.1
Ensure that the IUT in state CC-Idle, receiving a SETUP (sc) message containing in the Facility IE a ccbsRequest invoke APDU for a User B which has not subscribed SS-CC,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccbsRequest return error APDU with value "longTermRejection"and enters state CC-Idle.

5.2.1.2.2 CCNR invocation

CC_Term02_001 subclauses 6.5.3.1.2 and 6.5.3.1.3
Ensure that the IUT in state CC-Idle, receiving a SETUP (sc) message containing in the Facility IE a ccnrRequest invoke APDU and for maintain the signalling connection,
- sends a CONNECT (sc) message containing in the Facility IE a ccnrRequest return result APDU and enters state CC-Invoked-user-B.

CC_Term02_002 subclauses 6.5.3.1.2 and 6.5.3.1.3
Ensure that the IUT in state CC-Idle, receiving a SETUP (sc) message containing in the Facility IE a ccnrRequest invoke APDU and for not maintain the signalling connection,

- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccnrRequest return result APDU and enters state CC-Invoked-user-B.

CC_Term02_003 subclause 6.5.3.2.1
Ensure that the IUT in state CC-Idle, receiving a SETUP (sc) message containing in the Facility IE a ccnrRequest invoke APDU including a numberB parameter for which user A has already activated a CC-Request,

- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccnrRequest return error APDU with value "shortTermRejection"and enters state CC-Idle.

CC_Term02_004 subclause 6.5.3.2.1
Ensure that the IUT in state CC-Idle, receiving a SETUP (sc) message containing in the Facility IE a ccnrRequest invoke APDU for a User B which has not subscribed SS-CC,

- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccnrRequest return error APDU with value "longTermRejection"and enters state CC-Idle.

5.2.1.2.3 Indication that User B is not busy

CC_Term03_001 subclause 6.5.3.1.4
Ensure that the IUT in state CC-Invoked-user-B, gets the indication that User B is not busy and the connection release method is used,

- sends a SETUP (sc) message containing in the Facility IE a ccExecPossible invoke APDU with the argument fullArg and enters state CC-Await-Call-Completion.

CC_Term03_002 subclause 6.5.3.1.4
Ensure that the IUT in state CC-Invoked-user-B, gets the indication that User B is not busy and the connection retention method is used,

- sends a FACILITY (sc) message containing in the Facility IE a ccExecPossible invoke APDU with the argument extArg and enters state CC-Await-Call-Completion.

5.2.1.2.4 CC Call without Path Reservation

CC_Term04_001 subclause 6.5.3.1.5
Ensure that the IUT in state CC-Await-Call-Completion, receiving a SETUP message for CR2 containing in the Facility IE a ccRingout invoke APDU and User B is still not busy (i.e. gets the BC indication that user B is alerting) and no call independent signalling connection exists,

- sends a ALERTING message for CR2 and enters state CC-Idle.

CC_Term04_002 subclause 6.5.3.1.5
Ensure that the IUT in state CC-Await-Call-Completion, receiving a SETUP message for CR2 containing in the Facility IE a ccRingout invoke APDU and User B is still not busy (i.e. gets the BC indication that user B is alerting) and a call independent signalling connection exists,

- sends a ALERTING message for CR2,

- sends a RELEASE (sc) message and enters state CC-Idle.

CC_Term04_003 subclause 6.5.3.2.4
Ensure that the IUT in state CC-Await-Call-Completion, receiving a SETUP message for CR2 containing in the Facility IE a ccRingout invoke APDU and User B is busy again and the service retention method applies for that CC Request,

- sends a DISCONNECT message for CR2 containing in the Facility IE a ccRingout return error APDU the value "remoteUserBusyAgain" and enters state CC-Invoked-user-B.

Selection: service retention method applies PICS: A9 and C11

CC_Term04_004 subclause 6.5.3.2.4
Ensure that the IUT in state CC-Await-Call-Completion, receiving a SETUP message for CR2 containing in the Facility IE a ccRingout invoke APDU and User B is busy again and the service retention method does not apply for that CC Request,

- sends a DISCONNECT message for CR2 containing in the Facility IE a ccRingout return error APDU the value "remoteUserBusyAgain",

- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and enters state CC-Idle.

CC_Term04_005 subclause 6.5.3.2.2
Ensure that the IUT in state CC-Await-Call-Completion, receiving a SETUP message for CR2 containing in the Facility IE a ccRingout invoke APDU and the association with an active CC Request is unsuccessful,

- sends a DISCONNECT message for CR2 containing in the Facility IE a ccRingout return error with value "failureToMatch" and remains in the same state.

5.2.1.2.5 CC Call with Path Reservation

CC_Term05_001 subclause 6.5.3.1.6
Ensure that the IUT in state CC-Await-Call-Completion, receiving a SETUP message for CR2 containing in the Facility IE a ccPathReserve invoke APDU and the association of the APDU with an active CC Request is successful and User B is still not busy,

- sends a PROGRESS message for CR2 with CCITT progress description no. 8 and containing in the Facility IE a ccPathReserve return result APDU and enters state CC-Path-Complete.

