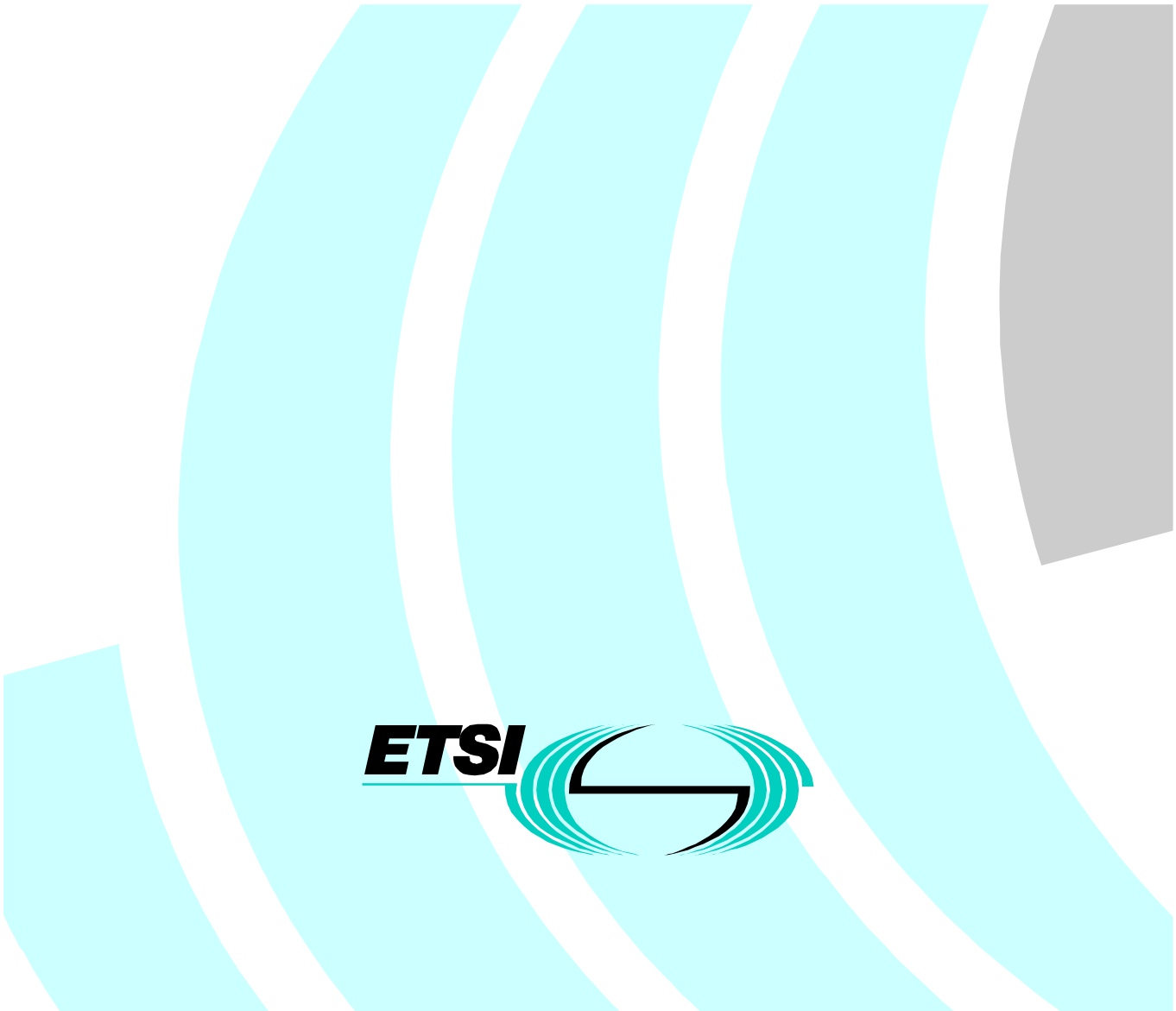
ETSI EN 300 359-5 V1.4.1 (2001-06)

European Standard (Telecommunications series)

**Integrated Services Digital Network (ISDN);
Completion of Calls to Busy Subscriber (CCBS)
supplementary service;
Digital Subscriber Signalling System No. one (DSS1) protocol;
Part 5: Test Suite Structure and Test Purposes (TSS&TP)
specification for the network**



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Contents

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN).

The present document is part 5 of a multi-part deliverable covering the Digital Subscriber Signalling System No. one (DSS1) protocol specification for the Integrated Services Digital Network (ISDN) Completion of Calls to Busy Subscriber (CCBS) supplementary service, as described below:

Part 1: "Protocol specification";

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

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

Part 4: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the user";

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

Part 6: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network".

National transposition dates	
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1 Scope

The present document specifies the Test Suite Structure and Test Purposes (TSS&TP) for the Network side of the T reference point or coincident S and T reference point (as defined in ITU-T Recommendation I.411 [6]) of implementations conforming to the stage three standard for the Completion of Calls to Busy Subscriber (CCBS) supplementary service for the pan-European Integrated Services Digital Network (ISDN) by means of the Digital Subscriber Signalling System No. one (DSS1) protocol, EN 300 359-1 [1].

A further part of the present document specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma based on the present document. Other parts specify the TSS&TP and the ATS and partial PIXIT proforma for the User side of the T reference point or coincident S and T reference point of implementations conforming to EN 300 359-1 [1].

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.

[1] ETSI EN 300 359-1 (V1.3.2): "Integrated Services Digital Network (ISDN); Completion of Calls to Busy Subscriber (CCBS) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[2] ETSI EN 300 359-2 (V1.2.4): "Integrated Services Digital Network (ISDN); Completion of Calls to Busy Subscriber (CCBS) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification".

[3] ISO/IEC 9646-1 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

[4] ISO/IEC 9646-2 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract test suite specification".

[5] ETSI 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".

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

[7] ETSI EN 300 403-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification [ITU-T Recommendation Q.931 (1993), modified]".

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

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

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

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 [3]

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

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

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

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

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

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

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

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

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

3.1.2 Definitions related to EN 300 359-1

Call Reference (CR): see EN 300 403-1 [7], clause 4.3

component: see EN 300 196-1 [5], clause 11.2.2.1

Integrated Services Digital Network (ISDN): see ITU-T Recommendation I.112 [8], definition 308

invoke component: see EN 300 196-1 [5], clause 11.2.2.1

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

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

network (T): DSS1 protocol entity at the Network side of the user-network interface where a T reference point applies (Network connected to Private ISDN)

return error component: see EN 300 196-1 [5], clause 11.2.2.1

return result component: see EN 300 196-1 [5], clause 11.2.2.1

served user: served user is the user who invokes the CCBS supplementary service

service; telecommunication service: see ITU-T Recommendation I.112 [8], definition 201

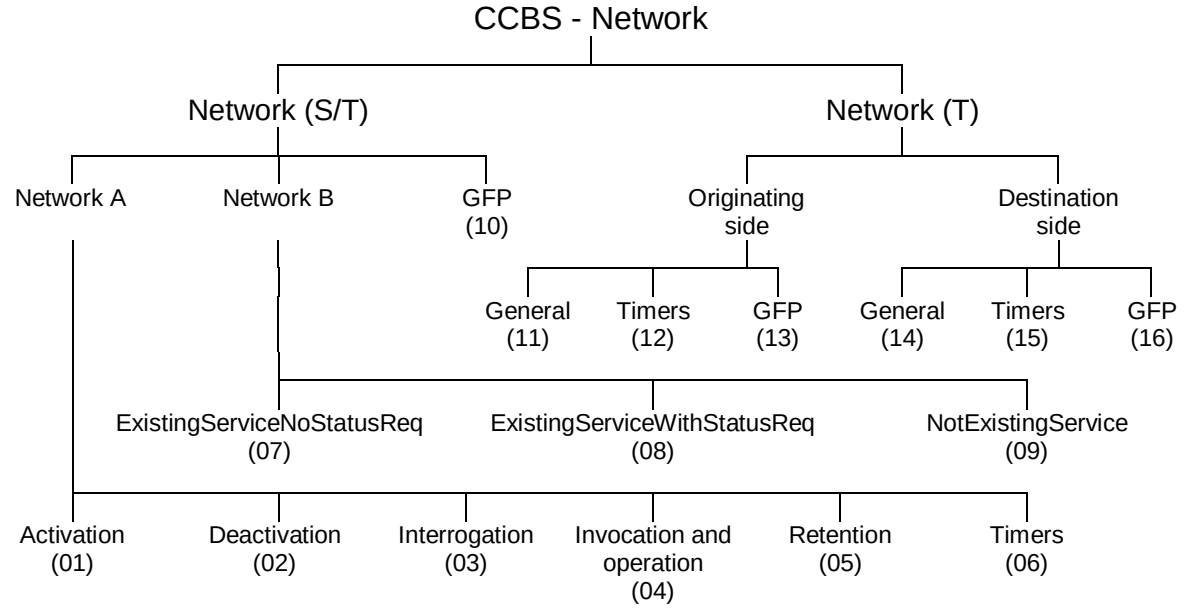
supplementary service: see ITU-T Recommendation I.210 [9], clause 2.4

3.2 Abbreviations

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

ATM	Abstract Test Method
ATS	Abstract Test Suite
CCBS	Completion of Calls to Busy Subscriber
CR	Call Reference
CR1	normal (bearer related) CR
CR2	CR used for bearer independent transport mechanism
DSS1	Digital Subscriber Signalling System No. one
GFP	Generic Functional Protocol
ISDN	Integrated Services Digital Network
IUT	Implementation Under Test
N00	Null call state
N01	Call Initiated call state
N03	Outgoing Call Proceeding call state
N04	Call Delivered call state
N06	Call Present call state
N07	Call Received call state
N08	Connect Request call state
N09	Incoming Call Proceeding call state
N10	Active call state
N12	Disconnect Indication call state
N31	Bearer Independent Transport call state
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
TP	Test Purpose
TSS	Test Suite Structure
UI	Unnumbered Information

4 Test Suite Structure (TSS)



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

Figure 1: Test suite structure

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 supplementary service and whether it applies to the network or the user (see table 1).

