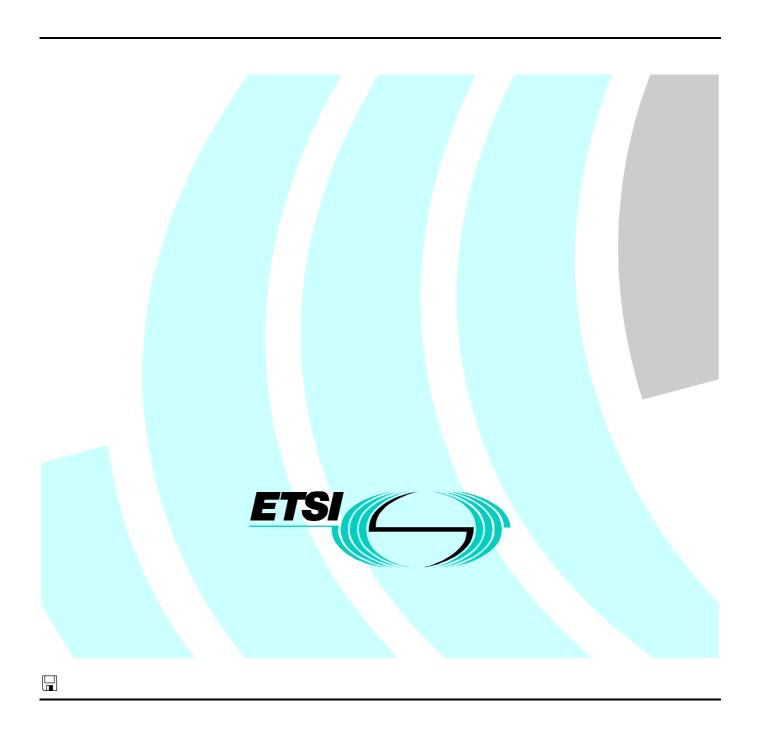Final draft ETSI EN 300 356-36 V3.2.2 (2001-07)

European Standard (Telecommunications series)

Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 3 for the international interface; Part 36: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for supplementary services

ETSI

Reference

REN/SPAN-01037-6

Keywords

ATS, ISDN, ISUP, PIXIT, SS7, testing

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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 Vote phase of the ETSI standards Two-step Approval Procedure.

The present document is part 36 of a multi-part deliverable covering the Integrated Service Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 3 for the international interface, as identified below:

Part 1:   "Basic services [ITU-T Recommendations Q.761 to Q.764 (1999) modified]";

Part 2:   "ISDN supplementary service [ITU-T Recommendation Q.730 (1999) modified]";

Part 3:   "Calling Line Identification Presentation (CLIP) supplementary service [ITU-T Recommendation Q.731, clause 3 (1993) modified]";

Part 4:   "Calling Line Identification Restriction (CLIR) supplementary service [ITU-T Recommendation Q.731, clause 4 (1993) modified]";

Part 5:   "Connected Line Identification Presentation (COLP) supplementary service [ITU-T Recommendation Q.731, clause 5 (1993) modified]";

Part 6:   "Connected Line Identification Restriction (COLR) supplementary service [ITU-T Recommendation Q.731, clause 6 (1993) modified]";

Part 7:   "Terminal Portability (TP) supplementary service [ITU-T Recommendation Q.733, clause 4 (1993) modified]";

Part 8:   "User-to-User Signalling (UUS) supplementary service [ITU-T Recommendation Q.737, clause 1 (1997) modified]";

Part 9:   "Closed User Group (CUG) supplementary service [ITU-T Recommendation Q.735, clause 1 (1993) modified]";

Part 10:   "Subaddressing (SUB) supplementary service [ITU-T Recommendation Q.731, clause 8 (1992) modified]";

Part 11:   "Malicious Call Identification (MCID) supplementary service [ITU-T Recommendation Q.731, clause 7 (1997) modified]";

Part 12:   "Conference Call, add-on (CONF) supplementary service [ITU-T Recommendation Q.734, clause 1 (1993) and implementors guide (1998) modified]";

Part 14:   "Explicit Call Transfer (ECT) supplementary service [ITU-T Recommendation Q.732, clause 7 (1996) and implementors guide (1998) modified]";

Part 15:   "Diversion supplementary service [ITU-T Recommendation Q.732, clauses 2 to 5 (1999) modified]";

Part 16:   "Call Hold (HOLD) supplementary service [ITU-T Recommendation Q.733, clause 2 (1993) modified]";

Part 17:   "Call Waiting (CW) supplementary service [ITU-T Recommendation Q.733, clause 1 (1992) modified]";

Part 18:   "Completion of Calls to Busy Subscriber (CCBS) supplementary service [ITU-T Recommendation Q.733, clause 3 (1997) modified]";

Part 19:   "Three-Party (3PTY) supplementary service [ITU-T Recommendation Q.734, clause 2 (1996) and implementors guide (1998) modified]";

Part 20:   "Completion of Calls on No Reply (CCNR) supplementary service [ITU-T Recommendation Q.733, clause 5 (1999) modified]";

Part 21:   "Anonymous Call Rejection (ACR) supplementary service [ITU-T Recommendation Q.731, clause 4 (1993)]";

Part 31:   "Protocol Implementation Conformance Statement (PICS) proforma specification for basic services";

Part 32:   "Test Suite Structure and Test Purposes (TSS&TP) specification for basic services";

Part 33:   "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for basic services";

Part 34:   "Protocol Implementation Conformance Statement (PICS) proforma specification for supplementary services";

Part 35:   "Test Suite Structure and Test Purposes (TSS&TP) specification for supplementary services";

Part 36:   "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for supplementary services".

NOTE: Parts 13 and 22 to 30 have not been issued.

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

Introduction

The present document contains the conformance test specification for ISUP '97 supplementary services. The present document presents an Abstract Test Suite (ATS), written in Tree And Tabular Combined Notation (TTCN). The main body of the present document presents the requirements regarding the chosen test method, conventions used within the ATS, the test suite structure and the Test Purposes. The annexes present the Protocol Implementation Conformance Statements (PICS), the Protocol Implementation eXtra Information for Testing (PIXIT), Protocol Conformance Test Report (PCTR) and the ATS for ISUP '97 supplementary services, the last one being available on electronic media.

1   Scope

The present document contains the validation (conformance) test specification for ISUP '97 supplementary services defined in ITU-T Recommendation Q.730 [1]. The present document presents an Abstract Test Suite (ATS) for ISUP '97 supplementary services, written in TTCN, see ISO/IEC 9646-5 [27]. The present document applies only to exchanges having implemented the ISUP '97 protocol specification. It is applicable for validation testing of all types of exchanges as defined in the ISUP '97 protocol specification. The present document does not deal with compatibility testing.

The main text part of the present document presents the requirements regarding the chosen test method, conventions used within the ATS, the Test Suite Structure and Test Purposes (TSS&TP) for ISUP'97 supplementary services.

The annexes present the Protocol Implementation Conformance Statements (PICS), the Protocol Implementation eXtra Information for Testing (PIXIT), Protocol Conformance Test Report (PCTR) and the ATS for ISUP '97 supplementary services, the last one being available on electronic media.

Annex A provides the Protocol Implementation Conformance Statement (PICS) proforma for the ISUP'97 supplementary services defined in compliance with the relevant requirements and in accordance with the guidance given in ISO/IEC 9646-7 [28]. This statement, of which capabilities and options of a telecommunication specification have been implemented, is necessary for evaluating the conformance of a particular implementation.

The supplier of an implementation that is claimed to conform to the ISUP'97 supplementary services reference specification ITU-T Recommendation Q.730 [1] is required to complete a copy of the PICS proforma provided in annex A.

Annex B provides the Protocol Implementation eXtra Information for Test (PIXIT) proforma, needed as a preparation for testing.

Annex C provides the Protocol Conformance Test Report (PCTR) proforma, used for evaluating the results of the testing campaign.

Annex D explains how to get hold of the actual ATS, which is delivered in electronic form only.

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]   ITU-T Recommendation Q.730 (1997): "ISDN user part supplementary services".

[2]   ITU-T Recommendation Q.731: "Stage 3 description for number identification supplementary services using Signalling System No. 7".

[3]   ITU-T Recommendation Q.731.3 (1993): "Calling line identification presentation (CLIP)".

[4]   ITU-T Recommendation Q.731.4 (1993): "Calling line identification restriction (CLIR)".

[5]   ITU-T Recommendation Q.731.5 (1993): "Connected line identification presentation (COLP)".

[6]   ITU-T Recommendation Q.731.6 (1993): "Connected line identification restriction (COLR)".

[7]   ITU-T Recommendation Q.731.7 (1997): "Malicious call identification (MCID)".

[8]   ITU-T Recommendation Q.731.8 (1992): "Sub-addressing (SUB)".

[9]   ITU-T Recommendation Q.732: "Stage 3 description for call offering supplementary services using Signalling System No. 7".

[10]   ITU-T Recommendation Q.732.7 (1997): "Explicit Call Transfer".

[11]   ITU-T Recommendation Q.733.2 (1993): "Call hold (HOLD)".

[12]   ITU-T Recommendation Q.733.3 (1997): "Completion of calls to busy subscriber (CCBS)".

[13]   ITU-T Recommendation Q.733.4 (1993): "Terminal portability (TP)".

[14]   ITU-T Recommendation Q.733.5 (1999): "Completion of calls on no reply".

[15]   ITU-T Recommendation Q.734.1 (1993): "Conference calling".

[16]   ITU-T Recommendation Q.734.2 (1996): "Three-party service".

[17]   ITU-T Recommendation Q.735.1(1993): "Closed user group (CUG)".

[18]   ITU-T Recommendation Q.737.1 (1997): "User-to-user signalling (UUS)".

[19]   ITU-T Recommendation Q.761 (1997): "Signalling System No. 7 - ISDN User Part functional description".

[20]   ITU-T Recommendation Q.762 (1997): "Signalling System No. 7 - ISDN User Part general functions of messages and signals".

[21]   ITU-T Recommendation Q.763 (1997): "Signalling System No. 7 - ISDN User Part formats and codes".

[22]   ITU-T Recommendation Q.764 (1997): "Signalling System No. 7 - ISDN User Part signalling procedures".

[23]   ITU-T Recommendation Q.785.2: "ISUP'97 supplementary services – Test suite structure and test purposes (TSS & TP)".

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

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

[26]   ISO/IEC 9646-3 (1993): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".

[27]   ISO/IEC 9646-5 (1996): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 5: Requirements on test laboratories and clients for the conformance assessment process".

[28]   ISO/IEC 9646-7 (1995): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

[29]   ITU-T Recommendation Q.788 (1996): "User-network-interface to user-network-interface compatibility test specifications for ISDN, non-ISDN and undetermined accesses interworking over international ISUP".

[30]   ITU-T Recommendation E.164 (1997): "The international public telecommunication numbering plan".

[31]   ITU-T Recommendation Q.701: "Functional description of the message transfer part (MTP) of Signalling System No. 7".

[32]   ITU-T Recommendation Q.707: "Testing and maintenance".

[33]   ITU-T Recommendation Q.733: "Stage 3 description for call completion supplementary services using Signalling System No. 7".

[34]   ITU-T Recommendation Q.737: "Stage 3 description for additional information transfer supplementary services using Signalling System No. 7".

[35]   ITU-T Recommendation Q.735: "Stage 3 description for community of interest supplementary services using Signalling System No. 7".

[36]   ITU-T Recommendation Q.734: "Stage 3 description for multiparty supplementary services using Signalling System No. 7".

[37]   ITU-T Recommendation Q.732: "Stage 3 description for call offering supplementary services using Signalling System No. 7".

3   Definitions and abbreviations

3.1   Definitions

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

- terms defined in ISDN User Part (ISUP) reference specification ITU-T Recommendation Q.730 [1];

- terms defined in ISO/IEC 9646-1 [24], ISO/IEC 9646-3 [26] and in ISO/IEC 9646-7 [28].

In particular, the following terms apply:

Abstract Test Case (ATC): complete and independent specification of the actions required to achieve a specific Test Purpose, defined at the level of abstraction of a particular Abstract Test Method, starting in a stable testing state and ending in a stable testing state (see ISO/IEC 9646-2, clause 3.3.3)

Abstract Test Method (ATM): description of how an IUT is to be tested, given at an appropriate level of abstraction to make the description independent of any particular realization of a Means of Testing, but with enough detail to enable abstract test cases to be specified for this method (see ISO/IEC 9646-2, clause 3.3.5)

Abstract Test Suite (ATS): test suite composed of abstract test cases (see ISO/IEC 9646-2, clause 3.3.6)

Implementation Under Test (IUT): implementation of one or more OSI protocols in an adjacent user/provider relationship, being part of a real open system which is to be studied by testing (see ISO/IEC 9646-2, clause 3.3.43)

ISDN number: number conforming to the numbering and structure specified in ITU-T Recommendation E.164

Means of Testing (MOT): combination of equipment and procedures that can perform the derivation, selection, parameterization and execution of test cases, in conformance with a reference standardized ATS, and can produce a conformance log (see ISO/IEC 9646-2, clause 3.3.54)

PICS proforma: document, in the form of a questionnaire, which when completed for an implementation or system becomes the PICS

PIXIT proforma: document, in the form of a questionnaire, which when completed for the IUT becomes the PIXIT

point of control and observation: point within a testing environment where the occurrence of test events is to be controlled and observed, as defined in an Abstract Test Method (see ISO/IEC 9646-2, clause 3.3.64)

pre-test condition: setting or state in the IUT which cannot be achieved by providing stimulus from the test environment

Protocol Implementation Conformance Statement (PICS): statement made by the supplier of a protocol claimed to conform to a given specification, stating which capabilities have been implemented (see ISO/IEC 9646-2, clauses 3.3.39 and 3.3.80)

Protocol Implementation eXtra Information for Testing (PIXIT): statement made by a supplier or implementor of an IUT (protocol) which contains or references all of the information related to the IUT and its testing environment, which will enable the test laboratory to run an appropriate test suite against the IUT (see ISO/IEC 9646-2, clauses 3.3.41 and 3.3.81)

System Under Test (SUT): real open system in which the IUT resides (see ISO/IEC 9646-2, clause 3.3.103)

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

3.2   Abbreviations

The ISUP message acronyms can be found in table 2 of ITU-T Recommendation Q.762 [20].