CC_Term05_002 subclauses 6.5.3.1.6 and 6.5.3.1.7
Ensure that the IUT in state CC-Suspend-user-B, receiving a SETUP message for CR2 containing in the Facility IE a ccPathReserve invoke APDU and the association of the APDU with an active CC Request is successful and User B is still not busy,

- sends a PROGRESS message for CR2 with CCITT progress description no. 8 and containing in the Facility IE a ccPathReserve return result APDU and enters state CC-Path-Complete.

CC_Term05_003 subclause 6.5.3.1.6
Ensure that the IUT in state CC-Path-Complete, receiving a FACILITY message for CR2 containing in the Facility IE a ccRingout invoke APDU and User B is not busy, e.g. gets the BC indication that User B is connected,

- sends a CONNECT message for CR2 and enters state CC-Idle.

CC_Term05_004 subclause 6.5.3.2.4
Ensure that the IUT in state CC-Path-Complete, receiving a FACILITY message for CR2 containing in the Facility IE a ccRingout invoke APDU and User B is busy again and the service retention method applies for that CC Request,

- sends a DISCONNECT message for CR2 containing in the Facility IE a ccRingout return error APDU with value "remoteUserBusyAgain" enters state CC-Invoked-user-B.

Selection: service retention. PICS: C11

CC_Term05_005 subclause 6.5.3.2.4
Ensure that the IUT in state CC-Path-Complete, receiving a FACILITY message for CR2 containing in the Facility IE a ccRingout invoke APDU and User B is busy again and the service retention method does not apply for that CC Request and no call independent signalling connection exists,

- sends a DISCONNECT message for CR2 containing in the Facility IE a ccRingout return error APDU with value "remoteUserBusyAgain" and enters state CC-Idle.

CC_Term05_006 subclause 6.5.3.2.4
Ensure that the IUT in state CC-Path-Complete, receiving a FACILITY message for CR2 containing in the Facility IE a ccRingout invoke APDU and User B is busy again and the service retention method does not apply for that CC Request and a call independent signalling connection exists,

- sends a DISCONNECT message for CR2 containing in the Facility IE a ccRingout return error APDU with value "remoteUserBusyAgain",

- sends a RELEASE (sc) message and enters state CC-Idle.

CC_Term05_007 subclause 6.5.3.2.2
Ensure that the IUT in state CC-Await-Call-Completion, receiving a SETUP message for CR2 containing in the Facility IE a ccPathReserve invoke APDU and the association with an active CC Request is unsuccessful,
- sends a DISCONNECT message for CR2 containing in the Facility IE a ccPathReserve return error with value "failureToMatch" and remains in the same state.

CC_Term05_008 subclause 6.5.3.2.2
Ensure that the IUT in state CC-Suspended-user-B, receiving a SETUP message for CR2 containing in the Facility IE a ccPathReserve invoke APDU and the association with an active CC Request is unsuccessful,
- sends a DISCONNECT message for CR2 containing in the Facility IE a ccPathReserve return error with value "failureToMatch" and remains in the same state.

CC_Term05_009 subclause 6.5.3.2.3
Ensure that the IUT in state CC-Await-Call-Completion, receiving a SETUP message for CR2 containing in the Facility IE a ccPathReserve invoke APDU and the association of the APDU with an active CC Request is successful but User B is busy again,
- sends a DISCONNECT message for CR2 containing in the Facility IE a ccPathReserve return error APDU with value "remoteUserBusyAgain" and enters state CC-Invoked-user-B.

CC_Term05_010 subclause 6.5.3.2.3
Ensure that the IUT in state CC-Suspend-user-B, receiving a SETUP message for CR2 containing in the Facility IE a ccPathReserve invoke APDU and the association of the APDU with an active CC Request is successful but User B is busy again,
- sends a DISCONNECT message for CR2 containing in the Facility IE a ccPathReserve return error APDU with value "remoteUserBusyAgain" and enters state CC-Invoked-user-B.

5.2.1.2.6 CCBS/CCNR Suspension and Resumption

CC_Term06_001 subclause 6.5.3.1.7
Ensure that the IUT in state CC-Await-Call-Completion, receiving a RELEASE (sc) message containing in the Facility IE a ccSuspend invoke APDU,
- sends a RELEASE COMPLETE (sc) message and enters state U00 and the state CC-Suspended-user-B.

CC_Term06_002 subclause 6.5.3.1.7
Ensure that the IUT in state CC-Path-Complete, receiving a DISCONNECT message containing in the Facility IE a ccSuspend invoke APDU,
- sends a RELEASE message and enters state CC-Await-Call-Completion.

CC_Term06_003 subclause 6.5.3.1.7
Ensure that the IUT in state CC-Suspended-user-B, receiving a FACILITY (sc) message containing in the Facility IE a ccResume invoke APDU and if User B is not busy,
- sends a FACILITY (sc) message containing in the Facility IE a ccExecPossible invoke APDU enters state CC-Await-Call-Completion.