Table 1: TP identifier naming convention scheme

Identifier: **<ss>_<iut><group>_<nnn>**				
<ss>	=	supplementary service:	e.g. "CCBS"	
<iut>	=	type of IUT:	U	User
			N	Network
<group>	=	group	2 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 EN 300 359-1 [1].

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. 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 TP

TP part	Text	Example
Header	<Identifier> *tab* <paragraph number in base ETS> *tab*	see table 1 clause 0.0.0
Stimulus	Ensure that the IUT in the <basic call state> and <supplementary service state> <trigger> *see below for message structure* *or* <goal>	 N10, N12, etc. CCBS Idle state receiving a XXXX message to request a ...
Reaction	<action> <conditions> *if the action is sending* *see below for message structure* <next action>, *etc.* and enters <supplementary service state> *and/or* and remains in the same state(s) *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 EN 300 359-1 [1] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the PICS specification EN 300 359-2 [2].

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 (EN 300 406 [10]).

All test purposes are mandatory unless they have selection criteria. Optional test purposes (with selection criteria) are applicable according to the configuration options of the IUT. The configuration option shall be covered by a PICS item.

5.2 Network TPs for CCBS

Unless specified:

- the messages indicated are valid and contain at least the mandatory information elements and possibly optional information elements;
- the information elements indicated are valid and contain at least the mandatory parameters and possibly optional parameters;
- all PICS items referred to in this clause are as specified in EN 300 359-2 [2] unless indicated otherwise by another numbered reference. Network TPs for CCBS.

5.2.1 Network (S/T)

NOTE 1: All FACILITY messages in TPs associated with clause 9, use the dummy call reference as specified in clauses 8.3.2.2 and 8.3.2.4 of EN 300 196-1 [5] (bearer independent connectionless transport mechanism). Unless stated otherwise, FACILITY messages are sent/received using point-to-point data link (I frame) and the IUT is configured so that it "knows" that a point-to-point configuration exists at the user's access.

NOTE 2: Although the sending or receiving of a message using the dummy call reference is independent of any particular call state, in the following TPs call state N12 is used to show that the IUT has just begun clearing of a call and call state N00 is used to indicate that Layer 2 is active and capable of carrying bearer independent messages.

5.2.1.1 Network A

5.2.1.1.1 Activation

CCBS_N01_001 clause 9.1.1

Ensure that the IUT in the Disconnect Indication call state N12 and CCBS Idle state and Retention Active state for CCBS, on receipt of a FACILITY message containing a Facility information element with a CCBSRequest invoke component including the CallLinkageID, sends a FACILITY message containing a Facility information element with a CCBSRequest return result component including the CCBSReference and recallMode and remains in call state N12.

CCBS_N01_002 clause 9.1.2

Ensure that the IUT in the Disconnect Indication call state N12 and CCBS Idle state and Retention Active state, on receipt of a FACILITY message containing a Facility information element with a CCBSRequest invoke component including the CallLinkageID from a user who has not subscribed to CCBS, sends a FACILITY message containing a Facility information element with a CCBSRequest return error component indicating "notSubscribed" and remains in call state N12.

Selection: IUT provides Call Information Retention procedures even though CCBS not subscribed.

CCBS_N01_003 clause 9.1.2

Ensure that the IUT in the Disconnect Indication call state N12 and CCBS Idle state and Retention Active state for CCBS, on receipt of a FACILITY message containing a Facility information element with a CCBSRequest invoke component including an invalid CallLinkageID, sends a FACILITY message containing a Facility information element with a CCBSRequest return error component indicating "invalidCallLinkageID" and remains in call state N12.

CCBS_N01_004 clause 9.1.2

Ensure that the IUT in the Disconnect Indication call state N12 and CCBS Idle state and Retention Active state, on receipt of a FACILITY message containing a Facility information element with a CCBSRequest invoke component including the CallLinkageID even though the attempted call failed for a reason other than the called user was busy, sends a FACILITY message containing a Facility information element with a CCBSRequest return error component indicating "callFailureReasonNotBusy" and remains in call state N12.

Selection: IUT provides Call Information Retention procedures for service other than CCBS.

CCBS_N01_005 clause 9.1.2

Ensure that the IUT in the Disconnect Indication call state N12 and CCBS Idle state and Retention Active state, on receipt of a FACILITY message containing a Facility information element with a CCBSRequest invoke component including the CallLinkageID but user A's CCBS queue is full, sends a FACILITY message containing a Facility information element with a CCBSRequest return error component indicating "outgoingCCBSQueueFull" and remains in call state N12.

Selection: IUT provides Call Information Retention procedures for service other than CCBS OR IUT provides Call Information Retention procedures for CCBS even when user A's CCBS queue is full.

CCBS_N01_006 clause 9.1.2

Ensure that the IUT in the Null call state N00 and CCBS Activated state, on receipt of a FACILITY message containing a Facility information element with a CCBSRequest invoke component including the CallLinkageID (but the served user has already activated the CCBS supplementary service for the call identified by the CallLinkageID), sends a FACILITY message containing a Facility information element with a CCBSRequest return error component indicating "cCBSIsAlreadyActivated" and remains in call state N00.

CCBS_N01_007 clause 9.1.2

Ensure that the IUT in the Disconnect Indication call state N12 and CCBS Idle state and Retention Active state, on receipt of a FACILITY message containing a Facility information element with a CCBSRequest invoke component including the CallLinkageID but the served user has already activated CCBS supplementary service for an identical call (in Null call state N00 and CCBS Activated state), sends a FACILITY message containing a Facility information element with a CCBSRequest return error component indicating "cCBSIsAlreadyActivated" and remains in call state N12.

Selection: IUT supports option to "Check for identical calls". PICS: MC 8.

CCBS_N01_008 clause 9.1.2

Ensure that the IUT in the Disconnect Indication call state N12 and CCBS Idle state and Retention Active state for CCBS, on receipt of a FACILITY message containing a Facility information element with a CCBSRequest invoke component including the CallLinkageID, but interactions between CCBS supplementary service and the call identified by the CallLinkageID are invalid, sends a FACILITY message containing a Facility information element with a CCBSRequest return error component indicating "supplementaryServiceInteractionNotAllowed" and remains in call state N12.

CCBS_N01_009 clause 9.1.2

Ensure that the IUT in the Disconnect Indication call state N12 and CCBS Idle state and Retention Active state, on receipt of a FACILITY message containing a Facility information element with a CCBSRequest invoke component including the CallLinkageID, but CCBS is not available to the destination, sends a FACILITY message containing a Facility information element with a CCBSRequest return error component indicating "longTermDenial" and remains in call state N12.

Selection: The IUT supports Call Information Retention procedure when "CCBS is not available to the destination".

CCBS_N01_010 clause 9.1.2

Ensure that the IUT in the Disconnect Indication call state N12 and CCBS Idle state and Retention Active state, on receipt of a FACILITY message containing a Facility information element with a CCBSRequest invoke component including the CallLinkageID, but CCBS is not available to the destination at this time, sends a FACILITY message containing a Facility information element with a CCBSRequest return error component indicating "shortTermDenial" and remains in call state N12.

5.2.1.1.2 Deactivation

CCBS_N02_001 clauses 9.2.1 and 9.4.4.1

Ensure that the IUT in the Null call state N00 and CCBS Activated state, on receipt of a FACILITY message containing a Facility information element with a CCBSDeactivate invoke component including the correct CCBSReference parameter, sends a FACILITY message containing a Facility information element with a CCBSDeactivate return result component with cCBSEraseReason indicating "normal-unspecified" and a FACILITY message containing a Facility information element with a CCBSErase invoke component and enters the CCBS Idle state.