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

3PTY	Three Party service
addCgPN	additional Calling Party Number
addConNb	additional Connected Number
AdSg	Address Signals
APRI	Address Presentation Restricted Indicator
ASE	Application Service Entity
ASP	Abstract Service Primitive
ATC	Abstract Test Case
ATM	Abstract Test Method
ATP	Access Transport Parameter
ATS	Abstract Test Suite
BCI	Backward Call Indicators
CC	Country Code
CCBS	Completion of Calls to Busy Subscriber
CCBSpar	CCBS parameter
CD	Call Deflection
CDInf	Call Diversion Information
CDIV	Call DIVersion
CDmo	Call Diversion may occur
CdPSI	Called Party's Status Indicator
CFB	Call Forwarding Busy
CFNR	Call Forwarding No Reply
CFU	Call Forwarding Unconditional
CgPN	Calling Party Number
CHInf	Call History Information
CIC	Circuit Identification Code
CLI	Calling Line Identity
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
CntrlE	Controlling Exchange
COL	Connected Line Identity
COLP	Connected Line Identification Presentation
COLR	Connected Line Identification Restriction
CONF	Conference call, add-on
ConNb	Connected Number
CTNb	Call Transfer Number
CTRef	Call Transfer Reference
CUG	Closed User Group
CUGIC	CUG Interlock Code
CW	Call Waiting
DDI	Direct Dialling-In
DLE	Destination Local Exchange
DSS1	Digital Subscriber System No. 1
ECT	Explicit Call Transfer
FCI	Forward Call Indicators
GenNb	Generic Number
GenNot	Generic Notification
HOLD	Call Hold
IA	Incoming Access
ICB	Incoming Calls Barred

ICS	Implementation Conformance Statement
IncIE	Incoming International Exchange
IntermE	Intermediate Exchange
IPI	ISUP Preference Indicator
ISDN	Integrated Services Digital Network
ISUP	ISDN User Part
ITE	International Transit Exchange
IUT	Implementation Under Test
IWorkE	Interworking Exchange
LAPD	Link Access Protocol for the D-channel
LOPInd	LOop Prevention Indicators
LT	Lower Tester
MCID	Malicious Call Identification
MOT	Means Of Testing
MSN	Multiple Subscriber Number
MTC	Main Test Component
MTP	Message Transfer Part
NNI	Network-Network Interface
NoInd	No Indication
NSO	Notification Subscription Option
NTE	National Transit Exchange
OA	Outgoing Access
OBCI	Optional Backward Call Indicators
OFCI	Optional Forward Call Indicators
OriCdNb	Original Called Number
PCO	Point of Control and Observation
PCTR	Protocol Conformance Test Report
PDC	Propagation Delay Counter
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
PSTN	Public Switched Telephone Network
OLE	Originating Local Exchange
OutIE	Outgoing International Exchange
RgInd	Redirecting Indicator
RgNb	Redirecting Number
RnCnt	Redirection Counter
RnInf	Redirection Information
RnNb	Redirection Number
RnNbRes	Redirection Number Restriction
RnReas	Redirection Reason
SCCP	Signalling Connection Control Part
ScrI	Screening Indicator
SCS	System Conformance Statement
ServAct	Service Activation
SP	Signalling Point
SUB	Sub-addressing
SUT	System Under Test
TCAP	Transaction Capabilities Application Part
TCP	Test Coordination Procedures
TP	Terminal Portability
TP	Test Purpose (context dependent)
TSS	Test Suite Structure
TSS&TP	Test Suite Structure and Test Purposes
TTCN	Tree and Tabular Combined Notation
UNI	User-Network interface
USI	User Service Information
USIp	User Service Information prime
UUInd	User-to-User Indicators
UUInf	User-to-User Information
UUS	User-to-User Signalling
UUS1	User-to-User Signalling service 1

UUS2   User-to-User Signalling service 2
UUS3   User-to-User Signalling service 3

4   Void

5   Implementation under test and test methods

5.1   Identification of the system and implementation under test

The System Under Test (SUT) is an exchange. The Implementation Under Test (IUT) is the ISUP '97 implementation in this exchange, mainly the part responsible for the supplementary services functionality, as shown in figure 1.

ISUP   - ISDN User Part
IUT   - Implementation Under Test
SUT   - System Under Test

Figure 1

The ISUP signalling protocol can be observed on the SS No.7 link on the Network-Network Interface (NNI). The effects of signalling procedures of the ISDN User Part can be observed on the circuits controlled by the ISUP on the NNI.

The ISUP implementation will in some exchanges have to interwork with the Access signalling system on the User-Network Interface (UNI) and involve call handling in order to establish end-to-end connections.

From the ISUP reference standard several types of exchanges (or roles) can be identified as presented in figure 2.

OLE - Original Local Exchange
NTE - National Transit Exchange
OutIE - Outgoing International Exchange

ITE - International Transit Exchange
IncIE - Incoming International Exchange
DLE - Destination Local Exchange

Figure 2: Roles of exchanges

The exchanges can be divided in two main groups according to their functionality: local exchanges, where calls originate and terminate, and intermediate exchanges, with transit functionality. Local exchanges are national, i.e. belong to a national network. Intermediate exchanges are national or international. The international intermediate exchanges which permit access to the international network are the gateway exchanges (incoming and outgoing), also called ISCs - international switching centers. A particularity for some supplementary services, e.g. call diversion services, is that a local exchange is not only originator/terminator of the call but also mediator between two far-end local exchanges.

The roles of the exchanges are summarized in table 1.

Table 1: Roles of exchanges

	Local Exchange	Intermediate Exchange	
		National	International
Originating Local Exchange	OLE		
Transit Exchange		NTE	ITE
Incoming/Gateway Exchange			IncIE
Outgoing/Gateway Exchange			OutIE
Destination Local Exchange	DLE		

5.2   ATM and testing configuration for ISUP '97

The Abstract Test Method (ATM) chosen for the ISUP '97 supplementary services testing specification is the distributed multi-party test method. The ATM is defined at an appropriate level of abstraction so that the test cases may be specified appropriately, without adding restrictions to the implementation under test. The testing architectures are described in the following clauses.

The ATS is written in concurrent TTCN.

5.2.1   Intermediate exchanges

The configuration proposed for testing intermediate exchanges is shown in figure 3. In order to test the protocol and functionality of transit and gateway exchanges one needs to consider the incoming and outgoing side of the SUT.

IUT - Implementation Under Test   LAB - PCO for signalling link AB
LT - Lower Tester   CAB - PCO for AB circuits
PCO - Point of Control and Observation   LAC - PCO for signalling link AC
SP - Signalling Point   CAC - PCO for AC circuits
TCP - Test Coordination Procedures

Figure 3: ISUP test method for intermediate exchanges

The IUT is observed and controlled from two signalling links with ISUP associated circuits. The Points of Control and Observation (PCO) are labelled LAB and CAB on one side, and LAC and CAC on the other.

The LAB and LAC PCOs are used by the Lower Testers (LT) for controlling the ISUP signalling link, whereas the CAB and CAC PCOs are used by the lower testers for observing circuit related events, such as connectivity, echo control check, alerting tone, etc.

The ISUP PDUs to be sent and observed on the LAB PCO side allow for PDU constraints to be specified and coded down to the bit-level.

The underlying network service provider is the Message Transfer Part (MTP) protocol as specified in the ITU-T Recommendations Q.701 [31] and Q.707 [32].

Figure 4 shows the actual used configuration for intermediate exchanges, with a Main Testing Component (MTC), responsible for the A-B interface and a slave Parallel Testing Component (PTC), responsible for the C-A interface.

The Test Coordination Procedures (TCP) allow for communication between the testers. The test components are mostly implicitly coordinated (asynchronously); the TCPs are only used when it is necessary to obtain the verdict from the parallel test component.

IUT - Implementation Under Test	LAB - PCO for signalling link AB
MTC - Main Test Component	CAB - Circuit PCO on AB interface
PCO - Point of Control and Observation	LAC - PCO for signalling link AC
PTC - Parallel Test Component	CAC - Circuit PCO on AC interface
SP - Signalling Point	TCP - Test Coordination Procedures

Fig 4/Q.785.2

Figure 4: ISUP test configuration for intermediate exchanges

5.2.2   Local exchanges

When testing a local exchange as specified in the reference standard, it is difficult, if not impossible, to observe only ISUP PDUs, if functionality such as connectivity, tones and announcements etc. associated with protocol events is to be considered and used to assign verdicts. The reference standard often refers to actions or events initiated by or to be observed by the calling or called user.

A Point of Control of Observation (PCO) from ISUP (IUT) to the access side is needed, e.g. for stimulating the local exchange to originate a call (send an IAM). Another PCO is needed to check connectivity or generated tones by the local exchange.

There is no exposed interface from ISUP (the IUT) towards the access side. For practical testing purposes the natural choice is the access interface. It is therefore reasonable to make use of the access interface (e.g. the user access interface DSS1) as a PCO and to use existing naming conventions for the Abstract Service Primitives (ASPs) to be used on this PCO.

Figure 5 presents a multi-party testing configuration for local exchanges. In this figure each tester has a single PCO. The PCO for the access uses the underlying access service provider (e.g. LAPD, in case of DSS1) for observing access events and stimulating the ISUP via the access. The ISUP implementation (IUT) cannot be tested without involving the User-Network Interface (UNI).

IUT - Implementation Under Test
LT - Lower Tester
PCO - Point of Control and Observation
TCP - Test Coordination Procedures
SP - Signalling Point
USI -User-Network Interface

LAB - PCO for signalling link AB
CAB - PCO for AB circuits
ACH - Access signalling PCO (D-channel)
APH - Access physical circuit PCO (B-channel)

Fig 5/Q.785.2

Figure 5: ISUP test method for originating/destination exchanges

On the right side there are two PCOs as in the test configuration presented in the previous clause. The LAB PCO is used by the LT controlling the ISUP signalling link, whereas the CAB PCO is used by another LT controlling the traffic channels (for observing circuit related events, such as connectivity, alerting tone, etc.).

The ISUP PDUs to be sent and observed on the LAB PCO side allow for PDU constraints to be specified and coded down to the bit-level.

On the access side there are two PCOs and two LTs similar to the ones on network side. The ACH PCO is used to observe and control the Call Handling events, whereas the APH is used to control and observe physical aspects (e.g. tones and announcements).

The access PDUs to be sent and observed on the ACH PCO are chosen at an appropriate level of abstraction. For the access ASPs DSS1-like primitive names have been used, whereas access PDU constraints have not been coded to the bit level. The access aspects cannot be left out for local exchanges, widening in this respect to some extent the scope of the ISUP testing.

Figure 6 shows the actual used configuration for local exchanges, with a Master Testing Component (MTC), responsible for the A-B interface and a slave Parallel Testing Component (PTC), responsible for the UNI access interface. The maintenance PCO is integrated in the MTC, for simplifying reasons.

IUT - Implementation Under Test
MTC - Main Test Component
PCO - Point of Control and Observation
PTC - Parallel Test Component
SP - Signalling Point
UNI - User-Network Interface

LAB - PCO for signalling link AB
CAB - Circuit PCO on AB interface
ACH - Access call handling PCO (D-channel)
APH - Access physical circuit PCO (B-channel)
TCP - Test Coordination Procedures

Fig 6/Q.785.2

Figure 6: ISUP test configuration for local exchanges

There are test cases for local exchanges for some supplementary services where a mixed configuration is used. This configuration is presented in figure 7 of ITU-T Recommendation Q.785.2 [23] and it may be deduced from the configurations presented in figures 4 and 6.

IUT - Implementation Under Test
MTC - Main Test Component
PCO - Point of Control and Observation
PTC - Parallel Test Component
SP - Signalling Point
UNI - User-Network Interface

LAB - PCO for signalling link AB
CAB - Circuit PCO on AB interface
LAC - PCO for signalling link AC
CAC - Circuit PCO on AC interface
ACH - Access call handling PCO (D-channel)
APH - Access physical circuit PCO (B-channel)
TCP - Test Coordination Procedures

Fig 7/Q.785.2

Figure 7: ISUP mixed test configuration for local exchanges

In this configuration the main test component located on the right side supervises two parallel test components: one ISUP PTC and one access PTC. The local exchange in this case is the exchange serving the user who activated the supplementary service.

5.2.3   Master-slave aspects in the test configuration

Figures 4, 6 and 7 show the logical test components of the adopted test configuration. The main test component is located on the right side of the IUT, whereas on the left side there are different parallel test components: ISUP (see figure 4), access (see figure 6) or both (see figure 7).

The ATS is written so that the appropriate configuration is chosen - depending on the exchange's *role* to be tested.

The right side main test component may be international or national ISUP and is configurable so that any two of these may be run - based on the answers given to PIXIT questions.

The left side parallel test component may be of any kind: it may be international or national ISUP, an access signalling system or a non-ISUP user part. At test execution exactly one of these configurations will be chosen - based on the information provided in the PICS and PIXIT.

For the gateway exchanges it is assumed by default that the call is set up from the left PTC to the right MTC. So for outgoing international exchange the national network is located on the left side and the international network on the right side. For incoming international exchanges the international network is located on the left side and the national network on the right side.

The message flow in the test cases is designed in such a way that the verdict is assigned based on observing the behaviour on the right side. The left side will in this case mainly act as a slave stimulus/acceptor. There are, however, test cases where the expected behaviour of both sides is needed to assign the verdict.

6   Test Suite Structure (TSS)

Figure 8: Test suite structure

Test Suite Structure (TSS) naming conventions are:

CLIP	Calling Line Identification Presentation;
CLIR	Calling Line Identification Restriction;
COLP	COnnected Line Identification Presentation;
COLR	COnnected Line Identification Restriction;
TP	Terminal Portability;
NO_TP	Terminal Portability not supported;
UUS	User-to-User Signalling;
UUS1_I	User-to-User Signalling service 1 implicit;
NO_UUS1_I	User-to-User Signalling service 1 implicit not supported;
UUS1_E	User-to-User Signalling service 1 explicit;

NO_UUS1_E   User-to-User Signalling service 1 explicit not supported;

UUS2   User-to-User Signalling service 2;

NO_UUS2   User-to-User Signalling service 2 not supported;

UUS3   User-to-User Signalling service 3;

NO_UUS3   User-to-User Signalling service 3 not supported;

CUG   Closed User Group;

NO_CUG   Closed User Group not supported;

SUB   Sub-addressing;

MCID   Malicious Call Identification;

NO_MCID   Malicious Call Identification not supported;

CONF   CONFerence Call, add-on;

ECT   Explicit Call Transfer;

CDIV   Call Diversion Services;

CFB   Call Forwarding Busy;

CFNR   Call Forwarding No Reply;

CFU   Call Forwarding Unconditional;

CD   Call Deflection;

HOLD   Call HOLD;

CW   Call Waiting;

CCBS   Completion of Calls to Busy Subscriber;

CCBS_ISUP   CCBS - ISUP protocol;

CCBS_ASE   CCBS - Application Service Element;

THREE_PTY   Three Party service;

V   Valid behaviour stimulus;

I   Inopportune stimulus.

7   Test Purposes (TP)

7.1   Introduction

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

7.2   Test Purpose (TP) naming convention

Test Purposes are numbered ascending within each group. Groups are organized according to the TSS down to the last but one level. The classification in the V/I groups is done by the inclusion of V or I in the test case name. Additional qualifiers, in form of lower case letters, are added to identify variants within one generic test case, see table 2.

Table 2: TP Identifier naming convention scheme

Identifier:		**ISS_{<TC>}_<group>_<N>_<n>_{<n>}_{<a>}**
ISS	**=**	**ISUP '97 Supplementary Services**
{<TC>}	= TC:	Designation used for ASE test cases (e.g. CCBS): Transaction Capabilities
<group>	=	One character representing the test group: V: Valid stimulus I: Inopportune stimulus
<N>	=	Sequence number for supplementary services according to the test suite structure
<n>	=	Sequence number used within the group
{<n>}	=	Optional additional number used (e.g. for UUS)
{<a>}	=	Optional lower-case character distinguishing tests with same reference number

7.2.1   Source of Test Purpose definition

The Test Purposes cover validation testing aspects and were developed within ETSI.

7.2.2   Test Purpose structure

The Test Purpose structure overlaps with the Test Suite Structure (TSS).

Test Purposes that test normal behaviour have been grouped in the **V** - valid behaviour group.

Test Purposes that test the IUT behaviour in situations that are not normal operation have been grouped in the **I** - Inopportune stimulus group.

Test Purposes for the Application Service Entity (ASE) defined for some supplementary services (e.g. CCBS) have been marked with the **TC** designation - Transaction capabilities.

7.3   Test Purposes for the Supplementary Services

All of the following Test Purposes belong to the main group ISUP_97_Suppl_Services. Each Test Purpose is presented in a separate table. The first row of the table contains the following items:

TSS: Identifier in the Test Suite Structure (test group/subgroup identifier).

TP: Identifier of the Test Purpose.

ISUP '97 reference: The reference to the requirement in the ISUP standard ITU-T Recommendation Q.730 [1], which led to the Test Purpose.

Selection expression: Selection criterion for the Test Purpose taking into account the exchange's role and the answers to the specified PICS questions. If the PICS questions refer to features of the Basic call control procedures (see ITU-T Recommendation Q.788 [29]) they are preceded by the identifier "BCall". All other PICS questions refer to supplementary services specific features (see annex A/ITU-T Recommendation Q.785.2 [23]). If there is no selection expression specified, the TP is valid for all roles of exchanges.

ITU-T Recommendation Q.788 [29] reference:
                                    If there is a Test Purpose defined in the ITU-T Recommendation Q.788 [29] which covers the expected behaviour of the below defined Test Purpose, then the reference to that test is given here. Because the Test Purposes defined in ITU-T Recommendation Q.788 [29] describe UNI (User-Network Interface) to UNI end-to-end tests it is possible that one single ITU-T Recommendation Q.788 [29] test is referenced by several Test Purposes in this test specification. Besides that, some defined Test Purposes do not have any reference to ITU-T Recommendation Q.788 [29] and therefore the word "None" is used in the ITU-T Recommendation Q.788 [29] reference box.

The next row defines the Test Purpose itself, each having a *title* in *italics* and a text body.