5.2.1.2.7 CCBS/CCNR Cancellation

CC_Term07_001 subclause 6.5.3.1.8
Ensure that the IUT in order to cancel a CC Request and no call independent signalling connection is active,
- sends a SETUP (sc) message with containing in the Facility IE a ccCancel invoke APDU including the Argument fullArg with the same basic call information as previously received in the ccbsRequest invoke APDU and enters state CC-Idle.

CC_Term07_002 subclause 6.5.3.1.8
Ensure that the IUT in order to cancel a CC Request and a call independent signalling connection is active,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU including the Argument extArg and enters state CC-Idle.

CC_Term07_003 subclause 6.5.3.1.8
Ensure that the IUT on receiving a RELEASE (sc) message containing in the Facility IE a ccCancel invoke APDU,
- sends a RELEASE COMPLETE (sc) message and enters state U00 and state CC-Idle.

CC_Term07_004 subclause 6.5.3.1.8
Ensure that the IUT on receiving a SETUP (sc) message containing in the Facility IE a ccCancel invoke APDU and the association of the APDU with an active CC Request is successful,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and enters state CC-Idle.

CC_Term07_005 subclause 6.5.3.1.8
Ensure that the IUT in state CC-Path-Complete, receiving a DISCONNECT message containing in the Facility IE a ccCancel invoke APDU and the association of the APDU with an active CC Request is successful and no call independent signalling connection exists,
- sends a RELEASE message and enters state CC-Idle.

CC_Term07_006 subclause 6.5.3.1.8
Ensure that the IUT in state CC-Path-Complete, receiving a DISCONNECT message containing in the Facility IE a ccCancel invoke APDU and the association of the APDU with an active CC Request is successful and a call independent signalling connection exists,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and enters state CC-Idle.

CC_Term07_007 subclause 6.5.3.2.2
Ensure that the IUT on receiving a SETUP (sc) message containing in the Facility IE a ccCancel invoke APDU and the association of the APDU with an active CC Request is unsuccessful,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing".

CC_Term07_008 subclause 6.5.3.2.5
Ensure that the IUT on receiving a DISCONNECT message without any SS-CC invoke APDU for a CC Call in progress and no call independent signalling connection is active,
- sends a SETUP (sc) message containing in the Facility IE a ccCancel invoke APDU including the Argument fullArg with the same basic call information as previously received in the ccbsRequest invoke APDU and enters state CC-Idle.

CC_Term07_009 subclause 6.5.3.2.5
Ensure that the IUT on receiving a DISCONNECT message without any SS-CC invoke APDU for a CC Call in progress and a call independent signalling connection is active,
- sends a RELEASE (sc) message with cause value #16 "normal call clearing" and containing in the Facility IE a ccCancel invoke APDU including the Argument extArg and enters state CC-Idle.

5.2.2 Impact of Interworking with public ISDNs

This is beyond the scope of the "b" service entry point as defined in EN 301 060-1 [9].

5.2.3 Protocol Interaction between SS-CCBS and other Supplementary Services and ANFs

5.2.3.1 Originating PINX procedures for invoking SS-CCBS at a SS-CFU/SS-CFB/SS-CD diverted-to user

The TPs in this subclause are only applicable to an ITU if the PICS F2 and/or G2 are supported.

CC_Int01_001 subclauses 6.8.5.1, 6.8.6.1 and 6.8.8
Ensure that the IUT in call state N00, receiving a FACILITY message for CR1 containing in the Facility IE a divertingLegInformation1 invoke APDU including in the element "nominatedNr" the party number of the diverted-to User,
- sends a SETUP (sc) message reflecting in the called party number IE the "nominatedNr" and containing in the Facility IE a ccbsRequest invoke APDU including in the element "numberB" the "nominatedNr".

5.2.4 Protocol Interaction between SS-CCNR and other Supplementary Services and ANFs

5.2.4.1 Originating PINX procedures for invoking SS-CCNR at a SS-CFU/SS-CFB/SS-CCNR/SS-CD diverted-to User

The TPs in this subclause are only applicable to an ITU if the PICS H2 and/or I2 and/or J2 are supported.

CC_Int02_001 subclauses 6.9.5.1, 6.9.6.1, 6.9.7.1 and 6.9.8
Ensure that the IUT in call state N00, receiving a FACILITY message for CR1 containing in the Facility IE a divertingLegInformation1 invoke APDU including in the element "nominatedNr" the party number of the diverted-to User,

- sends a SETUP (sc) message reflecting in the called party number IE the "nominatedNr" and containing in the Facility IE a ccnrRequest invoke APDU including in the element "numberB" the "nominatedNr".

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 [5].

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.

7 Requirements for a comprehensive testing service

As a minimum the Remote test method, as specified in ISO/IEC 9646-2 [5], shall be used by any organization claiming to provide a comprehensive testing service for equipment claiming conformance to ETS 300 366 [11].

Bibliography

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

EN 301 061-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Generic functional protocol for the support of supplementary services at the "b" service entry point for Virtual Private Network (VPN) applications; Part 1: Protocol specification".

History

Document history				
V1.1.3	September 1999	Public Enquiry	PE 9958:	1999-09-08 to 2000-01-07