CCBS_N02_002 clause 9.2.2

Ensure that the IUT in the Null call state N00 and CCBS Activated state, on receipt of a FACILITY message containing a Facility information element with a CCBSDeactivate invoke component including an invalid CCBSReference, sends a FACILITY message containing a Facility information element with a CCBSDeactivate return error component indicating "invalidCCBSReference" and remains in the same state.

CCBS_N02_003 clause 9.2.2

Ensure that the IUT in the Null call state N00 and CCBS Idle state, on receipt of a FACILITY message containing a Facility information element with a CCBSDeactivate invoke component when the user has not subscribed to the supplementary service, sends a FACILITY message containing a Facility information element with a CCBSDeactivate return error component indicating "invalidCCBSReference".

5.2.1.1.3 Interrogation

CCBS_N03_001 clause 9.3.1.1

Ensure that the IUT in the Null call state N00 and CCBS Activated state, on receipt of a FACILITY message containing a Facility information element with a CCBSInterrogate invoke component without a CCBSReference parameter, sends a FACILITY message containing a Facility information element with a CCBSInterrogate return result component including the correct value for the recallMode parameter, and in the CallDetails parameter a list of all currently active CCBS requests giving for each the CCBSReference, addressOfB, q931InfoElement and if available, the subAddressOfA.

CCBS_N03_002 clause 9.3.1.1

Ensure that the IUT in the Null call state N00 and CCBS Idle state, on receipt of a FACILITY message containing a Facility information element with a CCBSInterrogate invoke component without a CCBSReference parameter and no CCBS requests exist, sends a FACILITY message containing a Facility information element with a CCBSInterrogate return result component including the correct value for the recallMode parameter, and no CallDetails parameter.

CCBS_N03_003 clause 9.3.1.2

Ensure that the IUT in the Null call state N00 and CCBS Idle state, on receipt of a FACILITY message containing a Facility information element with a CCBSInterrogate invoke component without a CCBSReference parameter but the user has not subscribed to CCBS, sends a FACILITY message containing a Facility information element with a CCBSRequest return error component indicating "notSubscribed".

CCBS_N03_004 clause 9.3.2.1

Ensure that the IUT in the Null call state N00 and CCBS Activated state, on receipt of a FACILITY message containing a Facility information element with a CCBSInterrogate invoke component including a valid cCBSReference parameter, sends a FACILITY message containing a Facility information element with a CCBSInterrogate return result component including the recallMode and in the callDetails parameter, addressOfB, q931InfoElement, cCBSReference and if available, the subAddressOfA.

CCBS_N03_005 clause 9.3.2.2

Ensure that the IUT in the Null call state N00 and CCBS Idle state, on receipt of a FACILITY message containing a Facility information element with a CCBSInterrogate invoke component including a CCBSReference parameter but the user has not subscribed to CCBS, sends a FACILITY message containing a Facility information element with a CCBSRequest return error component indicating "notSubscribed".

CCBS_N03_006 clause 9.3.2.2

Ensure that the IUT in the Null call state N00 and CCBS Activated state, on receipt of a FACILITY message containing a Facility information element with a CCBSInterrogate invoke component including an invalid CCBSReference parameter, sends a FACILITY message containing a Facility information element with a CCBSRequest return error component indicating "invalidCCBSReference".

5.2.1.1.4 Invocation and operation

CCBS_N04_001 clause 9.4.1.1

Ensure that the IUT in the CCBS Check A state on receiving a FACILITY message containing a cCBSStatusRequest return result component encoded as free, in order to indicate that it is prepared for establishment of the requested call, sends a FACILITY message containing a Facility information element with a CCBSRemoteUserFree invoke component including the recallMode, cCBSReference, addressOfB and q931InfoElement.

CCBS_N04_002 clause 9.4.1.1

Ensure that the IUT in the CCBS Check A state, and a multipoint configuration exists, on receiving a FACILITY message containing a cCBSStatusRequest return result component encoded as free, in order to indicate that it is prepared for establishment of the requested call, sends a FACILITY message (UI frame) containing a Facility information element with a CCBSRemoteUserFree invoke component including the recallMode, cCBSReference, addressOfB and q931InfoElement.

CCBS_N04_003 clause 9.4.1.2

Ensure that the IUT in the Null call state N00 and CCBS Free state, (after sending a FACILITY message containing a Facility information element with a CCBSRemoteUserFree invoke component) on receipt of a FACILITY message with a CCBSRemoteUserFree reject component, takes no action and remains in the same states.

CCBS_N04_004 clause 9.4.2.1

Ensure that the IUT in the Null call state N00 and CCBS Free state, if the specific recall option applies, on receipt of a SETUP message containing Bearer capability information element(s) from the original call and a Facility information element with a CCBSCall invoke component including the CCBSReference from the previously sent CCBSRemoteUserFree invoke component, continues en-bloc basic call procedures using the retained call information, sends a CALL PROCEEDING message and enters call state N03.

Selection: Specific recall option supported. PICS: MC 7.2.

CCBS_N04_005 clause 9.4.2.1

Ensure that the IUT in the Null call state N00 and CCBS Free state, if the global recall option applies and a multipoint configuration exists, on receipt of a SETUP message containing Bearer capability information element(s) from the original call and a Facility information element with a CCBSCall invoke component including the CCBSReference from the previously sent CCBSRemoteUserFree invoke component, continues basic call procedures and sends a FACILITY message (UI frame) containing a Facility information element with a CCBSStopAlerting invoke component including the CCBSReference, sends a CALL PROCEEDING message and enters call state N03.

Selection: Global recall option supported. PICS: MC 7.1.

CCBS_N04_006 clause 9.4.2.2

Ensure that the IUT in the Null call state N00 and CCBS Free state, on receipt of a SETUP message containing Bearer capability information element(s) from the original call and containing a Facility information element with a CCBSCall invoke component including an invalid CCBSReference value, clears the call attempts and includes a Facility information element with a CCBSCall return error component indicating "invalidCCBSReference" in a clearing message.

CCBS_N04_007 clause 9.4.2.2

Ensure that the IUT in the Null call state N00 and CCBS Activated state, on receipt of a SETUP message containing Bearer capability information element(s) from the original call and containing a Facility information element with a CCBSCall invoke component before having sent a cCBSRemoteUserFree invoke component for this user's CCBSReference, clears the call attempts and includes a Facility information element with a CCBSCall return error component indicating "notReadyForCall" in a clearing message.

CCBS_N04_008 clause 9.4.2.2

Ensure that the IUT in the Null call state N00 and CCBS Free state, on receipt of a SETUP message containing Bearer capability information element(s) from the original call and containing a Facility information element with a CCBSCall invoke component when no B-channels can be selected, sends a RELEASE COMPLETE cause #34 or #44 and moves to call state N00.

Selection: IUT supports specific recall option. PICS: MC 7.2.

CCBS_N04_009 clause 9.4.2.2

Ensure that the IUT in the Null call state N00 and CCBS Free state, where a multipoint configuration exists and the global recall option applies, on receipt of a SETUP message containing Bearer capability information element(s) from the original call and containing a Facility information element with a CCBSCall invoke component when no B-channels can be selected, sends a FACILITY message (UI frame) containing a Facility information element with a CCBSStopAlerting invoke component including the same CCBSReference value and a RELEASE COMPLETE cause #34 or #44 and moves to call state N00.

Selection: Global recall option supported. PICS: MC 7.1.

CCBS_N04_010 clause 9.4.2.2

Ensure that the IUT in the Null call state N00 and CCBS Free state, where a multipoint configuration exists and the global recall option applies, on receipt of more than one SETUP message containing Bearer capability information element(s) from the original call and containing a Facility information element with a CCBSCall invoke component, continues basic call procedures for the first SETUP message and sends a RELEASE COMPLETE message containing a Facility information element with a CCBSCall return error component indicating "alreadyAccepted" in response to the other SETUP messages and moves to call state N01.

Selection: Global recall option supported. PICS: MC 7.1.

CCBS_N04_011 clauses 9.4.3.1 and 9.4.4.1

Ensure that the IUT in the Outgoing call proceeding call state N03 and CCBS Call Init state, to indicate that user B has responded to the call with an ALERTING message, sends an ALERTING message and a FACILITY message containing a Facility information element with a cCBSErase invoke indicating cCBSEraseReason "normal-unspecified" and enters the call state N04.

CCBS_N04_012 clauses 9.4.3.1 and 9.4.4.1

Ensure that the IUT in the Outgoing call proceeding call state N03 and CCBS Call Init state, to indicate that user B has responded to the call with a CONNECT message, sends a CONNECT message and a FACILITY message containing a Facility information element with a cCBSErase invoke indicating cCBSEraseReason "normal-unspecified" and enters the call state N10.