The ISUP **messages** and **parameter** names are highlighted **bold** to ease the readability.

In order to check the specified behaviour for some Test Purposes, a special prerequisite test condition has to be fulfilled. If such a condition is needed, it is presented after the Test Purpose under the heading "Pre-test conditions".

For each Test Purpose the essential part of the message sequence chart is presented. If there are several scenarios of message sequence charts implied by the Test Purpose, the variants are presented distinguishing the different cases. These message sequence charts are presented using a non-proportional font for the proper alignment of the arrows in the diagram. Inside the message sequence charts comments are included for clarification purposes.

Additional information of interest while executing/implementing the test cases is presented below a continuous line after the message sequence charts.

7.3.1 Calling Line Identification Presentation (CLIP)

TSS CLIP/	TP ISS_V_1_1	ISUP '97 reference 3.5.2.1.1, table 3.1/ITU-T Recommendation Q.731 [2]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference 2.1.1

Test Purpose
Calling party number (network provided).
To verify that the IUT can successfully originate a call having a **calling party number** with the screening indicator set to "network provided" and the presentation restricted indicator set to "presentation allowed".
<pre>access   SPA   SPB
 	
 ------setup-----> -------IAM------>
 	
  :
 	
_____</pre>
1. Set up a call from the access without calling party number or invalid calling party number (not accepted by the network).				

TSS CLIP/	TP ISS_V_1_2	ISUP '97 reference 3.5.2.1.1, table 3.1/ITU-T Recommendation Q.731 [2]	Selection expression OLE AND PICS A.3/8 (SUB)	ITU-T Recommendation Q.788 [29] reference 2.1.2

Test Purpose
Calling party number (network provided) with calling sub-address.
To verify that the IUT can successfully originate a call having a **calling party number** with the screening indicator set to "network provided" and an **access transport** parameter containing the calling sub-address.
Pre-test conditions.
Arrange the data in the IUT so that the calling party has subscribed to the sub-addressing supplementary service.
<pre>access   SPA   SPB
 	
 ------setup-----> -------IAM------>
 	
  :
 	
_____</pre>
1. Set up a call from the access without calling party number or wrong calling party number (not accepted by the network) and with a calling sub-address.				

TSS CLIP/	TP ISS_V_1_3	ISUP '97 reference 3.5.2.1.1, table 3.1/ITU-T Recommendation Q.731 [2]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Calling party number (user provided, verified and passed).
To verify that the IUT can successfully originate a call having the **calling party number** with the screening indicator set to "user provided, verified and passed".
<pre>access   SPA   SPB
 	
 ------setup-----> -------IAM------>
 	
  :
 	
_____</pre>
1. Set up a call from the access with a correct calling party number (within range).				

TSS CLIP/	TP ISS_V_1_4	ISUP '97 reference 3.5.2.1.1, table 3.1/ITU-T Recommendation Q.731 [2]	Selection expression OLE AND PICS A.3/8 (SUB)	ITU-T Recommendation Q.788 [29] reference 2.1.3

Test Purpose
Calling party number (user provided, verified and passed) with calling sub-address.
To verify that the IUT can successfully originate a call having a **calling party number** with the screening indicator set to "user provided, verified and passed" and an **access transport** parameter containing the calling sub-address.
Pre-test conditions.
Arrange the data in the IUT so that the calling party has subscribed to the sub-addressing supplementary service.

```
access            SPA              SPB

 ------setup----->  -------IAM------>

   :
_____

1. Set up a call from the access with a correct calling party number (within range) and
with a calling sub-address.
```

TSS CLIP/	TP ISS_V_1_5	ISUP '97 reference 3.5.2.1.1, table 3.1/ITU-T Recommendation Q.731 [2]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Calling party number (user provided, not verified).
To verify that the IUT can successfully originate a call having a default **calling party number** with the screening indicator set to "network provided" and a **generic number** containing the additional calling party number with the screening indicator set to "user provided, not verified".
Pre-test conditions.
Arrange the data in the IUT so that there is a special arrangement from the access signalling system regarding an additional calling party number.

```
access            SPA              SPB

 ------setup----->  -------IAM------>

   :
_____

1. Set up a call from the access with a special calling party number.
```

TSS CLIP/	TP ISS_V_1_6	ISUP '97 reference 3.5.2.1.1, table 3.1/ITU-T Recommendation Q.731 [2]	Selection expression OLE AND PICS A.3/8 (SUB)	ITU-T Recommendation Q.788 [29] reference 2.1.4

Test Purpose
Calling party number (user provided, not verified) with calling sub-address.
To verify that the IUT can successfully originate a call having a default **calling party number** with the screening indicator set to "network provided", a **generic number** containing the additional calling party number with the screening indicator set to "user provided, not verified" and an **access transport** parameter containing the calling sub-address.
Pre-test conditions.
Arrange the data in IUT so that there is a special arrangement from the access signalling system regarding an additional calling party number and that the calling party has subscribed to the sub-addressing supplementary service.

```
access          SPA              SPB

 ------setup-----> -------IAM------>

   :

_____

1. Set up a call from the access with a special calling party number and a calling
sub-address.
```

TSS CLIP/	TP ISS_V_1_7	ISUP '97 reference 3.4, 3.5.2.2.1/ITU-T Recommendation Q.731 [2]	Selection expression Transit	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Passing on the calling party number and the generic number.
To verify that a **calling party number** and additional calling party number in the **generic number** can be successfully transferred to the succeeding exchange.

```
Case a)

SPC              SPA              SPB

 -------IAM------> -------IAM------>

   :

_____

1. The PTC will initiate a call set up with the expected parameters.

2. CgPN only.



Case b)

SPC              SPA              SPB

 -------IAM------> -------IAM------>

   :

_____

1. The PTC will initiate a call set up with the expected parameters.

2. CgPN and addCgPN in GenNb.
```

TSS CLIP/	TP ISS_V_1_8	ISUP '97 reference 3.5.2.3.1/ITU-T Recommendation Q.731 [2]	Selection expression OutIE AND PICS A.4/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Discarding the calling party number in case of bilateral agreements.
To verify that the **calling party number** is discarded in case of bilateral agreements, if the address presentation restricted indicator is set to "presentation allowed".
NOTE: This bilateral agreement prohibits the transferral of the calling party number in any case. The test with the address presentation restricted indicator set to "presentation restricted" is a CLIR test.
Pre-test conditions.
Arrange the data in IUT so that the calling party number is discarded.

```
SPC                SPA                SPB

 -------IAM------> -------IAM------>

   :

_____

1. The PTC will initiate a call set up with the expected parameters.
```

TSS CLIP/	TP ISS_V_1_9	ISUP '97 reference 3.5.2.3.1/ITU-T Recommendation Q.731 [2]	Selection expression OutIE AND PICS A.4/2	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Discarding the additional calling party number in case of bilateral agreements.
To verify that the additional calling party number in the **generic number** is discarded in case of bilateral agreements, if the address presentation restricted indicator is set to "presentation allowed".
NOTE: This bilateral agreement prohibits the transferral of the calling party number in any case. The test with the address presentation restricted indicator set to "presentation restricted" is a CLIR test.
Pre-test conditions.
Arrange the data in IUT so that the additional calling party number in the generic number is discarded.

```
SPC                SPA                SPB

 -------IAM------> -------IAM------>

   :

_____

1. The PTC will initiate a call set up with the expected parameters.
```

TSS CLIP/	TP ISS_V_1_10	ISUP '97 reference 3.5.2.3.1/ITU-T Recommendation Q.731 [2]	Selection expression OutIE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Discarding the calling party number, if the address is marked not available.
To verify that the **calling party number** is omitted, if the address presentation restricted indicator is set to "address not available".

```
SPC                SPA                SPB

 -------IAM------> -------IAM------>

   :

_____

1. The PTC will initiate a call set up with the expected parameters.
```

TSS CLIP/	TP ISS_V_1_11	ISUP '97 reference 3.5.2.3.1/ITU-T Recommendation Q.731 [2]	Selection expression OutIE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Discarding the additional calling party number, if no calling party number is received.
To verify that if the **calling party number** is not sent, then an additional calling party number in a **generic number** will be omitted.
```
 SPC                    SPA                    SPB

 -------IAM------> -------IAM------>

   :


_____

1. The PTC will initiate a call set up with the expected parameters.
```

TSS CLIP/	TP ISS_V_1_12	ISUP '97 reference 3.5.2.3.1/ITU-T Recommendation Q.731 [2]	Selection expression OutIE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Converting the calling party number to international format.
To verify that the IUT can convert the **calling party number** into an international number, setting the nature of address indicator to "international number" and can pass on the address presentation restricted indicator and the screening indicator transparently.
```
SPC                    SPA                    SPB

 -------IAM------> -------IAM------>

   :


_____

1. The PTC will initiate a call set up with the expected parameters.
```

TSS CLIP/	TP ISS_V_1_13	ISUP '97 reference 3.5.2.3.1/ITU-T Recommendation Q.731 [2]	Selection expression OutIE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Converting the additional calling party number to international format.
To verify that the IUT can convert the additional calling party number in the **generic number** into an international number, if the numbering plan indicator is "ISDN Telephony", setting the nature of address indicator to "international number" and can pass on the address presentation restricted indicator and the screening indicator transparently.
```
 SPC                    SPA                    SPB

 -------IAM------> -------IAM------>

   :


_____

1. The PTC will initiate a call set up with the expected parameters.
```

TSS CLIP/	TP ISS_I_1_14	ISUP '97 reference 3.5.2.3.2/ITU-T Recommendation Q.731 [2]	Selection expression OutIE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Discarding an incomplete calling party number.
To verify that the **calling party number** is discarded, if it is received with the calling party number incomplete indicator set to "incomplete".

```
SPC                 SPA               SPB

 -------IAM------> -------IAM------>

   :


_____

1. The PTC will initiate a call set up with the expected parameters.
```

TSS CLIP/	TP ISS_V_1_15	ISUP '97 reference 3.5.2.4.1/ITU-T Recommendation Q.731 [2]	Selection expression InclE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Converting the calling party number to national format, if necessary.
To verify that the country code in the address signals of the **calling party number** is removed if it is the network's own country code. The nature of address indicator shall be set to "national (significant) number". The address presentation restricted indicator shall be transferred transparently.

```
SPC International SPA National SPB

 -------IAM------> -------IAM------>

   :


_____

1. The PTC will initiate a call set up with the expected parameters.
```

TSS CLIP/	TP ISS_V_1_16	ISUP '97 reference 3.5.2.4.1/ITU-T Recommendation Q.731 [2]	Selection expression InclE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Converting the additional calling party number to national format, if necessary.
To verify that the country code in the address signals of the **generic number** coded as an "additional calling party number", if the numbering plan indicator is "ISDN Telephony" is removed if it is the network's own country code. The nature of address indicator shall be set to "national (significant) number". The address presentation restricted indicator shall be transferred transparently.

```
SPC                 SPA               SPB

 -------IAM------> -------IAM------>

   :


_____

1. The PTC will initiate a call set up with the expected parameters.
```

ETSI

TSS CLIP/	TP ISS_I_1_17	ISUP '97 reference 3.5.2.4.1/ITU-T Recommendation Q.731 [2]	Selection expression IncIE AND PICS A.4/4	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Adding a prefix to an international calling party number.
To verify that a prefix is added to the **calling party number** and the nature of address indicator is set to "unknown".
NOTE: The coding "unknown" is a national option (@).


```
SPC                SPA                SPB

 -------IAM------> -------IAM------>

   :

  _____

1. The PTC will initiate a call set up with the expected parameters.
```

TSS CLIP/	TP ISS_I_1_18	ISUP '97 reference 3.5.2.4.2/ITU-T Recommendation Q.731 [2]	Selection expression IncIE AND PICS A.4/5	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Handling of address presentation restricted indicator set to "address not available".
To verify that the screening indicator shall be set to "network provided" if the address presentation restricted indicator in **calling party number** is set to "address not available."
NOTE: The coding "address not available" is a national option (@).
```
SPC                SPA                SPB

 -------IAM------> -------IAM------>

   :

  _____

1. The PTC will initiate a call set up with the expected parameters.
```

TSS CLIP/	TP ISS_V_1_19	ISUP '97 reference 3.6.10.1/ITU-T Recommendation Q.731 [2]	Selection expression DLE AND (PICS A.3/12 OR PICS A.3/13 OR PICS A.3/14 OR PICS A.3/15)	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
CLIP - interaction with call diversions.
To verify that a call diverting exchange shall also forward the **calling party number** and the **generic number** containing the additional calling party number.
Pre-test conditions.
Arrange the data in the IUT such that the called user has subscribed to CLIP and has activated a call diversion service (CFB, CFNR, CFU or CD).
```
SPC                SPA                SPB

 -------IAM------> -------IAM------>

   :

  _____

1. The PTC will initiate a call set up with the expected parameters.
```

7.3.2   Calling line identification restriction (CLIR)

TSS CLIR/	TP ISS_V_2_1	ISUP '97 reference 4.5.2.1.1/ITU-T Recommendation Q.731 [2]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference 2.1.5

Test Purpose
Restricted calling party number (network provided).
To verify that the IUT can successfully originate a call having a **calling party number** with the screening indicator set to "network provided" and the address presentation restricted indicator set to "presentation restricted".
Pre-test conditions.
Arrange the data in the IUT so that the calling party has subscribed CLIR.
<pre>access   SPA   SPB
 	
 ------setup-----> -------IAM------>
 	
  :
 	
_____
 	
1. Set up a call from the access without calling party number or wrong calling party
number (not accepted by the network).</pre>				

TSS CLIR/	TP ISS_V_2_2	ISUP '97 reference 4.5.2.1.1/ITU-T Recommendation Q.731 [2]	Selection expression OLE AND PICS A.3/8 (SUB)	ITU-T Recommendation Q.788 [29] reference 2.1.6

Test Purpose
Restricted calling party number (network provided) with calling sub-address.
To verify that the IUT can successfully originate a call having a **calling party number** with the screening indicator set to "network provided", the address presentation restricted indicator set to "presentation restricted" and an **access transport** parameter containing the calling sub-address.
Pre-test conditions.
Arrange the data in the IUT so that the calling party has subscribed to CLIR and SUB.
<pre>access   SPA   SPB
 	
 ------setup-----> -------IAM------>
 	
  :
 	
_____
 	
1. Set up a call from the access without calling party number or wrong calling party
number (not accepted by the network) and with a calling sub-address.</pre>				

TSS CLIR/	TP ISS_V_2_3	ISUP '97 reference 4.5.2.1.1/ITU-T Recommendation Q.731 [2]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Restricted calling party number (user provided, verified and passed).
To verify that the IUT can successfully originate a call having the **calling party number** with the screening indicator set to "user provided, verified and passed" and the address presentation restricted indicator set to "presentation restricted".
Pre-test conditions.
Arrange the data in the IUT so that the calling party has subscribed CLIR.

```
access          SPA             SPB

 ------setup-----> -------IAM------>

   :

_____
1. Set up a call from the access with a correct calling party number (within range).
```

TSS CLIR/	TP ISS_V_2_4	ISUP '97 reference 4.5.2.1.1/ITU-T Recommendation Q.731 [2]	Selection expression OLE AND PICS A.3/8 (SUB)	ITU-T Recommendation Q.788 [29] reference 2.1.7

Test Purpose
Restricted calling party number (user provided, verified and passed) with calling sub-address.
To verify that the IUT can successfully originate a call having a **calling party number** with the screening indicator set to "user provided, verified and passed", the address presentation restricted indicator set to "presentation restricted" and an **access transport** parameter containing the calling sub-address.
Pre-test conditions.
Arrange the data in the IUT so that the calling party has subscribed to CLIR and SUB.

```
access          SPA             SPB

 ------setup-----> -------IAM------>

   :

_____
1. Set up a call from the access with a correct calling party number (within range) and
with a calling sub-address.
```

TSS CLIR/	TP ISS_V_2_5	ISUP '97 reference 4.5.2.1.1/ITU-T Recommendation Q.731 [2]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Restricted calling party number (user provided, not verified).
To verify that the IUT can successfully originate a call having a default **calling party number** with the screening indicator set to "network provided" and a **generic number** containing the additional calling party number with the screening indicator set to "user provided, not verified", both having the address presentation restricted indicator set to "presentation restricted".
Pre-test conditions.
Arrange the data in IUT so that there is a special arrangement from the access signalling system regarding an additional calling party number and that the calling party has subscribed to CLIR.

```
access           SPA              SPB

 ------setup----->  -------IAM------>

   :

_____
```
1. Set up a call from the access with a special calling party number.