CCBS_N04_013 clauses 9.4.3.2 and 9.4.4.1

Ensure that the IUT in the Outgoing Call Proceeding call state N03 and CCBS Call Init state, if it is not able to establish the call because the called user is busy again, sends a DISCONNECT message and does not send a FACILITY message containing a Facility information element with a cCBSErase invoke component and enters the call state N12.

Selection: "CCBS request retention" option supported. PICS: MC 6.

CCBS_N04_014 clauses 9.4.3.2 and 9.4.4.1

Ensure that the IUT in the Outgoing Call Proceeding call state N03 and CCBS Call Init state, if it is not able to establish the call because the called user is busy again, sends a DISCONNECT message containing a Facility information element with a CallInfoRetain invoke component including a CallLinkageID; and sends a FACILITY message containing a Facility information element with a CCBSErase invoke component including CCBSEraseReason encoded as "basic-call-failed"; and enters call state N12.

Selection: "CCBS request retention" option NOT supported. PICS: NOT MC 6.

CCBS_N04_015 clauses 9.4.3.2 and 9.4.4.1

Ensure that the IUT in the Outgoing Call Proceeding call state N03 and CCBS Call Init state, where a multipoint configuration exists, if it is not able to establish the call because the called user is busy again, sends a DISCONNECT message containing a Facility information element with a CallInfoRetain invoke component including a CallLinkageID, and sends a FACILITY message (UI frame) containing a Facility information element with a CCBSErase invoke component including CCBSEraseReason encoded as "basic-call-failed"; and enters call state N12.

Selection: "CCBS request retention" option NOT supported. PICS: NOT MC 6.

CCBS_N04_016 clauses 9.4.3.2 and 9.4.4.1

Ensure that the IUT in the Outgoing Call Proceeding call state N03 and CCBS Call Init state, if it is not able to establish the call for any reason other than the called user is busy, sends a DISCONNECT message; and sends a FACILITY message containing a Facility information element with a CCBSErase invoke component including CCBSEraseReason encoded as "basic-call-failed"; and enters call state N12.

Selection: "CCBS request retention" option supported. PICS: MC 6.

CCBS_N04_017 clauses 9.4.3.2 and 9.4.4.1

Ensure that the IUT in the Outgoing Call Proceeding call state N03 and CCBS Call Init state, where a multipoint configuration exists, if it is not able to establish the call for any reason other than the called user is busy, sends a DISCONNECT message; and sends a FACILITY message (UI frame) containing a Facility information element with a CCBSErase invoke component including CCBSEraseReason encoded as "basic-call-failed"; and enters call state N12.

Selection: "CCBS request retention" option supported. PICS: MC 6.

NOTE 1: The above two TPs are now repeated but with the "CCBS request retention" option NOT supported. This is to demonstrate that the deactivation of the CCBS supplementary service under these circumstances is independent of this option.

CCBS_N04_018 clauses 9.4.3.2 and 9.4.4.1

Ensure that the IUT in the Outgoing Call Proceeding call state N03 and CCBS Call Init state, if it is not able to establish the call for any reason other than the called user is busy, sends a DISCONNECT message; and sends a FACILITY message containing a Facility information element with a CCBSErase invoke component including CCBSEraseReason encoded as "basic-call-failed"; and enters call state N12.

Selection: "CCBS request retention" option NOT supported. PICS: NOT MC 6.

CCBS_N04_019 clauses 9.4.3.2 and 9.4.4.1

Ensure that the IUT in the Outgoing Call Proceeding call state N03 and CCBS Call Init state, where a multipoint configuration exists, if it is not able to establish the call for any reason other than the called user is busy, sends a DISCONNECT message; and sends a FACILITY message (UI frame) containing a Facility information element with a CCBSErase invoke component including CCBSEraseReason encoded as "basic-call-failed"; and enters call state N12.

Selection: "CCBS request retention" option NOT supported. PICS: NOT MC 6.

CCBS_N04_020 clauses 9.4.3.2 and 9.4.4.1

Ensure that the IUT in the Outgoing Call Proceeding call state N03 and CCBS Call Init state, on receipt of a DISCONNECT message from the served user (before the IUT has sent an ALERTING or CONNECT message), sends a RELEASE message; and sends a FACILITY message containing a Facility information element with a CCBSErase invoke component indicating "basic-call-failed"; and enters call state N19.

CCBS_N04_021 clauses 9.4.3.2 and 9.4.4.1

Ensure that the IUT in the Outgoing Call Proceeding call state N03 and CCBS Call Init state, where a multipoint configuration exists, on receipt of a DISCONNECT message from the served user (before the IUT has sent an ALERTING or CONNECT message), sends a RELEASE message; and sends a FACILITY message (UI frame) containing a Facility information element with a CCBSErase invoke component indicating "basic-call-failed"; and enters call state N19.

CCBS_N04_022 clauses 9.4.3.2 and 9.4.4.1

Ensure that the IUT in the Outgoing Call Proceeding call state N03 and CCBS Call Init state, on receipt a FACILITY message containing a Facility information element with a CCBSDeactivate invoke component, continues with normal call handling; and sends a FACILITY message containing a Facility information element with a CCBSDeactivate return result component; and sends a FACILITY message containing a Facility information element with a CCBSErase invoke component indicating "normal-unspecified"; and remains in the call state N03.

CCBS_N04_023 clauses 9.4.3.2 and 9.4.4.1

Ensure that the IUT in the Outgoing Call Proceeding call state N03 and CCBS Call Init state, where a multipoint configuration exists, on receipt a FACILITY message containing a Facility information element with a CCBSDeactivate invoke component, continues with normal call handling; and sends a FACILITY message (I frame) containing a Facility information element with a CCBSDeactivate return result component; and sends a FACILITY message (UI frame) containing a Facility information element with a CCBSErase invoke component indicating "normal-unspecified"; and remains in the call state N03.

CCBS_N04_024 clause 9.4.5.1

Ensure that the IUT in the CCBS Check A state on receiving a FACILITY message containing a cCBSStatusRequest return result component encoded as busy, sends a FACILITY message containing a Facility information element with a CCBSBFree invoke component including the recallMode, CCBSReference, addressOfB and q931InfoElement, and remains in call state N00.

NOTE 2: In this TP, the IUT need to be informed (internal network indication) that user B is not busy.

CCBS_N04_025 clause 9.4.5.1

Ensure that the IUT in the CCBS Check A state, where a multipoint configuration exists, on receiving a FACILITY message containing a cCBSStatusRequest return result component encoded as busy, sends a FACILITY message (UI frame) containing a Facility information element with a CCBSBFree invoke component including the recallMode, CCBSReference, addressOfB and q931InfoElement and remains in call state N00.

NOTE 3: In this TP the IUT needs to be informed (internal network indication) that user B is not busy.

CCBS_N04_026 clause 9.4.5.2

Ensure that the IUT in the Null call state N00 and CCBS Suspended state, having sent a CCBSFree invoke component, on receipt of a FACILITY message containing a Facility information element with a CCBSBFree reject component, takes no action and remains in call state N00.

CCBS_N04_027 clause 9.4.6.1

Ensure that the IUT in the Null call state N00 and CCBS Activated state, to determine if the served user is not busy, sends a FACILITY message containing a Facility information element with a CCBSStatusRequest invoke component including the recallMode, CCBSReference and q931InfoElement and enters CCBS Check A state and remains in call state N00.

CCBS_N04_028 clause 9.4.6.1

Ensure that the IUT in the Null call state N00 and CCBS Activated state, where a multipoint configuration exists, to determine if the served user is not busy, sends a FACILITY message (UI frame) containing a Facility information element with a CCBSStatusRequest invoke component including the recallMode, CCBSReference and q931InfoElement and remains in call state N00.

CCBS_N04_029 clause 9.4.6.1

Ensure that the IUT in the Null call state N00 and CCBS Check A state, on receipt of a CCBSStatusRequest return result component indicating "busy", takes no protocol actions.

CCBS_N04_030 clause 9.4.6.2

Ensure that the IUT in the Null call state N00 and CCBS Check A state, having sent a FACILITY message containing a Facility information element with a CCBSStatusRequest invoke component, on receipt of a FACILITY message containing a Facility information element with a CCBSStatusRequest reject component, takes no protocol action.

5.2.1.1.5 Retention

CCBS_N05_001 clause 9.6.1

Ensure that the IUT in the Outgoing Call Proceeding call state N03 and Retention Idle state, to provide the call information retention procedure, sends a DISCONNECT message containing a Facility information element with a CallInfoRetain invoke component including a CallLinkageID and enters state N12 and Retention Active state.

CCBS_N05_002 clause 9.6.1 conditional

Ensure that the IUT in the Null call state N00 and Retention Active state and CCBS Activated state, having released the call information on operation of the CCBS supplementary service, and it is the case that no other supplementary service needs the call information, sends a FACILITY message containing a Facility information element with an EraseCallLinkageID invoke component including the CallLinkageID.

CCBS_N05_003 clause 9.6.1 conditional

Ensure that the IUT in the Null call state N00 and Retention Active state and CCBS Activated state, where a multipoint configuration exists, having released the call information on operation of the CCBS supplementary service, and it is the case that no other supplementary service needs the call information, sends a FACILITY message (UI frame) containing a Facility information element with an EraseCallLinkageID invoke component including the CallLinkageID.

5.2.1.1.6 Timers

CCBS_N06_001 clause 9.4.1.2 timer

Ensure that the IUT in the Null call state N00 and CCBS Free state and if timer T-CCBS3 expires, sends a FACILITY message containing a Facility information element with the CCBSErase invoke component including the CCBSEraseReason coded as "t-CCBS3-timeout" and enters CCBS Idle state.

CCBS_N06_002 clause 9.4.1.2 timer

Ensure that the IUT in the Null call state N00 and CCBS Free state and a multipoint configuration exists and if timer T-CCBS3 expires, sends a FACILITY message (UI frame) containing a Facility information element with the CCBSErase invoke component including the CCBSEraseReason coded as "t-CCBS3-timeout".

CCBS_N06_003 clauses 9.4.3.2 and 9.4.1.2 timer

Ensure that the IUT in the Null call state N00 and CCBS Activated state, on expiry of timer T-CCBS2, sends a FACILITY message containing a Facility information element with the CCBSErase invoke component including the CCBSEraseReason coded as "t-CCBS2-timeout".

CCBS_N06_004 clauses 9.4.3.2 and 9.4.1.2 timer

Ensure that the IUT in the Null call state N00 and CCBS Activated state, where a multipoint configuration exists, on expiry of timer T-CCBS2, sends a FACILITY message (UI frame) containing a Facility information element with the CCBSErase invoke component including the CCBSEraseReason coded as "t-CCBS2-timeout".

CCBS_N06_005 clauses 9.4.6.2 and 9.4.4 timer

Ensure that the IUT in the Null call state N00 and CCBS Check A state, having sent a FACILITY message containing a Facility information element with a CCBSStatusRequest invoke component, if the timer T-CCBS1 expires and no FACILITY message containing a Facility information element with a CCBSStatusRequest return result component has been received, sends a FACILITY message containing a Facility information element with a CCBSErase invoke component indicating "normal-unspecified".

CCBS_N06_006 clauses 9.4.6.2 and 9.4.4 timer

Ensure that the IUT in the Null call state N00 and CCBS Check A state, where a multipoint configuration exists, having sent a FACILITY message containing a Facility information element with a CCBSStatusRequest invoke component, if the timer T-CCBS1 expires and no FACILITY message containing a Facility information element with a CCBSStatusRequest return result component has been received, sends a FACILITY message (UI frame) containing a Facility information element with a CCBSErase invoke component indicating "normal-unspecified".

CCBS_N06_007 clause 9.6.1 timer conditional

Ensure that the IUT in N12 and CCBS Idle state, on expiry of T-RETENTION, sends a FACILITY message containing a Facility information element with an EraseCallLinkageID invoke component containing the callLinkageID parameter.

Selection: The IUT provides the call information retention procedure. PICS: MC 5.

CCBS_N06_008 clause 9.6.1 timer conditional

Ensure that the IUT in N12 and CCBS Idle state, where a multipoint configuration exists, on expiry of T-RETENTION, sends a FACILITY message (UI frame) containing a Facility information element with an EraseCallLinkageID invoke component containing the callLinkageID parameter.

Selection: The IUT provides the call information retention procedure. PICS: MC 5.

NOTE: Timers T-ACTIVATE, T-DEACTIVATE, T-INTERROGATE are user A timers and so are not included in the present document covering the network side test specification.

5.2.1.2 Network B

NOTE 1: These procedures apply to the interface between network B and user B (non-served user). The subscription option "status request procedures for existing services" (value = supported/not supported) is a user B option. The network should support both options, i.e. be capable of being configured for both options for one particular user interface.

NOTE 2: A number of TPs in this clause refer to "on receiving a CCBS request". This relates to receiving the request from Network A and not to any DSS1 protocol activity at the interface between network B and user B.

NOTE 3: "CCBS Await Status" as defined in EN 300 359-1 [1] clause 8.4 actually refers to three different states. In the present document these are identified as follows:

CCBS Await Status (Activation): waiting for a response from user B to a status request while processing a request for CCBS activation (EN 300 359-1 [1] clause 9.5.2.1);

CCBS Await Status (Pre T-CCBS4): waiting for a response from user B to a status request while processing a request in queue B before starting T-CCBS4 (EN 300 359-1 [1] clause 9.5.4.1);

CCBS Await Status (Post T-CCBS4): waiting for a response from user B to a status request while processing a request in queue B before starting T-CCBS4 (EN 300 359-1 [1] clause 9.5.4.1).

5.2.1.2.1 ExistingServiceNoStatusReq

CCBS_N07_001 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with all B-channels free and the subscription parameter "status request procedures for existing services" is set to "not supported", on receiving a CCBS request related to an existing service, in order to determine whether user B is free, starts timer T-CCBS4, and reserves a B-channel.

NOTE: At least one B-channel needs to be released between the original call and the CCBS request.

CCBS_N07_002 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and all other B-channel(s) free and the subscription parameter "status request procedures for existing services" is set to "not supported", on receiving a CCBS request related to an existing service does not reserve a B-channel.

CCBS_N07_003 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and all other B-channel(s) free when there is an entry in queue B related to an existing service and the subscription parameter "status request procedures for existing services" is set to "not supported", on receipt of a DISCONNECT message with cause #16 "normal call clearing" continues with normal call clearing, starts timer T-CCBS4 and reserves a B-channel.

CCBS_N07_004 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and another call in state N06, when there is an entry in queue B related to an existing service and the subscription parameter "status request procedures for existing services" is set to "not supported", on receipt of a RELEASE COMPLETE message with the call reference of the call in state N06 does not reserve a B-channel.

CCBS_N07_005 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and another in state N07, when there is an entry in queue B related to an existing service and the subscription parameter "status request procedures for existing services" is set to "not supported", on receipt of a DISCONNECT message with cause #17 "user busy" with the call reference of the call in state N07 continues with normal call clearing and does not reserve a B-channel.

CCBS_N07_006 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and another call in state N06, when there is an entry in queue B related to an existing service and the subscription parameter "status request procedures for existing services" is set to "not supported", on the second expiry of T303 does not reserve a B-channel.

5.2.1.2.2 ExistingServiceWithStatusReq

CCBS_N08_001 clause 9.5.4.1

Ensure that the IUT in with all B-channels free and the subscription parameter "status request procedures for existing services" is set to "supported", on queueing a CCBS request related to an existing service, in order to determine whether user B is free, reserves a B-channel and sends a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

CCBS_N08_002 clause 9.5.4.1

Ensure that the IUT with all B-channels free and in the CCBS Await Status (pre T-CCBS4) state, having reserved a B-channel, and the subscription parameter "status request procedures for existing services" is set to "supported", and the service is an existing service, on receipt of a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest return result component indicating "compatibleAndFree", starts timer T-CCBS4.

CCBS_N08_003 clause 9.5.4.1

Ensure that the IUT with all B-channels free and in the CCBS Await Status (pre T-CCBS4) state, having reserved a B-channel, and the subscription parameter "status request procedures for existing services" is set to "supported", and the service is an existing service, on receipt of a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest return result component indicating "compatibleAndBusy", cancels the B-channel reservation.

CCBS_N08_004 clause 9.5.4.1

Ensure that the IUT in N00 and the CCBS Await Status (post T-CCBS4) state, having reserved a B-channel, and timer T-CCBS4 having expired and the subscription parameter "status request procedures for existing services" is set to "supported", and the service is an existing service, on receipt of a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest return result component indicating "compatibleAndFree", continues to reserve the B-channel.

CCBS_N08_005 clause 9.5.4.1

Ensure that the IUT with all B-channels free and in the CCBS Await Status (post T-CCBS4)state, having reserved a B-channel, and timer T-CCBS4 having expired and the subscription parameter "status request procedures for existing services" is set to "supported", and the service is an existing service, on receipt of a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest return result component indicating "compatibleAndBusy", cancels the B-channelreservation.

CCBS_N08_006 clause 9.5.4.2

Ensure that the IUT with all B-channels free and in the CCBS Await Status (pre T-CCBS4) state, having reserved a B-channel, and the subscription parameter "status request procedures for existing services" is set to "supported", and the service is an existing service, on receipt of a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest return result component indicating "incompatible", cancels the B-channel reservation.