TSS CLIR/	TP ISS_V_2_6	ISUP '97 reference 4.5.2.1.1/ITU-T Recommendation Q.731 [2]	Selection expression OLE AND PICS A.3/8 (SUB)	ITU-T Recommendation Q.788 [29] reference 2.1.8

Test Purpose
Restricted calling party number (user provided, not verified) with calling sub-address.
To verify that the IUT can successfully originate a call having a default **calling party number** with the screening indicator set to "network provided", a **generic number** containing the additional calling party number with the screening indicator set to "user provided, not verified", both having the address presentation restricted indicator set to "presentation restricted" and an **access transport** parameter containing the calling sub-address.
Pre-test conditions.
Arrange the data in IUT so that there is a special arrangement from the access signalling system regarding an additional calling party number and that the calling party has subscribed to CLIR and SUB.

```
access           SPA              SPB

 ------setup----->  -------IAM------>

   :

_____
```
1. Set up a call from the access with a special calling party number and a calling sub-address.

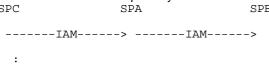| TSS CLIR/	TP ISS_V_2_7	ISUP '97 reference 4.5.2.2.1/ITU-T Recommendation Q.731 [2]	Selection expression Transit	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Conveying the information relating to CLIR.
To verify that the address presentation restricted indicator in the **calling party number** and in the **generic number** are transferred successfully to the succeeding exchange.

```
Case a)

SPC               SPA               SPB

 -------IAM------> -------IAM----->

   :

_____

1. The PTC will initiate a call set up with the expected parameters.

2. CgPN only.

Case b)

SPC               SPA               SPB

 -------IAM------> -------IAM----->

   :

_____

1. The PTC will initiate a call set up with the expected parameters.

2. CgPN and addCgPN in GenNb.
```

TSS CLIR/	TP ISS_V_2_8	ISUP '97 references 3.5.2.3.1, 4.5.2.3.2, 4.6.5/ITU-T Recommendation Q.731 [2]	Selection expression OutIE AND PICS A.5/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Discarding the calling party number if the presentation is restricted.
To verify that the **calling party number** is discarded in case of bilateral agreements, if the address presentation restricted indicator is set to "presentation restricted".
Pre-test conditions
Arrange the data in IUT so that the calling party number is discarded.
```
SPC               SPA               SPB

 -------IAM------> -------IAM----->

   :

_____

1. The PTC will initiate a call set up with the expected parameters.
```

TSS CLIR/	TP ISS_V_2_9	ISUP '97 references 3.5.2.3.1, 4.5.2.3.2, 4.6.5/ITU-T Recommendation Q.731 [2]	Selection expression OutIE AND PICS A.5/2	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Discarding the additional calling party number if the presentation is restricted. To verify that the additional calling party number in the **generic number** is discarded in case of bilateral agreements, if the address presentation restricted indicator is set to "presentation restricted". Pre-test conditions. Arrange the data in IUT so that the additional calling party number is discarded.				

```
SPC                SPA               SPB

 -------IAM------> -------IAM------>

   :

_____

1. The PTC will initiate a call set up with the expected parameters.
```

TSS CLIR/	TP ISS_V_2_10	ISUP '97 reference 4.6.20/ITU-T Recommendation Q.731 [2]	Selection expression DLE AND PICS A.3/9 (MCID)	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Presentation of the address - interaction with MCID. To verify that the information conveyed in an incoming call (especially the **calling party number** and the additional calling party number in the **generic number**) is registered in the network regardless of whether the calling user has activated the CLIR service or not, if the called user has MCID activated. Pre-test conditions. Arrange the data in the IUT such that the called user has activated the MCID supplementary service on a permanent basis.				

```
access          SPA               SPB

 <-----setup---- <-----IAM------

   :

_____

1. Set up a call to the access with CgPN and addCgPN in the GenNb.
```

TSS CLIR/	TP ISS_V_2_11	ISUP '97 reference 4.2.1/ITU-T Recommendation Q.731 [2]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Presentation of the address - called party has override category .
To verify that the **calling party number** and the additional calling party number in the **generic number** are passed to the access regardless of whether the calling user has activated the CLIR service or not if the called user has the override category.
Pre-test conditions.
Arrange the data in the IUT such that the called user has the override category.
 	
`access          SPA             SPB`
 	
` <-----setup---- <-----IAM------`
 	
`  :`
 	
`_____`
 	
`1. Set up a call to the access with CgPN and addCgPN in the GenNb.`				

7.3.3   Connected Line Identification Presentation (COLP)

TSS COLP/	TP ISS_V_3_1	ISUP '97 reference 5.5.2.1.1/ITU-T Recommendation Q.731 [2]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference 2.3.1

Test Purpose
Initiate COLP request.
To verify that the exchange can initiate successfully a call requesting the COLP service in the **optional forward call indicators**.
Pre-test conditions.
Arrange the data in the IUT such that the calling party subscribes to COLP.
 	
`access          SPA             SPB`
 	
` ------setup----> ------IAM------>`
 	
` :`
 	
`_____`
 	
`1. Set up a call from the access with a COLP request.`				

TSS COLP/	TP ISS_V_3_2	ISUP '97 reference 5.5.2.2.1/ITU-T Recommendation Q.731 [2]	Selection expression Transit	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Passing on information relating to COLP.
To verify that the IUT passes on transparently the information related to the COLP supplementary service in the
optional forward call indicators (forward direction) and the **connected number** (backward direction).

```
Case a)

 SPC                   SPA                   SPB

 --------IAM------->  --------IAM------->

 <-------ACM--------  <-------ACM--------

          ... ringing tone ...

 <-------ANM--------  <-------ANM--------

   :

_____
```

1. The PTC will initiate a call set up with the expected parameters.

```
Case b)

 SPC                   SPA                   SPB

 <-------IAM--------  <-------IAM--------

 --------ACM------->  --------ACM------->

          ... ringing tone ...

 --------ANM------->  --------ANM------->

   :

_____
```

1. The PTC will assist a call set up with the expected parameters.

```
Case c)

 SPC                   SPA                   SPB

 <-------IAM--------  <-------IAM--------

 --------CON------->  --------CON------->

   :

_____
```

1. The PTC will assist a call set up with the expected parameters.

TSS COLP/	TP ISS_V_3_3	ISUP '97 reference 5.5.2.3.1/ITU-T Recommendation Q.731 [2]	Selection expression OutIE	ITU-T Recommendation Q.788 [29] reference None
| Test Purpose<br>Converting the connected number to national format, if necessary.<br>To verify that the country code in the address signals of the **connected number** is removed if it is the network's own country code. The nature of address indicator shall be set to "national (significant) number", the address presentation restricted indicator and the screening indicator shall be transferred transparently.<br>`Case a)`<br><br>```
 SPC                SPA                SPB

 --------IAM------->  -------IAM------->

 <-------ACM--------  <-------ACM--------

          ... ringing tone ...

 <-------ANM--------  <-------ANM--------

   :

_____
```<br>1. The PTC will initiate a call set up with the expected parameters.<br><br>2. Provide ConNb to be passed on having AdSg: TSP_Nb_B with own country code.<br><br>`Case b)`<br><br>```
 SPC                SPA                SPB

 --------IAM------->  --------IAM------->

 <-------CON--------  <-------CON--------

   :

_____
```<br>1. The PTC will initiate a call set up with the expected parameters.<br><br>2. Provide ConNb to be passed on having AdSg: TSP_Nb_B with own country code. | | | | |

TSS COLP/	TP ISS_V_3_4	ISUP '97 reference 5.5.2.3.1/ITU-T Recommendation Q.731 [2]	Selection expression OutIE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose				

Test Purpose
Converting the additional connected number to national format, if necessary.
To verify that the country code in the address signals of the **generic number** coded as an "additional connected number", if the numbering plan indicator is "ISDN Telephony" is removed if it is the network's own country code. The nature of address indicator shall be set to "national (significant) number", the address presentation restricted indicator and the screening indicator shall be transferred transparently.

```
Case a)

 SPC                   SPA                   SPB

 --------IAM------>  --------IAM------->

 <-------ACM-------  <-------ACM--------

           ... ringing tone ...

 <-------ANM-------  <-------ANM--------

   :

_____
```

1. The PTC will initiate a call set up with the expected parameters.

2. Provide ConNb: TSP_Nb_B_default and addConNb in GenNb: TSP_GenNb_B to be passed on, both international numbers with the network's own country code.

```
Case b)

 SPC    National  SPA  International  SPB

 --------IAM------>  --------IAM------->

 <-------CON-------  <-------CON--------

   :

_____
```

1. The PTC will initiate a call set up with the expected parameters.

2. Provide ConNb: TSP_Nb_B_default and addConNb in GenNb: TSP_GenNb_B to be passed on, both international numbers with the network's own country code.

TSS COLP/	TP ISS_I_3_5	ISUP '97 reference 5.5.2.3.1/ITU-T Recommendation Q.731 [2]	Selection expression OutIE AND PICS A.6/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Adding a prefix to an international connected number.
To verify that a prefix is added to the **connected number** and the nature of address indicator is set to "unknown".
NOTE: The coding "unknown" is a national option (@).

Case a)

```
 SPC                  SPA                  SPB

 --------IAM------>   -------IAM------>

 <-------ACM-------   <------ACM-------

            ... ringing tone ...

 <-------ANM-------   <------ANM-------

   :

_____
```

1. The PTC will initiate a call set up with the expected parameters.

2. Provide an international ConNb with a different country code than the incoming
network (foreign CC).

Case b)

```
 SPC                  SPA                  SPB

 --------IAM------>   -------IAM------->

 <-------CON-------   <------CON--------

   :

_____
```

1. The PTC will initiate a call set up with the expected parameters.

2. Provide an international ConNb with a different country code than the incoming
network (foreign CC).

TSS COLP/	TP ISS_V_3_6	ISUP '97 reference 5.5.2.4.1/ITU-T Recommendation Q.731 [2]	Selection expression IncIE AND PICS A.6/2	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Discarding the connected number in case of bilateral agreements.
To verify that the **connected number** is discarded in case of bilateral agreements, if the address presentation restricted indicator is set to "presentation allowed".
NOTE: This bilateral agreement prohibits the transferral of the connected number in any case. The test with the address presentation restricted indicator set to "presentation restricted" is a COLR test.
Pre-test conditions.
Arrange the data in the IUT so that the connected number is discarded.
```
Case a)

 SPC              SPA                  SPB

 --------IAM------>   --------IAM------>

 <-------ACM-------   <-------ACM-------

          ... ringing tone ...

 <-------ANM-------   <-------ANM-------

   :

_____

1. The PTC will initiate a call set up with the expected parameters.

2. Provide ConNb to be discarded.

Case b)

 SPC               SPA                 SPB

 --------IAM------>   --------IAM------->

 <-------CON-------   <-------CON--------

   :

_____

1. The PTC will initiate a call set up with the expected parameters.

2. Provide ConNb to be discarded.
```

TSS COLP/	TP ISS_V_3_7	ISUP '97 reference 5.5.2.4.1/ITU-T Recommendation Q.731 [2]	Selection expression InclE AND PICS A.6/3	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Discarding the additional connected number in case of bilateral agreements.

To verify that the additional connected number in the **generic number** is discarded in case of bilateral agreements, if the address presentation restricted indicator is set to "presentation allowed".

NOTE: This bilateral agreement prohibits the transferral of the additional connected number in the generic number in any case. The test with the address presentation restricted indicator set to "presentation restricted" is a COLR test.

Pre-test conditions.

Arrange the data in the IUT so that the additional connected number in the generic number is discarded.

```
Case a)

 SPC                     SPA                     SPB

 --------IAM------>   --------IAM------>

 <-------ACM-------   <------ACM-------

          ... ringing tone ...

 <-------ANM-------   <-------ANM-------

    :

_____

1.  The PTC will initiate a call set up with the expected parameters.

2.  Provide ConNb and addConNb in the GenNb to be discarded.

Case b)

 SPC                     SPA                     SPB

 --------IAM------>   --------IAM------->

 <-------CON-------   <------CON--------

    :

_____

1. The PTC will initiate a call set up with the expected parameters.

2. Provide ConNb and addConNb in the GenNb to be discarded.
```

TSS COLP/	TP ISS_V_3_8	ISUP '97 reference 5.5.2.4.1/ITU-T Recommendation Q.731 [2]	Selection expression IncIE AND PICS A.6/4	ITU-T Recommendation Q.788 [29] reference 2.3.9
Test Purpose Resetting the address signals of the connected number, if they are not to be sent. To verify that for a **connected number** which is not to be released to the originating network the setting of the address presentation restricted indicator can be changed from "presentation allowed" to "address not available", and that the address signals are reset.				

```
Case a)

 SPC                  SPA                 SPB

 --------IAM------>   -------IAM------>

 <-------ACM-------   <-------ACM-------

           ... ringing tone ...

 <-------ANM-------   <-------ANM-------

   :

_____

1. The PTC will initiate a call set up with the expected parameters.

2. Provide ConNb to be reset ("address not available").

Case b)

 SPC                  SPA                 SPB

 --------IAM------>   --------IAM------->

 <-------CON-------   <-------CON--------

   :

_____

1. The PTC will initiate a call set up with the expected parameters.

2. Provide ConNb to be reset ("address not available").
```

TSS COLP/	TP ISS_V_3_9	ISUP '97 reference 5.5.2.4.1/ITU-T Recommendation Q.731 [2]	Selection expression IncIE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Converting the connected number to international format.
To verify that the exchange can convert the **connected number** into an international number, setting the nature of address indicator to "international number" and can pass on the address presentation restricted indicator and the screening indicator transparently.
<pre>Case a)
 	
 SPC   SPA   SPB
 	
 --------IAM------>   -------IAM------>
 	
 <-------ACM-------   <-------ACM-------
 	
         ... ringing tone ...
 	
 <-------ANM-------   <-------ANM-------
 	
   :
_____
 	
1. The PTC will initiate a call set up with the expected parameters.
 	
2. Provide national (significant) ConNb.
 	
Case b)
 	
 SPC   SPA   SPB
 	
 --------IAM------>   --------IAM------->
 	
 <-------CON-------   <-------CON--------
 	
   :
_____
 	
1. The PTC will initiate a call set up with the expected parameters.
 	
2. Provide national (significant) ConNb.</pre>				

TSS COLP/	TP ISS_I_3_10	ISUP '97 reference 5.5.2.5.1/ITU-T Recommendation Q.731 [2]	Selection expression	ITU-T Recommendation Q.788 [29] reference 2.3.8

Test Purpose
Handling unrequested COL.
To verify that the call can be successfully set up if the IUT receives an unsolicited COL.
Case a)
 	
`access            SPA              SPB`
 	
`-------setup-------> --------IAM------->`
 	
`<------alert-------- <-------ACM--------`
 	
`        ... ringing tone ...`
 	
`<------connect------ <-------ANM--------`
 	
`  :`
 	
_____
1. Set up a call from the access without a COLP request.
2. No COL request is issued.
3. Verdict is "pass" if the call is correctly set up.
Case b)
 	
`access            SPA              SPB`
 	
`--------setup------>   --------IAM------->`
 	
`<------connect------   <-------CON--------`
 	
`  :`
 	
_____
1. Set up a call from the access without a COLP request.
2. No COL request is issued.
3. Verdict is "pass" if the call is correctly set up.
Case c)
 	
`SPC              SPA              SPB`
 	
`<-------IAM--------  <-------IAM--------`
 	
`--------ACM------->  --------ACM------->`
 	
`        ... ringing tone ...`
 	
`--------ANM------->  --------ANM------->`
 	
`  :`
 	
_____
1. The PTC will assist a call set up with the expected parameters.
2. No COL request is sent.
3. Verdict is "pass" if the call set up continues.				