CCBS_N08_007 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and all other B-channel(s) free and the subscription parameter "status request procedures for existing services" is set to "supported", on queueing a CCBS request related to an existing service, in order to determine whether user B is free, reserves a B-channel and sends a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

CCBS_N08_008 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and all other B-channel(s) free when there is an entry in queue B related to an existing service and the subscription parameter "status request procedures for existing services" is set to "supported", on receipt of a DISCONNECT message with cause #16 "normal call clearing" continues with normal call clearing, reserves a B-channel and sends a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

CCBS_N08_009 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and another in state N06, when there is an entry in queue B related to an existing service and the subscription parameter "status request procedures for existing services" is set to "supported", on receipt of a RELEASE COMPLETE message with the call reference of the call in state N06 releases the B-channel, reserves a B-channel and sends a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

CCBS_N08_010 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and another in state N07 when there is an entry in queue B related to an existing service and the subscription parameter "status request procedures for existing services" is set to "supported", on receipt of a DISCONNECT message with cause #17 "user busy" with the call reference of the call in state N07 reserves a B-channel and sends a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component

CCBS_N08_011 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and another in state N06, when there is an entry in queue B related to an existing service and the subscription parameter "status request procedures for existing services" is set to "supported", on the second expiry of T303 reserves a B-channel and sends a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

5.2.1.2.3 NotExistingService

CCBS_N09_001 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT in with all B-channels free and the subscription parameter "status request procedures for existing services" is set to "supported", on queueing a CCBS request related to a service that is not an existing service, in order to determine whether user B is free, reserves a B-channel and sends a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

CCBS_N09_002 clause 9.5.4.1

Ensure that the IUT with all B-channels free and in the CCBS Await Status (pre T-CCBS4) state, having reserved a B-channel, and the service is NOT an existing service, on receipt of a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest return result component indicating "compatibleAndFree", starts timer T-CCBS4.

CCBS_N09_003 clause 9.5.4.1

Ensure that the IUT with all B-channels free and in the CCBS Await Status (pre T-CCBS4) state, having reserved a B-channel, and the service is NOT an existing service, on receipt of a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest return result component indicating "compatibleAndBusy", cancels the B-channel reservation.

CCBS_N09_004 clause 9.5.4.1

Ensure that the IUT with all B-channels free and in the CCBS Await Status (post T-CCBS4) state, having reserved a B-channel, and timer T-CCBS4 having expired and the service is NOT an existing service, on receipt of a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest return result component indicating "compatibleAndFree", continues to reserve the B-channel.

CCBS_N09_005 clause 9.5.4.1

Ensure that the IUT with all B-channels free and in the CCBS Await Status (post T-CCBS4) state, having reserved a B-channel, and timer T-CCBS4 having expired and the service is NOT an existing service, on receipt of a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest return result component indicating "compatibleAndBusy", cancels the B-channel reservation,

CCBS_N09_006 clause 9.5.4.2

Ensure that the IUT with all B-channels free and in the CCBS Await Status (pre T-CCBS4) state, having reserved a B-channel, and the service is NOT an existing service, on receipt of a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest return result component indicating "incompatible", cancels the B-channel reservation.

CCBS_N09_007 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and all other B-channel(s) free and the subscription parameter "status request procedures for existing services" is set to "supported", on queueing a CCBS request related to a service that is not an existing service, in order to determine whether user B is free, reserves a B-channel and sends a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

CCBS_N09_008 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and all other B-channel(s) free, when there is an entry in queue B related to a service that is not an existing service and the subscription parameter "status request procedures for existing services" is set to "supported", on receipt of a DISCONNECT message with cause #16 "normal call clearing" continues with normal call clearing, reserves a B-channel and sends a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

CCBS_N09_009 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and another call in state N06, when there is an entry in queue B related to a service that is not an existing service and the subscription parameter "status request procedures for existing services" is set to "supported", on receipt of a RELEASE COMPLETE message with the call reference of the call in state N06 releases the B-channel, reserves a B-channel and sends a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

CCBS_N09_010 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and another call in state N07, when there is an entry in queue B related to a service that is not an existing service and the subscription parameter "status request procedures for existing services" is set to "supported", on receipt of a DISCONNECT message with cause #17 "user busy" with the call reference of the call in state N07, reserves a B-channel and sends a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component

CCBS_N09_011 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and another call in state N06, when there is an entry in queue B related to a service that is not an existing service and the subscription parameter "status request procedures for existing services" is set to "supported", on the second expiry of T303 releases a B-channel and sends a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

CCBS_N09_012 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with all B-channels free and the subscription parameter "status request procedures for existing services" is set to "not supported", on queueing a CCBS request related to a service which is NOT an existing service free in order to determine whether user B is free, reserves a B-channel and sends a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

CCBS_N09_013 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and all other B-channel(s) free and the subscription parameter "status request procedures for existing services" is set to "not supported", on queueing a CCBS request related to a service that is not an existing service, does not reserve a B-channel and does not send a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

CCBS_N09_014 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and all other B-channel(s) free, when there is an entry in queue B related to a service that is not an existing service and the subscription parameter "status request procedures for existing services" is set to " not supported", on receipt of a DISCONNECT message with cause #16 "normal call clearing" continues with normal call clearing, reserves a B-channel and sends a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

CCBS_N09_015 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and another call in state N06, when there is an entry in queue B related to a service that is not an existing service and the subscription parameter "status request procedures for existing services" is set to " not supported", on receipt of a RELEASE COMPLETE message with the call reference of the call in state N06 releases the B-channel, and does not send a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

CCBS_N09_016 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and another call in state N07, when there is an entry in queue B related to a service that is not an existing service and the subscription parameter "status request procedures for existing services" is set to " not supported", on receipt of a DISCONNECT message with cause #17 "user busy" with the call reference of the call in state N07, continues with normal call clearing and does not reserve a B-channel and does not send a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

CCBS_N09_017 clauses 9.5.3.1 and 9.5.4.1

Ensure that the IUT with one call in state N10 and another call in state N06, when there is an entry in queue B related to a service that is not an existing service and the subscription parameter "status request procedures for existing services" is set to " not supported", on the second expiry of T303 does not reserve a B-channel and does not send a FACILITY message using the dummy call reference containing a Facility information element with a StatusRequest invoke component.

5.2.1.3 GFP

CCBS_N10_001 clause 9, [5] clause 8.3.2.2.2

Ensure that the IUT in call state N00 and in the CCBS Activated state receiving a FACILITY message containing a Facility information element with an invalid protocol profile, ignores the message.

CCBS_N10_002 clause 9, [5] clause 8.3.2.2.2

Ensure that the IUT in call state N00 and in the CCBS Activated state receiving FACILITY message without a Facility information element, ignores the message.

CCBS_N10_003 clause 9, [5] clause 8.3.2.2.2

Ensure that the IUT in call state N00 and in the CCBS Activated state receiving a message other than FACILITY with a dummy call reference and this message does not apply to some other application of the dummy call reference, ignores the message.

5.2.2 Network (T)

NOTE: The private network procedures use the bearer independent connection-oriented transport mechanism as well as the bearer related transport mechanism. Different Call References (CRs) are used to differentiate between the two mechanisms. In the following TPs, these are identified by CR followed by a number:

CR1 = normal (bearer related) call reference;

CR2 = call reference used for bearer independent transport mechanism.

The values of CR1 and CR2 may vary from one TP to another, but when both are used in the same TP their values are distinct. CR1 and CR2 could exist at different exchanges.

5.2.2.1 Originating side

5.2.2.1.1 General

CCBS_N11_001 clause 10.1.1.1

Ensure that the IUT in the CCBS Idle state, with CR1 in call state N03, to indicate that a busy destination has been encountered, sends a DISCONNECT message with CR1 and cause #17 or #34, containing a Facility information element with a CCBS-T-Available invoke component and moves to the call state N12.

CCBS_N11_002 clause 10.1.2.1

Ensure that the IUT in the CCBS Idle state, with CR2 in call state N00, on receipt of a REGISTER message with CR2 containing a Facility information element with a CCBS-T-Request invoke component including the retentionSupported parameter set to TRUE, sends a FACILITY message with CR2 containing a Facility information element with a CCBS-T-Request return result component including the parameter retentionSupported set to TRUE and enters the Bearer Independent Transport state (N31) for CR2.

Selection: The IUT supports the CCBS request retention option. PICS: MC 6.

CCBS_N11_003 clause 10.1.2.1

Ensure that the IUT in the CCBS Idle state, with CR2 in call state N00, on receipt of a REGISTER message with CR2 containing a Facility information element with a CCBS-T-Request invoke component including the retentionSupported parameter set to TRUE, sends a FACILITY message with CR2 containing a Facility information element with a CCBS-T-Request return result component including the parameter retentionSupported set to FALSE and enters the Bearer Independent Transport state (N31) for CR2.

Selection: The IUT does NOT support the CCBS request retention option. PICS: NOT MC 6.