TSS COLP/	TP ISS_I_3_10	ISUP '97 reference 5.5.2.5.1/ITU-T Recommendation Q.731 [2]	Selection expression	ITU-T Recommendation Q.788 [29] reference 2.3.8

Case d)
 	
 SPC   SPA   SPB
 	
 `<-------IAM--------  <-------IAM--------`
 	
 `--------CON------->  --------CON------->`
 	
   :
 	
 _____
 	
 1. The PTC will assist a call set up with the expected parameters.
 	
 2. No COL request is sent.
 	
 3. Verdict is "pass" if the call set up continues.				

TSS COLP/	TP ISS_V_3_11	ISUP '97 reference 5.5.2.5.1 i)/ITU-T Recommendation Q.731 [2]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
 Connected number (user provided, verified and passed).
 To verify that the IUT can provide a **connected number** with the screening indicator set to "user provided, verified and passed", if the user provided COL is valid.
 Case a)
 	
 access   SPA   SPB
 	
 `<------setup-------  <-------IAM--------`
 	
 `-------alert------>  --------ACM------->`
 	
       ... ringing tone ...
 	
 `------connect----->  --------ANM------->`
 	
   :
 	
 _____
 	
 1. Set up a call to the access with a COLP request, access provides valid COL.
 	
 Case b)
 	
 access   SPA   SPB
 	
 `<------setup-------  <-------IAM--------`
 	
 `------connect----->  --------CON------->`
 	
   :
 	
 _____
 	
 1. Set up a call to the access with a COLP request, access provides valid COL.				

TSS COLP/	TP ISS_V_3_12	ISUP '97 reference 5.5.2.5.1 i)/ITU-T Recommendation Q.731 [2]	Selection expression DLE AND PICS A.3/8 (SUB)	ITU-T Recommendation Q.788 [29] reference 2.3.3

Test Purpose
Connected number (user provided, verified and passed) with connected sub-address.
To verify that the IUT can provide a **connected number** with the screening indicator set to "user provided, verified and passed", if the user provided COL is valid and an **access transport** parameter containing the connected sub-address.
Pre-test conditions.
Arrange the data in the IUT so that the connected party has subscribed to SUB.

```
Case a)

access              SPA                 SPB

 <------setup------ <-------IAM--------

 -------alert-----> --------ACM------->

        ... ringing tone ...

 ------connect----> --------ANM------->

   :

_____

1. Set up a call to the access with a COLP request, access provides valid COL with
sub-address.

Case b)

 access              SPA                 SPB

 <------setup------ <-------IAM--------

 ------connect----> --------CON------->

   :

_____

1. Set up a call to the access with a COLP request, access provides valid COL with
sub-address.
```

TSS COLP/	TP ISS_V_3_13	ISUP '97 reference 5.5.2.5.1 ii)/ITU-T Recommendation Q.731 [2]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Connected number (network provided).
To verify that the IUT can provide a default **connected number** with the screening indicator set to "network provided", if the user provided COL is not valid.

```
Case a)

 access              SPA                  SPB

 <------setup------- <-------IAM--------

 -------alert------> --------ACM------->

            ... ringing tone ...

 ------connect-----> --------ANM------->

   :

_____

1. Set up a call to the access with a COLP request, access provides invalid COL.

2. ScrI set to "network provided" is implicit.

Case b)

 access              SPA                  SPB

 <------setup------- <-------IAM--------

 -----connect-----> --------CON------->

   :

_____

1. Set up a call to the access with a COLP request, access provides invalid COL.

2. ScrI set to "network provided" is implicit.
```

TSS COLP/	TP ISS_V_3_14	ISUP '97 reference 5.5.2.5.1 ii)/ITU-T Recommendation Q.731 [2]	Selection expression DLE AND PICS A.3/8 (SUB)	ITU-T Recommendation Q.788 [29] reference 2.3.2

Test Purpose
Connected number (network provided) with connected sub-address.
To verify that the IUT can provide a default **connected number** with the screening indicator set to "network provided",
if the user provided COL is not valid and an **access transport** parameter containing the connected sub-address.
Pre-test conditions.
Arrange the data in the IUT so that the connected party has subscribed to SUB.
 	
`Case a)`
 	
` access              SPA                 SPB`
 	
` <------setup------- <-------IAM--------`
 	
` -------alert------> --------ACM------->`
 	
`         ... ringing tone ...`
 	
` ------connect-----> --------ANM------->`
 	
`   :`
_____
 	
`1.  Set up a call to the access with a COLP request, access provides invalid COL with`
`sub-address.`
 	
`Case b)`
 	
` access              SPA                 SPB`
 	
` <------setup------ <-------IAM--------`
 	
` ------connect----> --------CON------->`
 	
`   :`
_____
 	
`1. Set up a call to the access with a COLP request, access provides valid COL with`
`sub-address.`				

TSS COLP/	TP ISS_V_3_15	ISUP '97 reference 5.5.2.5.1 iii)/ITU-T Recommendation Q.731 [2]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Connected number (user provided, not verified). To verify that the IUT can provide a default **connected number** with the screening indicator set to "network provided" and a **generic number** containing the additional connected number with the screening indicator set to "user provided, not verified". Pre-test conditions. Arrange the data in the IUT so that there is a special arrangement from the access signalling system regarding an additional connected number. <pre>Case a)

 access   SPA   SPB

 <------setup------- <-------IAM--------

 -------alert------> --------ACM------->

          ... ringing tone ...

 ------connect-----> --------ANM------->

   :

_____

1. Set up a call to the access with a COLP request, access provides special COL.

Case b)

 access   SPA   SPB

 <------setup------- <-------IAM--------

 ------connect-----> --------CON------->

   :

_____

1. Set up a call to the access with a COLP request, access provides special COL.</pre> | | | | |

TSS COLP/	TP ISS_V_3_16	ISUP '97 reference 5.5.2.5.1 iii)/ITU-T Recommendation Q.731 [2]	Selection expression DLE AND PICS A.3/8 (SUB)	ITU-T Recommendation Q.788 [29] reference 2.3.4

Test Purpose
Connected number (user provided, not verified) with connected sub-address.
To verify that the IUT can provide a default **connected number** with the screening indicator set to "network provided",
a **generic number** containing the additional connected number with the screening indicator set to "user provided, not
verified" and an **access transport** parameter containing the connected sub-address.
Pre-test conditions.
Arrange the data in the IUT so that there is a special arrangement from the access signalling system regarding an
additional connected number and that the connected party has subscribed to the sub-addressing supplementary
service.

```
Case a)

 access              SPA                    SPB

 <------setup------ <-------IAM--------

 -------alert-----> --------ACM------->

         ... ringing tone ...

 ------connect----> --------ANM------->

   :

_____

1.  Set up a call to the access with a COLP request, access provides special COL with
sub-address.

Case b)

 access              SPA                    SPB

 <------setup------ <-------IAM--------

 ------connect----> --------CON------->

   :

_____

1. Set up a call to the access with a COLP request, access provides special COL with
sub-address.
```

TSS COLP/	TP ISS_V_3_17	ISUP '97 reference 5.5.2.5.1/ITU-T Recommendation Q.731 [2]	Selection expression DLE AND NOT PICS A.6/5	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
COL cannot be transferred.
To verify that the address presentation restricted indicator in the **connected number** in **ANM** or in **CON** is set to
"presentation restricted" or "address not available" and that the screening indicator shall be set to "network provided" if
the COL cannot be transferred.
Pre-test conditions.
Arrange the data in the IUT so that no COL can be transferred.
```
Case a)

 access              SPA                 SPB

 <------setup------- <-------IAM--------

 -------alert------> --------ACM------->

          ... ringing tone ...

 ------connect-----> --------ANM------->

  :

_____

1. Set up a call to the access with a COLP request, access doesn't provide the COL.

2. "address not available" ConNb.

3.  restricted ConNb.

Case b)

 access              SPA                 SPB

 <------setup------ <-------IAM--------

 ------connect----> --------CON------->

  :

_____

1. Set up a call to the access with a COLP request, access doesn't provide the COL.

2. "address not available" ConNb.

3. restricted ConNb.
```

TSS COLP/	TP ISS_V_3_18	ISUP '97 reference 5.6.14/ITU-T Recommendation Q.731 [2]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
COLP - interaction with MSN.
To verify that an exchange with MSN can provide the connected party multiple subscriber number or full ISDN number
as the **connected number** on call answer.
Pre-test conditions.
Arrange the data in the IUT such that the called user has activated the Multiple Subscriber Number (MSN)
supplementary service.

```
Case a)

 access              SPA                   SPB

 <------setup------- <-------IAM--------

 -------alert------> --------ACM------->

          ... ringing tone ...

 ------connect-----> --------ANM------->

   :

_____

1. Set up a call to the access with a COLP request.

2. ConNb - full ISDN number; ConNb.AdSg: TSP_Nb_A

   ConNb2 - multiple subscriber number; ConNb2.AdSg: TSP_Nb_A_MSN

Case b)

 access              SPA                   SPB

 <------setup------- <-------IAM--------

 ------connect-----> --------CON------->

   :

_____

1. Set up a call to the access with a COLP request.

2. ConNb - full ISDN number; ConNb.AdSg: TSP_Nb_A

   ConNb2 - multiple subscriber number; ConNb2.AdSg: TSP_Nb_A_MSN
```

7.3.4   Connected Line Identification Restriction (COLR)

TSS COLR/	TP ISS_V_4_1	ISUP '97 reference 6.5.2.1.1/ITU-T Recommendation Q.731 [2]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Presentation of restricted COL. To verify that a local exchange will not pass the information on to the access signalling system when a **connected number** is received in the ANM or CON and its address presentation restricted indicator is set to "presentation restricted", i.e. that presentation is denied on the User-Network Interface (UNI). Pre-test conditions. Arrange the data in the IUT such that the calling user subscribes to COLP. <pre>Case a)</pre><pre>access SPA SPB</pre><pre> -------setup------> --------IAM------></pre><pre> <------alert------- <-------ACM--------</pre><pre> ... ringing tone ...</pre><pre> <------connect----- <-------ANM--------</pre><pre> :</pre><pre>_____</pre><pre>1. Set up a call from the access with a COLP request.</pre><pre>2. The possible verdicts from observations on access are "failed" or "inconclusive".</pre><pre>Case b)</pre><pre>SPC SPA SPB</pre><pre> -------setup------> --------IAM------></pre><pre> <------connect------ <-------CON--------</pre><pre> :</pre><pre>_____</pre><pre>1. Set up a call from the access with a COLP request.</pre><pre>2. The possible verdicts from observations on access are "failed" or "inconclusive".</pre>				

TSS COLR/	TP ISS_I_4_2	ISUP '97 reference 6.5.2.1.2/ITU-T Recommendation Q.731 [2]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Presentation of restricted COL to "override category" calling user.
To verify that the received **connected number** and optionally the additional connected number in the **generic number**
can be conveyed successfully to an "override category" calling user, if the called user has activated the COnnected
Line Presentation Restriction (COLR) supplementary service.
Pre-test conditions.
Arrange the data in the IUT such that the calling user has an "override category".
Case a)
 	
`access            SPA                 SPB`
 	
`-------setup------> --------IAM------->`
 	
`<------alert------- <------ACM--------`
 	
`          ... ringing tone ...`
 	
`<-----connect------ <------ANM--------`
 	
`  :`
 	
_____
 	
1. Set up a call from the access with a COLP request.
 	
2. ConNb and addConNb in GenNb.
 	
3. The possible verdicts from observations on access are "failed" or "inconclusive".
 	
Case b)
 	
`SPC              SPA                 SPB`
 	
`-------setup------> --------IAM------->`
 	
`<-----connect------ <------CON--------`
 	
`  :`
 	
_____
 	
1. Set up a call from the access with a COLP request.
 	
2. The possible verdicts from observations on access are "failed" or "inconclusive".				

ETSI

TSS COLR/	TP ISS_V_4_3	ISUP '97 reference 6.5.2.2.1/ITU-T Recommendation Q.731 [2]	Selection expression Transit	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Passing on information relating to COLR.
To verify that the IUT shall pass transparently all information related to the COLR supplementary service in the address presentation restricted indicator of the **connected number** and optionally the additional connect number in the **generic number**.
 	
Case a)
 	
`SPC                    SPA                    SPB`
 	
` <-------IAM--------  <-------IAM--------`
 	
` -------ACM------->  -------ACM------->`
 	
`          ... ringing tone ...`
 	
` -------ANM------->  -------ANM------->`
 	
`   :`
 	
_____
 	
1. The PTC will assist a call set up with the expected parameters.
 	
2. ConNb.
 	
Case b)
 	
`SPC                    SPA                    SPB`
 	
` <-------IAM--------  <-------IAM--------`
 	
` -------CON------->  -------CON------->`
 	
`   :`
 	
_____
 	
1. The PTC will assist a call set up with the expected parameters.
 	
2. ConNb.
 	
Case c)
 	
` SPC                    SPA                    SPB`
 	
` <-------IAM--------  <-------IAM--------`
 	
` -------ACM------->  -------ACM------->`
 	
`           ... ringing tone ...`
 	
` -------ANM------->  -------ANM------->`
 	
`   :`
 	
_____
 	
1. The PTC will assist a call set up with the expected parameters.
 	
2. ConNb and addConNb in GenNb.				

TSS COLR/	TP ISS_V_4_3	ISUP '97 reference 6.5.2.2.1/ITU-T Recommendation Q.731 [2]	Selection expression Transit	ITU-T Recommendation Q.788 [29] reference None

```
Case d

 SPC                 SPA                 SPB

 <-------IAM--------  <-------IAM--------

 -------CON-------->  -------CON------->

  :

_____

1. The PTC will assist a call set up with the expected parameters.

2. ConNb and addConNb in GenNb.
```

TSS COLR/	TP ISS_V_4_4	ISUP '97 reference 6.5.2.4.1/ITU-T Recommendation Q.731 [2]	Selection expression InclE AND PICS A.7/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Discarding the connected number if the presentation is restricted.
To verify that the **connected number** is discarded in case of bilateral agreements, if the address presentation restricted indicator is set to "presentation restricted".
Pre-test conditions.
Arrange the data in IUT so that the connected number is discarded.

```
Case a)

 SPC                 SPA                 SPB

 --------IAM------>  --------IAM------->

 <-------ACM-------  <-------ACM-------

         ... ringing tone ...

 <-------ANM-------  <-------ANM-------

  :

_____

1. The PTC will initiate a call set up with the expected parameters.

2. Provide restricted ConNb to be discarded.

Case b)

 SPC                 SPA                 SPB

 --------IAM------>  --------IAM------->

 <-------CON-------  <-------CON--------

  :

_____

1. The PTC will initiate a call set up with the expected parameters.

2. Provide restricted ConNb to be discarded.
```

TSS COLR/	TP ISS_V_4_5	ISUP '97 reference 6.5.2.4.1/ITU-T Recommendation Q.731 [2]	Selection expression IncIE AND PICS A.7/2	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Discarding the additional connected number in the generic number if the presentation is restricted.
To verify that the additional connected number in the **generic number** is discarded in case of bilateral agreements, if
the address presentation restricted indicator is set to "presentation restricted".
Pre-test conditions.
Arrange the data in IUT so that the additional connected number in the generic number is discarded.

```
Case a)

 SPC                    SPA                    SPB

 --------IAM------>  --------IAM------->

 <-------ACM-------  <------ACM-------

          ... ringing tone ...

 <-------ANM-------  <------ANM-------

   :

_____

1. The PTC will initiate a call set up with the expected parameters.

2. Provide restricted ConNb and restricted addConNb in GenNb to be discarded.

Case b)

 SPC                    SPA                    SPB

 --------IAM------>  --------IAM------->

 <-------CON-------  <------CON--------

   :

_____

1. The PTC will initiate a call set up with the expected parameters.

2. Provide restricted ConNb and restricted addConNb in GenNb to be discarded.
```

TSS COLR/	TP ISS_I_4_6	ISUP '97 reference 6.5.2.4.1/ITU-T Recommendation Q.731 [2]	Selection expression IncIE AND PICS A.7/3	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Resetting the address signals of the connected number, whose release is forbidden.
To verify that for a **connected number** which is not to be released to the originating network the setting of the address presentation restricted indicator can be changed from "presentation restricted" to "address not available" and that the address signals are reset.

```
Case a)

 SPC                    SPA                     SPB

 --------IAM------>   -------IAM------->

 <-------ACM-------   <-------ACM-------

           ... ringing tone ...

 <-------ANM-------   <-------ANM-------

   :

_____
```

1. The PTC will initiate a call set up with the expected parameters.

2. Provide restricted ConNb to be reset.

```
Case b)

 SPC                    SPA                     SPB

 --------IAM------>   --------IAM------->

 <-------CON-------   <-------CON--------

   :

_____
```

1. The PTC will initiate a call set up with the expected parameters.

2. Provide restricted ConNb to be reset.

TSS COLR/	TP ISS_V_4_7	ISUP '97 reference 6.5.2.5.1/ITU-T Recommendation Q.731 [2]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Restricted connected number (user provided, verified and passed).

To verify that the IUT can provide a **connected number** with the screening indicator set to "user provided, verified and passed" and with the address presentation restricted indicator set to "presentation restricted", if the user provided COL is valid.

Pre-test conditions.

Arrange the data in the IUT so that the connected party has subscribed to COLR.

```
Case a)

 access              SPA                    SPB

 <------setup------- <-------IAM--------

 -------alert------> --------ACM------->

           ... ringing tone ...

 ------connect-----> --------ANM------->

   :

_____
```

1. Set up a call to the access with a COLP request, access provides valid COL.

```
Case b)

 access              SPA                    SPB

 <------setup------ <-------IAM--------

 ------connect----> --------CON------->

   :

_____
```

1. Set up a call to the access with a COLP request, access provides valid COL.

TSS COLR/	TP ISS_V_4_8	ISUP '97 reference 6.5.2.5.1/ITU-T Recommendation Q.731 [2]	Selection expression DLE AND PICS A.3/8 (SUB)	ITU-T Recommendation Q.788 [29] reference 2.3.6

Test Purpose
Restricted connected number (user provided, verified and passed) with connected sub-address.
To verify that the IUT can provide a **connected number** with the screening indicator set to "user provided, verified and passed" and with the address presentation restricted indicator set to "presentation restricted", if the user provided COL is valid. Additionally, an **access transport** parameter containing the connected sub-address shall also be provided.
Pre-test conditions.
Arrange the data in the IUT so that the connected party has subscribed to COLR and SUB.

```
Case a)

 access            SPA                    SPB

 <------setup------ <-------IAM--------

 -------alert-----> --------ACM------->

         ... ringing tone ...

 ------connect----> --------ANM------->

   :

_____

1. Set up a call to the access with a COLP request, access provides valid COL with
sub-address.

Case b)

 access             SPA                   SPB

 <------setup------- <-------IAM--------

 -------connect----> --------CON------->

   :

_____

1. Set up a call to the access with a COLP request, access provides valid COL with
sub-address.
```

TSS COLR/	TP ISS_V_4_9	ISUP '97 reference 6.5.2.5.1/ITU-T Recommendation Q.731 [2]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Restricted connected number (network provided).
To verify that the IUT can provide a default **connected number** with the screening indicator set to "network provided" and with the address presentation restricted indicator set to "presentation restricted", if the user provided COL is not valid.
Pre-test conditions.
Arrange the data in the IUT so that the connected party has subscribed to the COLR.
Case a)
 	
 access   SPA   SPB
 	
 <------setup------- <-------IAM--------
 	
 -------alert------> --------ACM------>
 	
         ... ringing tone ...
 	
 ------connect----> --------ANM------>
 	
  :
_____
 	
1. Set up a call to the access with a COLP request, access provides invalid COL.
 	
Case b)
 	
 access   SPA   SPB
 	
 <------setup------- <-------IAM--------
 	
 ------connect-----> --------CON------>
 	
:
_____
 	
1. Set up a call to the access with a COLP request, access provides invalid COL.

TSS COLR/	TP ISS_V_4_10	ISUP '97 reference 6.5.2.5.1/ITU-T Recommendation Q.731 [2]	Selection expression DLE AND PICS A.3/8 (SUB)	ITU-T Recommendation Q.788 [29] reference 2.3.5

Test Purpose
Restricted connected number (network provided) with connected sub-address.
To verify that the IUT can provide a default **connected number** with the screening indicator set to "network provided" and with the address presentation restricted indicator set to "presentation restricted", if the user provided COL is not valid. Additionally, an **access transport** parameter containing the connected sub-address shall also be provided.
Pre-test conditions.
Arrange the data in the IUT so that the connected party has subscribed COLR and SUB.
Case a)

```
 access           SPA                    SPB

 <------setup------- <-------IAM--------

 -------alert------> --------ACM------->

         ... ringing tone ...

 ------connect-----> --------ANM------->

   :

_____
```

1. Set up a call to the access with a COLP request, access provides invalid COL with sub-address.

2. ScrI "network provided" is implicit.

Case b)

```
 access           SPA                    SPB

 <------setup------ <-------IAM--------

 ------connect----> --------CON------->

   :

_____
```

1. Set up a call to the access with a COLP request, access provides invalid COL with sub-address.

2. ScrI "network provided" is implicit.

TSS COLR/	TP ISS_V_4_11	ISUP '97 reference 6.5.2.5.1/ITU-T Recommendation Q.731 [2]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Restricted connected number (user provided, not verified).
To verify that the IUT can provide a default **connected number** with the screening indicator set to "network provided"
and a **generic number** containing the additional connected number with the screening indicator set to "user provided,
not verified" - both having the address presentation restricted indicator set to "presentation restricted".
Pre-test conditions.
Arrange the data in IUT so that there is a special arrangement from the access signalling system regarding an
additional connected number and that the connected party has subscribed to COLR.

```
Case a)

 access              SPA                   SPB

 <------setup------- <-------IAM--------

 -------alert------> --------ACM------->

           ... ringing tone ...

 ------connect-----> --------ANM------->

   :

_____

1. Set up a call to the access with a COLP request, access provides special COL.

Case b)

 access              SPA                   SPB

 <------setup------- <-------IAM--------

 ------connect-----> --------CON------->

   :

_____

1. Set up a call to the access with a COLP request, access provides special COL.
```

TSS COLR/	TP ISS_V_4_12	ISUP '97 reference 6.5.2.5.1/ITU-T Recommendation Q.731 [2]	Selection expression DLE AND PICS A.3/8 (SUB)	ITU-T Recommendation Q.788 [29] reference 2.3.5

Test Purpose
Restricted connected number (user provided, not verified) with connected sub-address.
To verify that the IUT can provide a default **calling party number** with the screening indicator set to "network provided", a **generic number** containing the additional connected number with the screening indicator set to "user provided, not verified" - both having the address presentation restricted indicator set to "presentation restricted" and additionally an **access transport** parameter containing the connected sub-address.
Pre-test conditions.
Arrange the data in IUT so that there is a special arrangement from the access signalling system regarding an additional connected number and that the connected party has subscribed to COLR and SUB.
```
Case a)

 access              SPA                 SPB

 <------setup------   <-------IAM--------

 -------alert------>  --------ACM------->

          ... ringing tone ...

 ------connect----->  --------ANM------->

   :

_____

1. Set up a call to the access with a COLP request, access provides special COL with
sub-address.

Case b)

 access              SPA                 SPB

 <------setup------   <-------IAM--------

 ------connect----->  --------CON------->

   :

_____

1. Set up a call to the access with a COLP request, access provides special COL with
sub-address.
```

7.3.5   Terminal portability (TP)

TSS TP/	TP ISS_V_5_1	ISUP '97 reference 4.5.2.1.1 a)/ITU-T Recommendation Q.733 [33]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference 2.12.1

Test Purpose
Terminal portability, requested by the calling party.
To verify that the calling party can suspend and resume an outgoing call and that user initiated **SUS** and **RES** messages are sent to the succeeding exchange.
Pre-test conditions.
Arrange the data in the IUT so that the calling party subscribes to the Terminal portability service.
<pre> access   SPA   SPB
 	
 ------setup-------> -------IAM------->
 	
 <-----alert-------- <------ACM---------
 	
          ... ringing tone ...
 	
 <----connect------- <------ANM---------
 	
        ... check communication ...
 	
 ----tp-suspend----> -------SUS-------->
 	
 -----tp-resume----> -------RES-------->
:
_____
 	
1. Set up a call from SPA to SPB.
 	
2. Suspend the call by the calling party (ISDN subscriber).
 	
3. Resume the call by the calling party (ISDN subscriber).</pre>				

TSS TP/	TP ISS_V_5_2	ISUP '97 reference 4.5.2.1.1 b)/ITU-T Recommendation Q.733 [33]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference 2.12.1

Test Purpose
Terminal portability, requested by the called party.
To verify that IUT informs the calling party that a suspend and a resume have been requested by the called party upon receipt of user initiated **SUS** and **RES** messages.
<pre>access   SPA   SPB
 	
 -------setup------> -------IAM------->

  <------alert------- <------ACM--------
          ... ringing tone ...
  <-----connect------ <------ANM--------
         ... check communication ...
  <-----tp-suspend--- <------SUS--------
  <-----tp-resume---- <------RES--------
 :</pre> _____ 1. Set up a call from SPA to SPB. 2. Suspend the call by the called party (ISDN subscriber). 3. Resume the call by the called party (ISDN subscriber).				

TSS TP/	TP ISS_I_5_3	ISUP '97 reference 4.5.2.1.2/ITU-T Recommendation Q.733 [33]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference 2.12.2

Test Purpose
Terminal portability, requested by local served user, no Resume after Suspend.
To verify that the call is released with cause #102 (recovery on timer expiry) by the IUT if timer T2 expires because the local served user does not resume the call.
Pre-test conditions.
Arrange the data in the IUT so that the local user subscribes to the Terminal portability service.
<pre>access   SPA   SPB
 	
 -------setup-------> -------IAM------->
 	
 <------alert-------- <------ACM---------
 	
          ... ringing tone ...
 	
 <-----connect------- <------ANM---------
 	
        ... check communication ...
 	
 -----tp-suspend----> -------SUS------->
 	
                                  |
 	
                                  T2
 	
 <-----disconnect---- -------REL------->
                      <------RLC---------
 	
 :
_____
 	
1. Set up a call from SPA to SPB.
 	
2. Suspend the call by the calling party (ISDN subscriber).
 	
3. Check if the call is released with cause #102.</pre>				

TSS TP/	TP ISS_V_5_4	ISUP '97 reference 4.5.2.1.1/ITU-T Recommendation Q.733 [33]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Terminal portability, release suspended call.
To verify that a suspended call can be released by the IUT, if the local user or the remote user releases the call.

```
Case a)

 access              SPA                    SPB

 -------setup------>  -------IAM------->

 <------alert-------  <------ACM--------

          ... ringing tone ...

 <-----connect------  <------ANM--------

       ... check communication ...

 -----tp-suspend--->  -------SUS------->

 ----disconnect--->  -------REL------->

_____

1. Set up a call from SPA to SPB.

2. Suspend the call by the calling party (ISDN subscriber).

3. Release the suspended call by the local user.

Case b)

 access              SPA                    SPB

 -------setup------>  -------IAM-------->

 <------alert-------  <------ACM---------

          ... ringing tone ...

 <------connect-----  <------ANM---------

        ... check communication ...

 -----tp-suspend--->  -------SUS-------->

 <----disconnect----  <------REL---------

:

_____

1. Set up a call from SPA to SPB.

2. Suspend the call by the calling party (ISDN subscriber).

3. Release the suspended call by the remote user.
```

TSS TP/	TP ISS_V_5_5	ISUP '97 references 4.5.2.2.1 a), 4.5.2.3.1, 4.5.2.4.1/ITU-T Recommendation Q.733 [33]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Terminal portability, requested by the calling party (transit call).
To verify that the **SUS** and **RES** messages are passed on transparently by the IUT, if the calling party requests the service.
 	
`  SPC                 SPA                 SPB`
 	
` ------IAM-------> -------IAM------->`
 	
` <-----ACM-------- <------ACM-------`
 	
`          ... ringing tone ...`
 	
` <-----ANM-------- <------ANM-------`
 	
`      ... check communication ...`
 	
` ------SUS-------> -------SUS------->`
 	
` ------RES-------> -------RES------->`
 	
`:`
 	
`_____`
 	
1. Set up a call from SPA to SPB.
 	
2. Suspend the call by the calling party (ISDN subscriber).
 	
3. Resume the call by the calling party (ISDN subscriber).				

TSS TP/	TP ISS_V_5_6	ISUP '97 references 4.5.2.2.1 b), 4.5.2.3.1, 4.5.2.4.1/ITU-T Recommendation Q.733 [33]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Terminal portability, requested by the called party (transit call).
To verify that the **SUS** and **RES** messages are passed on transparently by the IUT, if the called party requests the service.
<pre> SPC   SPA   SPB
 	
 <------IAM-------- <-------IAM--------
 	
 -------ACM------> -------ACM------>
 	
          ... ringing tone ...
 	
 -------ANM------> -------ANM------->
 	
      ... check communication ...
 	
 -------SUS------> --------SUS------>
 	
 -------RES------> -------RES------>
 	
:
_____</pre>
1. Set up a call from the UNI at SPB.
 	
2. The called party at UNI at SPC suspends the call (ISDN subscriber).
 	
3. The called party at UNI at SPC resumes the call (ISDN subscriber).				

TSS TP/	TP ISS_V_5_7	ISUP '97 reference 4.5.2.5.1 a)/ITU-T Recommendation Q.733 [33]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.12.1

Test Purpose
Terminal portability, requested by the calling party.
To verify that the IUT informs the called party that suspend and resume have been requested by the calling party upon receipt of user initiated **SUS** and **RES** messages.
 	
`access              SPA              SPB`
 	
` <----setup------- <------IAM---------`
 	
` -----alert------> -------ACM------->`
 	
`         ... ringing tone ...`
 	
` -----connect----> -------ANM------->`
 	
`       ... check communication ...`
 	
` <---tp-suspend--- <------SUS---------`
 	
` <---tp-resume---- <------RES---------`
 	
` :`
 	
───
 	
1. Set up a call from the UNI at SPB.
 	
2. The calling party at SPB suspends the call (ISDN subscriber).
 	
3. The calling party at SPB resumes the call (ISDN subscriber).				

TSS TP/	TP ISS_V_5_8	ISUP '97 reference 4.5.2.5.1 b)/ITU-T Recommendation Q.733 [33]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.12.1

Test Purpose
Terminal portability, requested by the called party.
To verify that the called party can suspend and resume an incoming call and that user initiated **SUS** and **RES** messages are sent to the preceding exchange.
Pre-test conditions.
Arrange the data in the IUT so that the called party subscribes to the Terminal portability service.
<pre> access   SPA   SPB
 	
<-----setup------   <-----IAM---------
 	
------alert-----> ------ACM------->
 	
        ... ringing tone ...
 	
-----connect----> ------ANM------->
 	
     ... check communication ...
 	