CCBS_N11_004 clause 10.1.2.2

Ensure that the IUT in the CCBS Idle state, with CR2 in call state N00, on receipt of REGISTER message with CR2 containing a Facility information element with a (CCBS-related invoke component different from CCBS-T-Request invoke component) CCBS-T-Call invoke component, sends a RELEASE with CR2 and cause #29 and enters the Release Request state (N19).

CCBS_N11_005 clause 10.1.2.2

Ensure that the IUT in the CCBS Idle state, with CR2 in call state N00, on receipt of REGISTER message with CR2 containing a Facility information element with a (CCBS-related invoke component different from CCBS-T-Request invoke component) CCBS-T-Suspend invoke component, sends a RELEASE with CR2 and cause #29 and enters the Release Request state (N19).

CCBS_N11_006 clause 10.1.2.2

Ensure that the IUT in the CCBS Idle state, with CR2 in call state N00, on receipt of REGISTER message with CR2 containing a Facility information element with a (CCBS-related invoke component different from CCBS-T-Request invoke component) CCBS-T-Resume invoke component, sends a RELEASE with CR2 and cause #29 and enters the Release Request state (N19).

CCBS_N11_007 clause 10.1.2.2

Ensure that the IUT in the CCBS Idle state, with CR2 in call state N00, on receipt of REGISTER message with CR2 containing a Facility information element with a (CCBS-related invoke component different from CCBS-T-Request invoke component) CCBS-T-RemoteUserFree invoke component, sends a RELEASE with CR2 and cause #29 and enters the Release Request state (N19).

CCBS_N11_008 clause 10.1.2.2

Ensure that the IUT in the CCBS Idle state, with CR2 in call state N00, on receipt of REGISTER message with CR2 containing a Facility information element with a (CCBS-related invoke component different from CCBS-T-Request invoke component) CCBS-T-Available invoke component, sends a RELEASE with CR2 and cause #29 and enters the Release Request state (N19).

CCBS_N11_009 clause 10.1.2.2

Ensure that the IUT in the CCBS Idle state, with CR2 in call state N00, on receipt of REGISTER message with CR2 containing a Facility information element with a CCBS-T-Request invoke component but the supplementary service CCBS is not subscribed to, sends a FACILITY message with CR2 containing a Facility information element with a CCBS-T-Request return error component indicating "notSubscribed" and then sends a RELEASE message with cause #31 with CR2 to clear the signalling connection and enters state N19 for CR2; or sends a RELEASE message with CR2 and cause #31 containing a Facility information element with a CCBS-T-Request return error component indicating "notSubscribed" and enters state N19 for CR2.

CCBS_N11_010 clause 10.1.2.2

Ensure that the IUT in the CCBS Idle state, with CR2 in call state N00, on receipt of REGISTER message with CR2 containing a Facility information element with a CCBS-T-Request invoke component but the supplementary service CCBS is not available to the destination, sends a FACILITY message with CR2 containing a Facility information element with a CCBS-T-Request return error component indicating "longTermDenial" and then sends a RELEASE message with cause #31 with CR2 to clear the signalling connection and enters state N19 for CR2; or sends a RELEASE message with CR2 and cause #31 containing a Facility information element with a CCBS-T-Request return error component indicating "longTermDenial" and enters state N19 for CR2.

CCBS_N11_011 clause 10.1.2.2

Ensure that the IUT in the CCBS Idle state, with CR2 in call state N00, on receipt of REGISTER message with CR2 containing a Facility information element with a CCBS-T-Request invoke component but the supplementary service CCBS is not available to the destination at this time, sends a FACILITY message with CR2 containing a Facility information element with a CCBS-T-Request return error component indicating "shortTermDenial" and then sends a RELEASE message with cause #31 with CR2 to clear the signalling connection and enters state N19 for CR2; or sends a RELEASE message with CR2 and cause #31 containing a Facility information element with a CCBS-T-Request return error component indicating "shortTermDenial" and enters state N19 for CR2.

CCBS_N11_012 clause 10.1.3.1

Ensure that the IUT in the CCBS Free state, with CR2 in call state N31, to indicate that the destination has become not busy and that the IUT is ready to accept a call, sends a FACILITY message with CR2 containing a Facility information element with a CCBS-T-RemoteUserFree invoke component.

CCBS_N11_013 clause 10.1.3.2

Ensure that the IUT in the CCBS Free state, with CR2 in call state N31, having sent a FACILITY message with CR2 containing a Facility information element with a CCBS-T-RemoteUserFree invoke component, on receipt of a FACILITY message with CR2 containing a Facility information element with a CCBS-T-RemoteUserFree reject component, sends a RELEASE with CR2 and cause #31 and enters state N19 for CR2.

CCBS_N11_014 clause 10.1.4.1, 2nd paragraph

Ensure that the IUT in the CCBS Free state, with CR2 in call state N31, on receipt of a FACILITY message with CR2 containing a Facility information element with a CCBS-T-Suspend invoke component, takes no protocol actions.

CCBS_N11_015 clause 10.1.5.1, 2nd paragraph

Ensure that the IUT in the CCBS Free state, with CR2 in call state N31, on receipt of a FACILITY message with CR2 containing a Facility information element with a CCBS-T-Resume invoke component, takes no protocol actions.

CCBS_N11_016 clause 10.1.6.1, 2nd paragraph

Ensure that the IUT in the CCBS Free state, with CR1 in call state N00 and with CR2 in call state N31, on receipt of a SETUP with CR1 using the call establishment information used in the original call attempt and including a Facility information element with a CCBS-T-Call invoke component, sends a SETUP ACKNOWLEDGE or CALL PROCEEDING with CR1 and moves to the call state N02 or N03.

CCBS_N11_017 clauses 10.1.6.1, [5] 8.3.2.1.3.1

Ensure that the IUT in the CCBS Call Init state, with CR1 in call state N03 and with CR2 in call state N31, having sent an ALERTING or CONNECT message with CR1, to clear the signalling connection, sends a RELEASE with CR2 and enters state N19 for CR2.

CCBS_N11_018 clause 10.1.6.2, 1st paragraph

Ensure that the IUT in the CCBS Init state, with CR1 in call state N03 and with CR2 in call state N31, where the retention option is being used, to indicate that the called user is busy again, sends a DISCONNECT message with CR1 containing a T-CCBS-Available invoke component and moves to call state N12.

Selection: CCBS request retention option supported. PICS: MC 6.

CCBS_N11_019 clause 10.1.6.2, 3rd paragraph

Ensure that the IUT in the CCBS Init state, with CR1 in call state N03 and with CR2 in call state N31, where the retention option is not being used, to indicate that the called user is busy again and to clear the signalling connection, sends a DISCONNECT message with CR1 containing a T-CCBS-Available invoke component to clear the attempted call and a RELEASE message with CR2 to clear the signalling connection and moves to call state N12 for CR1 and call state N19 for CR2.

Selection: CCBS request retention option NOT supported. PICS: NOT MC 6.

CCBS_N11_020 clause 10.1.6.2, 4th paragraph

Ensure that the IUT in the CCBS Init state, with CR1 in call state N03 and with CR2 in call state N31, to indicate that the call failed at the destination side due to any reason other than the user at that side is busy, sends a DISCONNECT message with CR1 to clear the attempted call and a RELEASE message with CR2 to clear the signalling connection and moves to call state N12 for CR1 and call state N19 for CR2.

CCBS_N11_021 clause 10.1.6.2

Ensure that the IUT in the CCBS Init state, with CR1 in call state N01 and with CR2 in call state N31, but the call fails before reaching the destination, sends a DISCONNECT message with CR1 to clear the attempted call and moves to call state N12 for CR1.

CCBS_N11_022 clause 10.1.7.1

Ensure that the IUT in the CCBS Activated state, with CR1 in call state N03 and with CR2 in call state N31, in order to deactivate the CCBS request, sends a RELEASE message with CR2 and with cause #31 and moves to call state N19 for CR2.

5.2.2.1.2 Timers

CCBS_N12_001 clause 10.1.6.2 timer

Ensure that the IUT in the CCBS Free state, with CR2 in call state N31 and if timer T-CCBS6 expires, sends a RELEASE message with CR2 and moves to call state N19 for CR2.

5.2.2.1.3 GFP

CCBS_N13_001 clauses 10.1, [5] 8.3.2.1.1.2

Ensure that the IUT in the CCBS Idle state, on receipt of a REGISTER message with a call reference in use containing a Facility information element with a CCBS-T-Request invoke component, ignores the message and sends a STATUS message with CR2 and with a Cause information element containing the cause value #98 or #101 and remains in the same call state.

CCBS_N13_002 clauses 10.1, [5] 8.3.2.1.1.2

Ensure that the IUT in the CCBS Idle state, with CR2 in call state N00, on receipt of a REGISTER message with CR2 containing a Facility information element with an invalid protocol profile, sends a RELEASE COMPLETE message with CR2 containing cause #100.