----tp-suspend--> ------SUS------->￼
 	
----tp-resume---> ------RES------->￼
 	
  :
 	
_____
 	
1. Set up a call from the UNI at SPB.
 	
2. The called party at UNI at SPA suspends the call (ISDN subscriber).
 	
3. The called party at UNI at SPA resumes the call (ISDN subscriber).</pre>				

TSS NO_TP/	TP ISS_I_5_9	ISUP '97 references 4.5.2.3.2, 4.5.2.4.2/ITU-T Recommendation Q.733 [33]	Selection expression Gateway AND NOT PICS A.3/5 AND PICS A.8/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Terminal portability, national network does not support the service.
To verify that the **SUS** and **RES** messages are discarded by the IUT without notification if the served user requests suspend and resume, but the national network does not support the Terminal portability service.

```
SPC                  SPA                  SPB

 <------IAM-------  <-----IAM--------

 -------ACM------>  ------ACM------->

         ... ringing tone ...

 -------ANM------>  ------ANM------->

      ... check communication ...

 -------SUS------>

                 Nothing is observed

 -------RES------>

:
_____
```

1. Set up a call from the UNI at SPB.

TSS TP/	TP ISS_V_5_10	ISUP '97 reference 4.6.13.3/ITU-T Recommendation Q.733 [33]	Selection expression Local AND PICS A.9/8	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Terminal portability, request for UUS3 while call is suspended. To verify that a request for User-to-user signalling service 3 is rejected by the IUT if the call is currently suspended and if the IUT is the suspend controlling exchange. Pre-test conditions. Arrange the data in the IUT so that the local user subscribes both to the Terminal portability service and to the User-to-user signalling service 3.				

```
access               SPA               SPB

 <----setup--------  <-----IAM--------

 -----alert------->  ------ACM------->

          ... ringing tone ...

 ----connect------>  ------ANM------->

      ... check communication ...

 ----tp-suspend--->  ------SUS------->

 ----UUS3-req----->  reject - nothing happens in the network

 ----tp-resume---->  ------RES------->
:

_____

1. Set up a call from the UNI at SPB.

2. The called party suspends the call (ISDN subscriber).

3. The called party resumes the call (ISDN subscriber).
```

7.3.6 User-To-User Signalling (UUS)

7.3.6.1 User-To-User Signalling Service 1 (UUS1)

TSS UUS/UUS1_I/	TP ISS_V_6_1_1	ISUP '97 reference 1.1.2.1/ITU-T Recommendation Q.737 [34]	Selection expression OLE AND PICS A.9/1	ITU-T Recommendation Q.788 [29] reference None
Test Purpose 32 octets user-to-user information. To verify that the IUT can successfully initiate a call having 32 octets of **user-to-user information** in the messages related to the set up or the release of the call. Pre-test conditions. Arrange the data in the IUT so that the user has subscribed to the UUS1 supplementary service.				

```
 access                  SPA                     SPB

 ----setup(UUInf)---->   -----IAM(UUInf)---->

 <---alert(UUInf)-----   <----ACM(UUInf)-----

            ... ringing tone ...

 <--connect(UUInf)----   <----ANM(UUInf)-----

         ... check communication ...

  <---disc(UUInf)-----   <----REL(UUInf)-----

                         -------RLC--------->
_____

1. Set up a call from UNI at SPA to SPB with 32 octets of user-to-user information.
```

TSS UUS/UUS1_I/	TP ISS_V_6_1_2	ISUP '97 references 1.1.5.2.1.1.1, 1.1.5.2.1.1.3, 1.1.5.2.2-4.1/ITU-T Recommendation Q.737 [34]	Selection expression OLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.15.1

Test Purpose

UUS1 implicit - request.

To verify that the IUT can successfully initiate/transit a call with an UUS 1 implicit request, having the **user-to-user information** parameter in the **IAM**, without the **user-to-user indicators** parameter.

Pre-test conditions (in case of OLE).

Arrange the data in the IUT so that the user has subscribed to the UUS1 supplementary service.

```
Case a)

 access                SPA                    SPB

 ----setup(UUInf)--->  ------IAM(UUInf)---->

 <---alert(UUInf)----  <-----ACM(UUInf)-----

            ... ringing tone ...

 <--connect(UUInf)---  <-----ANM(UUInf)-----

         ... check communication ...

 <---disc(UUInf)-----  <-----REL(UUInf)-----

                       -------RLC---------->
```
_____

1. Set up a call from UNI at SPA to SPB with user-to-user information.

```
Case b)

SPC                   SPA                    SPB

 -----IAM(UUInf)---->  -----IAM(UUInf)---->

 <----ACM(UUInf)-----  <----ACM(UUInf)-----

            ... ringing tone ...

 <----ANM(UUInf)-----  <----ANM(UUInf)-----

          ... check communication ...

 <----REL(UUInf)-----  <----REL(UUInf)-----

 --------RLC-------->  -------RLC--------->
```
_____

1. Set up a call from UNI at SPA to SPB with user-to-user information.

TSS UUS/UUS1_I/	TP ISS_I_6_1_3	ISUP '97 references 1.1.5.2.5.2.3, 1.1.5.2.2-4.2/ITU-T Recommendation Q.737 [34]	Selection expression OLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.15.2

Test Purpose
UUS1 implicit - discarded with indication received.
To verify that the IUT can, after successfully initiating/transiting a call with an UUS1 implicit request, continue normal call set up if the first backward message is received with the **user-to-user indicators** set to "user-to-user information discarded by the network".
NOTE: The user-to-user information is discarded because the following network does not support it.
Pre-test conditions (in case of OLE).
Arrange the data in the IUT so that the user has subscribed to the UUS1 supplementary service.
```
Case a)

 access                 SPA                    SPB

 ----setup(UUInf)---->  -----IAM(UUInf)----->

 <-------alert--------  <---ACM(UUInf disc)--

  :

_____

1. Set up a call from UNI at SPA to SPB with user-to-user information.

2. First backward message with user-to-user indicators set to "UUInf discarded by the
network".

Case b)

SPC                     SPA                    SPB

 -----IAM(UUInf)----->  -----IAM(UUInf)----->

 <---ACM(UUInf disc)--  <--ACM(UUInf disc)---

  :

_____

1. Set up a call from UNI at SPA to SPB with user-to-user information.

2. First backward message with user-to-user indicators set to "UUInf discarded by the
network".
```

TSS UUS/UUS1_I/	TP ISS_I_6_1_4	ISUP '97 references 1.1.5.2.5.2.3, 1.1.5.2.3-5.2 /ITU-T Recommendation Q.737 [34]	Selection expression OLE OR IntermE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
UUS1 implicit - discarded but no indication received.
To verify that the IUT can successfully initiate/transit a call with an UUS1 implicit request, and complete the call if no indication is provided in the backward direction.
NOTE: The user-to-user information is discarded because:
          1) the remote network is unable to pass the service 1 in any message.
          2) the remote user may not be able to interpret incoming UUS information.
Pre-test conditions (in case of OLE).
Arrange the data in the IUT so that the user has subscribed to the UUS1 supplementary service.
```
Case a)

 access                 SPA                     SPB

 ----setup(UUInf)--->   -----IAM(UUInf)---->

 <-----alert---------   <-------ACM---------

          ... ringing tone ...

 <-----connect-------   <-------ANM---------

        ... check communication ...

 <-----disc----------   <-------REL---------

                        --------RLC-------->
_____

1. Set up a call from UNI at SPA to SPB with user-to-user information.

2. No indication in the first backward message.

Case b)

SPC                    SPA                     SPB

 ----IAM(UUInf)----->   -----IAM(UUInf)---->

 <--ACM(UUInf disc)--   <-------ACM---------

          ... ringing tone ...

 <-------ANM---------   <-------ANM---------

        ... check communication ...

 <-------REL---------   <-------REL---------

 --------RLC-------->   --------RLC-------->
_____

1. Set up a call from UNI at SPA to SPB with user-to-user information.

2. No indication regarding UUS1 in the first backward message.
```

TSS UUS/UUS1_I/	TP ISS_V_6_1_5	ISUP '97 references 1.1.5.2.1.1.1, 1.1.5.2.1.1.3, 1.1.5.2.3-5.1/ITU-T Recommendation Q.737 [34]	Selection expression IntermE OR DLE	ITU-T Recommendation Q.788 [29] reference 2.15.1

Test Purpose
UUS1 implicit - acceptance.
To verify that the IUT can successfully transit/accept a call with an UUS1 implicit request, and transfer/include the **user-to-user information** parameter in the **ACM**, **CPG, ANM, CON**, **SGM** or **REL** as implicit acceptance (no **user-to-user indicators**).
Pre-test conditions (in case of DLE).
Arrange the data in the IUT so that the user has subscribed to the UUS1 supplementary service.
Case a)
 	
`access                 SPA                     SPB`
 	
` <----setup(UUInf)--- <-----IAM(UUInf)-----`
 	
` ----alert(UUInf)---> ------ACM(UUInf)---->`
 	
`            ... ringing tone ...`
 	
` ---connect(UUInf)--> ------ANM(UUInf)---->`
 	
`        ... check communication ...`
 	
` <----disc(UUInf)---- <-----REL(UUInf)-----`
 	
`                      --------RLC--------->`
_____
1. Set up a call from UNI at SPB to SPA with user-to-user information.
 	
Case b)
 	
`SPC                     SPA                     SPB`
 	
` <----IAM(UUInf)----- <-----IAM(UUInf)----`
 	
` -----ACM(UUInf)----> ------ACM(UUInf)--->`
 	
`            ... ringing tone ...`
 	
` -----ANM(UUInf)----> ------ANM(UUInf)--->`
 	
`        ... check communication ...`
 	
` <----REL(UUInf)----- <-----REL(UUInf)----`
 	
`                      ---------RLC------->`
_____
1. Set up a call from UNI at SPB to SPA with user-to-user information.

TSS UUS/NO_UUS1_I/	TP ISS_I_6_1_6	ISUP '97 references 1.1.5.2.5.2.3, 1.1.5.2.3-5.2/ITU-T Recommendation Q.737 [34]	Selection expression IntermE OR DLE	ITU-T Recommendation Q.788 [29] reference 2.15.2

Test Purpose
UUS1 implicit - discard with indication generated.
To verify that the IUT can successfully transit/accept a call with an UUS1 implicit request and set the **user-to-user indicators** to "user-to-user information discarded by the network" in the first backward message, if the network is unable to support it.
NOTE: The user-to-user information is discarded because the network does not support it.
Pre-test conditions.
Arrange the data in the IUT such that the network does not support the UUS1 service.

```
Case a)

access                  SPA                      SPB

 <------setup---------  <-----IAM(UUInf)------

 -------alert--------->  -----ACM(UUInf disc)->

  :

_____

1. Set up a call from UNI at SPB to SPA with user-to-user information.

2. Check "user-to-user information discarded by the network" in the first backward
message (ACM).

Case b)

SPC                     SPA                      SPB

 <------IAM-----------  <-----IAM(UUInf)-----

 ---ACM(UUInf disc)-->  ---ACM(UUInf disc)-->

  :

_____

1. Set up a call from UNI at SPB to SPC with user-to-user information.

2. Check "user-to-user information discarded by the network" in the first backward
message (ACM).
```

TSS UUS/UUS1_E/	TP ISS_V_6_1_7	ISUP '97 references 1.1.5.2.1.1.2, 1.1.5.2.2-4.1/ITU-T Recommendation Q.737 [34]	Selection expression OLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.15.3

Test Purpose
UUS1 explicit non-essential - request.
To verify that the IUT can successfully initiate/transit a call with an UUS1 explicit non-essential request, by
including/transferring the **user-to-user information** parameter and the **user-to-user indicators** in the **IAM** set to
"request, not essential".
Pre-test conditions (in case of OLE).
Arrange the data in the IUT so that the user has subscribed to the UUS1 supplementary service.
Case a)
 	
``
 access   SPA   SPB
 	
 ----setup(UUInf)----> -----IAM(UUInf)-----> UUS1 explicit request
 	
 <---alert(UUInf)----- <----ACM(UUInf)------ UUS1 explicit response
 	
         ... ringing tone ...
 	
 <--connect(UUInf)---- <----ANM(UUInf)------
 	
       ... check communication ...
 	
  <---disc(UUInf)----- <----REL(UUInf)------
 	
                     --------RLC-------->
``
_____
 	
1. Set up a call from UNI at SPA to SPB with user-to-user information.
 	
2. Check that the Service 1 field in the UUInd is set to "request, not essential".
 	
Case b)
 	
``
 SPC   SPA   SPB
 	
 -----IAM(UUInf)---> -----IAM(UUInf)-----> UUS1 explicit request
 	
 <----ACM(UUInf)---- <----ACM(UUInf)------ UUS1 explicit response
 	
          ... ringing tone ...
 	
 <----CON(UUInf)---- <----ANM(UUInf)------
 	
        ... check communication ...
 	
 <----REL(UUInf)---- <----REL(UUInf)------
 	
                     --------RLC-------->
``
_____
 	
1. Set up a call from UNI at SPA to SPB with user-to-user information and user-to-user
service indicators.
 	
2. Check that the Service 1 field in the UUInd is set to "request, not essential".

TSS UUS/UUS1_E/	TP ISS_I_6_1_8	ISUP '97 references 1.1.5.2.5.2.3, 1.1.5.2.2-4.2/ITU-T Recommendation Q.737 [34]	Selection expression OLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.15.5

Test Purpose

UUS1 explicit non-essential - explicit rejection received.

To verify that the IUT can successfully initiate/transit a call with an UUS1 explicit non-essential request, and continue normal call set up if the UUS1 service is explicitly rejected (the **user-to-user indicators** parameter is received as "service not provided" in the **ACM** or **CPG** or **ANM** or **CON** or **REL**).

NOTE: The user-to-user information is discarded because:
          1) the network is unable to pass the explicit service 1 in any message.
          2) the remote user may not be able to interpret incoming UUS information.

Pre-test conditions (in case of OLE).

Arrange the data in the IUT so that the user has subscribed to the UUS1 supplementary service.

Case a)

```
 access              SPA                    SPB

 ----setup(UUInf)---->  -----IAM(UUInf)---->  UUS1 explicit request

 <---alert(UUInd)-----  <----ACM(UUInd)-----  UUS1 explicit response

          ... ringing tone ...

 <-----connect--------  <-------ANM---------

      ... check communication ...

 <-------disc---------  <-------REL---------

                        -------RLC-------->
```
_____

1. Set up a call from UNI at SPA to SPB with user-to-user information and user-to-user service indicators.

2. Check the Service 1 field in the UUInd is set to "request, not essential".

3. Send the response "Service not provided" in the ACM.

Case b)

```
 SPC               SPA                    SPB

 -----IAM(UUInf)---->  ------IAM(UUInf)---->  UUS1 explicit request

 <----ACM(UUInd)-----  <-----ACM(UUInd)-----  UUS1 explicit response

          ... ringing tone ...

 <------CON----------  <-------ANM---------

      ... check communication ...

 <------REL----------  <-------REL----------

                        -------RLC--------->
```
_____

1. Set up a call from UNI at SPA to SPB with user-to-user information and user-to-user service indicators.

2. Check the Service 1 field in the UUInd is set to "request, not essential".

3. Send the response "Service not provided" in the ACM.

TSS UUS/UUS1_E/	TP ISS_I_6_1_9	ISUP '97 references 1.1.5.2.5.2.3, 1.1.5.2.2-4.2/ITU-T Recommendation Q.737 [34]	Selection expression OLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.15.4

Test Purpose
UUS1 explicit non-essential - implicit (no explicit) rejection received.
To verify that the IUT can successfully initiate/transit a call with an UUS1 explicit non-essential request, and continue normal call set up if no indication is provided in the backward direction.
NOTE: The user-to-user information is discarded because:
            1) the network is unable to pass the explicit service 1 in any message.
            2) the remote user may not be able to interpret incoming UUS information.
Pre-test conditions (in case of OLE).
Arrange the data in the IUT so that the user has subscribed to the UUS1 supplementary service.
Case a)
 	
 access   SPA   SPB
 	
 ----setup(UUInf)----> -----IAM(UUInf)-----> UUS1 explicit request
 	
 <---alert(UUInd)----- <----ACM(UUInd)------ UUS1 explicit response
 	
           ... ringing tone ...
 	
 <------connect------- <-------ANM----------
 	
       ... check communication ...
 	
 <-------disc--------- <------REL----------
 	
                       -------RLC--------->
_____
 	
1. Set up a call from UNI at SPA to SPB with user-to-user information and user-to-user service indicators.
 	
2. Check the Service 1 field in the UUInd is set to "request, not essential".
 	
3. Send the response "no information" in the ACM.
 	
Case b)
 	
 SPC   SPA   SPB
 	
 -----IAM(UUInf)----> -----IAM(UUInf)-----> UUS1 explicit request
 	
 <----ACM(UUInd)----- <----ACM(UUInd)------ UUS1 explicit response
 	
           ... ringing tone ...
 	
 <-------CON--------- <------ANM----------
 	
        ... check communication ...
 	
 <-------REL--------- <------REL----------
 	
                       -------RLC--------->
_____
 	
1. Set up a call from UNI at SPA to SPB with user-to-user information and user-to-user service indicators.
 	
2. Check the Service 1 field in the UUInd is set to "request, not essential".
 	
3. Send the response "no information" in the ACM.

TSS UUS/UUS1_E/	TP ISS_I_6_1_10	ISUP '97 references 1.1.5.2.2.2, table 1-1/ITU-T Recommendation Q.737 [34]	Selection expression Gateway AND PICS A.9/5	ITU-T Recommendation Q.788 [29] reference 2.15.5

Test Purpose
UUS1 explicit non-essential rejection in Gateway.
To verify that the UUS1 explicit non-essential service can be rejected and the **user-to-user indicators** are in the **ACM** or **CON** set to "service 1 not provided".
NOTE: The user-to-user service is rejected because:
        1) the gateway received a **CFN** from the succeeding network (see note 3 table 1-1).
        2) the gateway has received **user-to-user information** in the **SGM** (Basic call PICS A.13/7) and the
        succeeding network does not support the segmentation procedure (see note 2 table 1-1).
 	