CCBS_N13_003 clauses 10.1, [5] 8.3.2.1.1.1, [7] 5.8.3.2 d)

Ensure that the IUT in the CCBS Idle state, with CR2 in call state N00, on receipt of a REGISTER message with CR2, a call reference not recognized as relating to a call and with the call reference flag set to "1", ignores the message.

CCBS_N13_004 clauses 10.1, [5] 8.3.2.1.2.2

Ensure that the IUT in the CCBS Free state, with CR2 in call state N31, on receipt of a message other than FACILITY, RELEASE, RELEASE COMPLETE, STATUS or STATUS ENQUIRY with CR2, ignores the message and sends a STATUS message with CR2 and with a Cause information element containing the cause value #98 or #101 and a call state information element containing the call state value 31.

CCBS_N13_005 clauses 10.1, [5] 8.3.2.1.2.2

Ensure that the IUT in the CCBS Free state, with CR2 in call state N31, on receipt of a FACILITY message with CR2 containing a Facility information element with an invalid protocol profile, ignores the message and sends a STATUS message with CR2 and with a Cause information element containing the cause value #100.

5.2.2.2 Destination side

5.2.2.2.1 General

CCBS_N14_001 clauses 10.2.2.1, [5] 8.3.2.1.1.1

Ensure that the IUT in the CCBS Idle state, with CR2 in call state N00, to setup the signalling connection with the private network and to request the activation of CCBS, sends a REGISTER message with CR2 containing a Facility information element with a CCBS-T-Request invoke component including the Bearer capability information element, destinationAddress, retentionSupported set to TRUE, and if available the High layer compatibility and Low layer compatibility information elements, and moves to call state N31 for CR2.

Selection: CCBS request retention option supported. PICS: MC 6.

CCBS_N14_002 clauses 10.2.2.1, [5] 8.3.2.1.1.1

Ensure that the IUT in the CCBS Idle state, with CR2 in call state N00, to setup the signalling connection with the private network and to request the activation of CCBS, sends a REGISTER message with CR2 containing a Facility information element with a CCBS-T-Request invoke component including the Bearer capability information element, destinationAddress, retentionSupported set to FALSE, and if available the High layer compatibility and Low layer compatibility information elements, and moves to call state N31 for CR2.

Selection: CCBS request retention option NOT supported. PICS: NOT MC 6.

CCBS_N14_003 clause 10.2.2.1

Ensure that the IUT, with CR2 in call state N31, having sent a CCBS-T-Request invoke component, on receipt of a FACILITY message with CR2 containing a Facility information element with a CCBS-T-Request return result component, takes no protocol action.

CCBS_N14_004 clause 10.2.2.2

Ensure that the IUT, with CR2 in call state N31, having sent a CCBS-T-Request invoke component, on receipt of a FACILITY message with CR2 containing a Facility information element with a reject component, sends a RELEASE message with CR2 and cause #31.

CCBS_N14_005 clauses 10.2.3.1 and 10.2.6.1

Ensure that the IUT in the CCBS Activated state, with CR1 in call state N00 and with CR2 in call state N31, on receipt of a FACILITY message with CR2 containing a Facility information element with a CCBS-T-RemoteUserFree invoke component and the IUT does not need to suspend CCBS, sends a SETUP message with CR1 using the call establishment information used in the original call attempt and includes a Facility information element with a CCBS-T-Call invoke component and enters the call state N06 for CR1.

CCBS_N14_006 clauses 10.2.3.1 and 10.2.4.1

Ensure that the IUT in the CCBS Activated state, with CR2 in call state N31, on receipt of a FACILITY message with CR2 containing a Facility information element with a CCBS-T-RemoteUserFree invoke component and the IUT does need to suspend CCBS, sends a FACILITY message with CR2 containing a Facility information element with a CCBS-T-Suspend invoke component.

CCBS_N14_007 clause 10.2.4.2

Ensure that the IUT in the CCBS Free state, with CR2 in call state N31, having sent a FACILITY message with CR2 containing a Facility information element with a CCBS-T-Suspend invoke component, on receipt of a FACILITY message with CR2 containing a Facility information element with a reject component, sends a RELEASE with CR2 and cause #31 and moves to call state N19 for CR2.

CCBS_N14_008 clause 10.2.5.1

Ensure that the IUT in the CCBS Free state, with CR2 in call state N31, having suspended CCBS, to request the resumption of the CCBS request, sends a FACILITY message with CR2 containing a Facility information element with a CCBS-T-Resume invoke component.

CCBS_N14_009 clause 10.2.5.2

Ensure that the IUT in the CCBS Free state, with CR2 in call state N31, having sent a FACILITY message with CR2 containing a Facility information element with a CCBS-T-Resume invoke component, on receipt of a FACILITY message with CR2 containing a Facility information element with a reject component, sends a RELEASE with CR2 and cause #31 and moves to call state N19 for CR2.

CCBS_N14_010 clause 10.2.6.1

Ensure that the IUT in the CCBS Free state, with CR1 in call state N00 and with CR2 in call state N31, to initiate establishment of the CCBS call, sends a SETUP with CR1 and with the Bearer capability of the original call attempt and a Facility information element with a CCBS-T-Call invoke component and moves to call state N06 for CR1.

CCBS_N14_011 clause 10.2.6.2

Ensure that the IUT in the CCBS Free state, with CR1 in call state N01 and with CR2 in call state N31, having sent a SETUP with CR1 and with a CCBS-T-Call invoke component, on receipt of a FACILITY message with CR1 containing a Facility information element containing a reject component, takes no protocol action.

CCBS_N14_012 clause 10.2.6.2

Ensure that the IUT in the CCBS Free state, with CR1 in call state N01 and with CR2 in call state N31, having sent a SETUP with CR1 with a CCBS-T-Call invoke component, on receipt of a RELEASE COMPLETE message with CR1 with cause indicating call failed before reaching destination, sends a RELEASE with CR2 and enters N19 for CR2 and N00 for CR1.

CCBS_N14_013 clause 10.2.7.1

Ensure that the IUT in the CCBS Activated state, with CR2 in call state N31, in order to deactivate the CCBS request, sends a RELEASE message with CR2 and cause #31.

5.2.2.2.2 Timers

CCBS_N15_001 clause 10.2.6.2 timer

Ensure that the IUT in the CCBS Activated state, with CR1 in call state N10 and with CR2 in call state N31, on expiry of T-CCBS5, sends a RELEASE message with CR2 and enters the Release Request state (N19).

5.2.2.2.3 GFP

CCBS_N16_001 clauses 10.2, [5] 8.3.2.1.2.2

Ensure that the IUT in the CCBS Activated state, with CR2 in call state N31, on receipt of a message other than FACILITY, RELEASE, RELEASE COMPLETE, STATUS or STATUS ENQUIRY with CR2, ignores the message and sends a STATUS message with CR2 and with a Cause information element containing the cause value #98 or #101 and a call state information element containing the call state value 31.

CCBS_N16_002 clauses 10.2, [5] 8.3.2.1.2.2

Ensure that the IUT in the CCBS Activated state, with CR2 in call state N31, on receipt of a FACILITY message with CR2 containing a Facility information element with an invalid protocol profile, ignores the message and sends a STATUS message with CR2 and with a Cause information element containing the cause value #100.

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 6;

b) use a TSS which is an appropriate subset of the whole of the TSS specified in clause 5;

c) use the same naming conventions for the test groups and test cases;

d) maintain the relationship specified in clause 6 between the test groups and TPs and the entries in the PICS proforma to be used for test case deselection;

e) comply with ISO/IEC 9646-2 [4].

In the case of a) or b), a subset shall be used only where a particular Abstract Test Method (ATM) makes some TPs untestable. All testable TPs from clause 6 shall be included in a compliant ATS.

7 Requirements for a comprehensive testing service

As a minimum the Remote test method, as specified in ISO/IEC 9646-2 [4], shall be used by any organization claiming to provide a comprehensive testing service for network equipment claiming conformance to EN 300 359-1 [1].

Annex A (informative): Change record

A.1 Changes with respect to EN 300 359-5 V1.3

The following changes have been done:

- All TPs for Network B - S/T reference point have been significantly revised and some new TPs added, as a result in changes in EN 300 359-1 [1].
- A small number of TPs for Network A - S/T reference point in which errors were discovered have been modified; one such TP has been deleted.

A.2 Changes with respect to EN 300 359-5 V1.2

To handle corrections to the ATS.

A.3 Changes with respect to the previous ETS 300 359-5

The following changes have been done:

- conversion to EN layout;
- replacement of references to ETS 300 102 with EN 300 403;
- substitution of non-specific references to basic standards where the intention is to refer to the latest version.

History

Document history		
Edition 1	October 1996	Publication as ETS 300 359-5
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V1.3.6	June 2000	Publication
V1.4.1	February 2001	One-step Approval Procedure OAP 20010608: 2001-02-07 to 2001-06-08
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