`SPC                     SPA                     SPB`
 	
`<----IAM(UUInf)-----  <----IAM(UUInf)----  UUS1 explicit request`
 	
`-----CFN(UUInd)---->  -----ACM(UUInd)--->  UUS1 explicit response`
 	
`           ... ringing tone ...`
 	
`--------CON-------->  -------ANM------->`
 	
`     ... check communication ...`
 	
`<-------REL--------  <-------REL--------`
 	
`                     -------RLC------->`
 	
_____
 	
1. Set up a call from UNI at SPB to SPA with user-to-user information and user-to-user service indicators.
 	
2. The Service 1 field in the UUInd is set to "request, not essential".
 	
3. Check the response "Service not provided" in the ACM.				

TSS UUS/UUS1_E/	TP ISS_V_6_1_11	ISUP '97 references 1.1.5.2.1.1.2, 1.1.5.2.3-5.1/ITU-T Recommendation Q.737 [34]	Selection expression IntermE OR DLE	ITU-T Recommendation Q.788 [29] reference 2.15.3

Test Purpose
UUS1 explicit non-essential - acceptance.
To verify that the IUT can successfully transit/accept a call with an UUS1 explicit non-essential request, by transferring/including the **user-to-user indicators** parameter in the **ACM, CPG, ANM**, **CON** or **REL** set to "service provided".
Pre-test conditions (in case of DLE).
Arrange the data in the IUT so that the user has subscribed to the UUS1 supplementary service.
Case a)
 	
<pre>access   SPA   SPB
 	
 <-----setup(UUInf)---- <-----IAM(UUInf)----- UUS1 explicit request
 	
 ------alert(UUInf)---> ------ACM(UUInf)----> UUS1 explicit response
 	
            ... ringing tone ...
 	
 ----connect(UUInf)---> ------ANM(UUInf)---->
 	
            ... check communication ...
 	
 <-----disc(UUInf)----- <-----REL(UUInf)-----
 	
                         ---------RLC--------></pre>
_____
 	
1. Set up a call from UNI at SPB to SPA with user-to-user information and user-to-user service indicators.
 	
2. The Service 1 field in the UUInd is set to "request, not essential".
 	
3. Check the response "Service provided" in the ACM.
 	
Case b)
 	
<pre> SPC   SPA   SPB
 	
 <-----IAM(UUInf)----- <-----IAM(UUInf)----- UUS1 explicit request
 	
 ------ACM(UUInd)----> ------ACM(UUInd)----> UUS1 explicit response
 	
            ... ringing tone ...
 	
 ------CON(UUInf)----> ------ANM(UUInf)---->
 	
        ... check communication ...
 	
 <-----REL(UUInf)----- <-----REL(UUInf)-----
 	
                        --------RLC---------></pre>
_____
 	
1. Set up a call from UNI at SPB to SPA with user-to-user information and user-to-user service indicators.
 	
2. The Service 1 field in the UUInd is set to "request, not essential".
 	
3. Check the response "Service provided" in the ACM.

TSS UUS/NO_UUS1_E/	TP ISS_I_6_1_12	ISUP '97 references 1.1.5.2.5.2.2, 1.1.5.2.2-5.2/ITU-T Recommendation Q.737 [34]	Selection expression IntermE OR DLE	ITU-T Recommendation Q.788 [29] reference 2.15.4

Test Purpose
UUS1 explicit non-essential - implicit (no explicit) rejection sent.
To verify that the IUT can transfer/accept a call with an UUS1 explicit non-essential request, and reject the service by not providing any **user-to-user indicators** parameter in the **ACM**, **CPG**, **ANM**, **CON** or **REL**.
NOTE: The network or the user cannot support UUS1.
Pre-test conditions (in case of DLE).
Arrange the data in the IUT so that the network cannot support UUS1.
Case a)

```
 access              SPA                 SPB

 <----setup(UUInf)----  <-----IAM(UUInf)----  UUS1 explicit request

 --------alert------->  --------ACM-------->

            ... ringing tone ...

 -------connect------>  --------ANM-------->

        ... check communication ...

 <-----disc----------  <-------REL---------

                       -------RLC-------->
```
_____

1. Set up a call from UNI at SPB to SPA with user-to-user information and user-to-user service indicators.

2. The Service 1 field in the UUInd is set to "request, not essential".

3. Check that there is no user-to-user indicators parameter in the ACM.

Case b)

```
 SPC                 SPA                 SPB

 <----IAM(UUInf)-----  <-----IAM(UUInf)-----  UUS1 explicit request

 --------ACM-------->  -------ACM---------->

            ... ringing tone ...

 --------CON-------->  -------ANM---------->

        ... check communication ...

 <-------REL---------  <------REL----------

                       -------RLC---------->
```
_____

1. Set up a call from UNI at SPB to SPA with user-to-user information and user-to-user service indicators.

2. The Service 1 field in the UUInd is set to "request, not essential".

3. Check that there is no user-to-user indicators parameter in the ACM.

TSS UUS/UUS1_E/	TP ISS_V_6_1_13	ISUP '97 references 1.1.5.2.1.1.2, 1.1.5.2.2-5.1/ITU-T Recommendation Q.737 [34]	Selection expression OLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.15.3

Test Purpose
UUS1 explicit essential - request.
To verify that the IUT can successfully originate/transit a call having an UUS1 explicit essential request, by including/transferring in the **IAM** the **user-to-user information** parameter, the **user-to-user indicators** set to "request, essential" and the ISDN user part preference indicator in the **forward call indicators** set to "ISUP required all the way".
Pre-test conditions (in case of OLE).
Arrange the data in the IUT so that the user has subscribed to the UUS1 supplementary service.
Case a)
 	
` access              SPA                     SPB`
 	
` ----setup(UUInf)--->  -----IAM(UUInf)---->  UUS1 explicit request`
 	
` <---alert(UUInf)----  <----ACM(UUInf)-----  UUS1 explicit response`
 	
`            ... ringing tone ...`
 	
` <--connect(UUInf)---  <----ANM(UUInf)-----`
 	
`      ... check communication ...`
 	
` <---disc(UUInf)-----  <----REL(UUInf)-----`
 	
`                       -------RLC--------->`
 	
_____
 	
1. Set up a call from UNI at SPA to SPB with user-to-user information and user-to-user service indicators.
 	
2. Check that the Service 1 field in UUInd is set to "request, essential" and the ISDN user part preference indicator in FCI is set to "ISUP required all the way".
 	
Case b)
 	
` SPC                   SPA                     SPB`
 	
` ----IAM(UUInf)----->  -----IAM(UUInf)---->  UUS1 explicit request`
 	
` <---ACM(UUInf)------  <----ACM(UUInf)-----  UUS1 explicit response`
 	
`            ... ringing tone ...`
 	
` <---CON(UUInf)------  <----ANM(UUInf)-----`
 	
`        ... check communication ...`
 	
`  <---REL(UUInf)------ <-----REL(UUInf)----`
 	
`                       --------RLC-------->`
 	
_____
 	
1. Set up a call from UNI at SPA to SPB with user-to-user information and user-to-user service indicators.
 	
2. Check that the Service 1 field in UUInd is set to "request, essential" and the ISDN user part preference indicator in FCI is set to "ISUP required all the way".

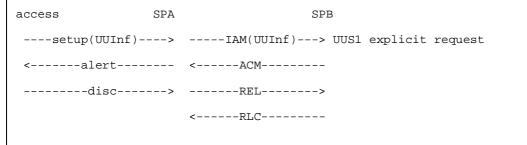| TSS UUS/UUS1_E/	TP ISS_I_6_1_14	ISUP '97 references 1.1.5.2.5.2.2, 1.1.5.2.2-5.2/ITU-T Recommendation Q.737 [34]	Selection expression OLE OR Gateway	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
UUS1 explicit essential - implicit rejection (no explicit acceptance received).
To verify that the service can be rejected if no indication (no **user-to-user indicators** parameter or the service 1 field in the **user-to-user indicators** set to "no information" or "not provided") is received in the first backward message (implicit rejection of service 1).
NOTE: The network does not understand the service 1 request. In this case the call should be released.
Pre-test conditions (in case of OLE).
Arrange the data in the IUT so that the user has subscribed to the UUS1 supplementary service.
Case a)
 	
 access   SPA   SPB
 	
  ----setup(UUInf)----> -----IAM(UUInf)---> UUS1 explicit request
 	
  <-------alert-------- <------ACM---------
 	
  --------disc-------> -------REL------->
 	
                         <------RLC---------
_____
 	
1. Set up a call UNI at SPA to SPB with user-to-user information and user-to-user service indicators.
 	
2. Check that the Service 1 field in UUInd is set to "request, essential" and the ISDN user part preference indicator in FCI is set to "ISUP required all the way".
 	
3. The call should be released with cause #29 or #69, because the user-to-user indicators parameter in the ACM is received with "no information" about the service 1.
 	
Case b)
 	
 SPC   SPA   SPB
 	
  -----IAM(UUInf)--> -----IAM(UUInf)--> UUS1 explicit request
 	
  <------ACM-------- <------ACM--------
 	
  <------REL-------- -------REL------->
 	
  -------RLC-------> <------RLC--------
_____
 	
1. Set up a call UNI at SPA to SPB with user-to-user information and user-to-user service indicators.
 	
2. Check that the Service 1 field in UUInd is set to "request, essential" and the ISDN user part preference indicator in FCI is set to "ISUP required all the way".
 	
3. The call should be released with cause #29 or #69, because the user-to-user indicators parameter in the ACM is received with "no information" about the service 1.

TSS UUS/UUS1_E/	TP ISS_V_6_1_15	ISUP '97 references 1.1.5.2.1.1.2, 1.1.5.2.2-5.1/ITU-T Recommendation Q.737 [34]	Selection expression DLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.15.3

Test Purpose
UUS1 explicit essential - acceptance.
To verify that the IUT can successfully complete a call with an UUS1 explicit essential request having the **user-to-user indicators** parameter in the **ACM**, **CPG**, **ANM**, **CON** or **REL** set to "service provided".
Pre-test conditions (in case of DLE).
Arrange the data in the IUT so that the user has subscribed to the UUS1 supplementary service.
Case a)
 	
``
 access   SPA   SPB
 	
 <----setup(UUInf)---- <-----IAM(UUInf)------ UUS1 explicit request
 	
 -----alert(UUInf)---> ------ACM(UUInf)-----> UUS1 explicit response
 	
             ... ringing tone ...
 	
 ---connect(UUInf)---> ------ANM(UUInf)----->
 	
        ... check communication ...
 	
 <---disc(UUInf)------ <-----REL(UUInf)------
 	
                      --------RLC--------->```
_____
 	
1. Set up a call from UNI at SPB to SPA with user-to-user information and user-to-user service indicators.
 	
2. The Service 1 field in the UUInd is set to "request, essential".
 	
3. Check the response "Service provided" in the ACM.
 	
Case b)
 	
``
 SPC   SPA   SPB
 	
 <----IAM(UUInf)----- <----IAM(UUInf)----- UUS1 explicit request
 	
 -----ACM(UUInd)----> -----ACM(UUInd)----> UUS1 explicit response
 	
            ... ringing tone ...
 	
 ----CON(UUInf)-----> -----ANM(UUInf)---->
 	
        ... check communication ...
 	
 <---REL(UUInf)------ <----REL(UUInf)-----
 	
                      --------RLC-------->```
_____
 	
1. Set up a call from UNI at SPB to SPA with user-to-user information and user-to-user service indicators.
 	
2. The Service 1 field in the UUInd is set to "request, essential".
 	
3. Check the response "Service provided" in the ACM.

TSS UUS/NO_UUS1_E/	TP ISS_I_6_1_16	ISUP '97 references 1.1.5.2.5.2.2, 1.1.5.2.2-5.2/ITU-T Recommendation Q.737 [34]	Selection expression DLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.15.6, 2.15.7

Test Purpose
UUS1 explicit essential - rejection.
To verify that the service can be rejected with a **REL** having the **Cause value** 29 "facility rejected" or 69 "requested facility not implemented", either with diagnostics (specifying the name of the user-to-user indicator parameter).
NOTE: The network or the called user cannot support the service.
Case a)
 	
`access              SPA                    SPB`
 	
`<----setup(UUInf)---  <----IAM(UUInf)-----  UUS1 explicit request`
 	
`----disc----------->  -------REL--------->`
 	
`                      <------RLC----------`
 	
_____
 	
1. Set up a call from UNI at SPB to SPA with user-to-user information and user-to-user service indicators.
 	
2. The call should be released with cause #29 or #69.
 	
Case b)
 	
`SPC              SPA                     SPB`
 	
`<----IAM(UUInf)-----  <----IAM(UUInf)----  UUS1 explicit request`
 	
`---------REL------->  -------REL-------->`
 	
`<--------RLC--------  <------RLC---------`
 	
_____
 	
1. Set up a call from UNI at SPB to SPA with user-to-user information and user-to-user service indicators.
 	
2. The call should be released with cause #29.
 	
Case c)
 	
`SPC              SPA                     SPB`
 	
`<----IAM(UUInf)-----  <-----IAM(UUInf)----  UUS1 explicit request`
 	
`---------REL------->  -------REL--------->`
 	
`<--------RLC--------  <------RLC----------`
 	
_____
 	
1. Set up a call from UNI at SPB to SPA with user-to-user information and user-to-user service indicators.
 	
2. The call should be released with cause #69.				

TSS UUS/UUS1_E/	TP ISS_V_6_1_17	ISUP '97 references 1.1.6.13.2, 1.1.6.13.3/ITU-T Recommendation Q.737 [34]	Selection expression Local AND (PICS A.9/6 OR PICS A.9/8)	ITU-T Recommendation Q.788 [29] reference None
Test Purpose UUS1 interaction with UUS2 (or UUS3) - successful request. To verify that more than one UUS supplementary service may be requested at call set up. Pre-test conditions. Arrange the data in the IUT so that the user has subscribed to the UUS1 and UUS2 (or UUS3) supplementary services.				

Case a)

```
 access              SPA                 SPB

 ----setup(UUInf)--->  -----IAM(UUInf)--->  UUS1, 2 explicit request

 <---alert(UUInf)----  <----ACM(UUInf)----  UUS1, 2 explicit response

              ... ringing tone ...

-----user info------>  ------USR--------->

<----user info-------  <-----USR----------

<---connect(UUInf)---  <----ANM(UUInf)----

          ... check communication ...

<----disc(UUInf)-----  <----REL(UUInf)----

                       ------RLC--------->
```
_____

1. Set up a call from UNI at SPA to SPB with user-to-user information and user-to-user service indicators.

2. Check that the Service 1, 2 fields in UUInd are set each to "request, not essential".

3. Support of Service 2

Case b)

```
 access              SPA                 SPB

 <----setup(UUInf)----  <---IAM(UUInf)---- UUS1, 3 explicit request

 -----alert(UUInf)--->  ----ACM(UUInf)---> UUS1 explicit response

          ... ringing tone ...

------conn(UUInf)---->  ----ANM(UUInf)---> UUS3 explicit response

        ... check communication ...

<-----user info-------  <-----USR---------

------user info------>  ------USR-------->

<-----disc(UUInf)-----  <---REL(UUInf)----

                       ------RLC-------->
```
_____
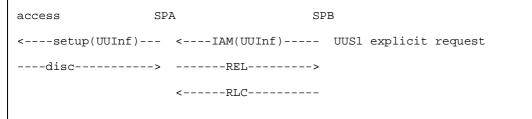
1. Set up a call from UNI at SPB to SPA with user-to-user information and user-to-user service indicators.

2. The Service 1, 3 fields in UUInd are set each to "request, not essential".

TSS UUS/UUS1_E/	TP ISS_V_6_1_17	ISUP '97 references 1.1.6.13.2, 1.1.6.13.3/ITU-T Recommendation Q.737 [34]	Selection expression Local AND (PICS A.9/6 OR PICS A.9/8)	ITU-T Recommendation Q.788 [29] reference None
3. Support of Service 3.				

TSS UUS/UUS1_E/	TP ISS_V_6_1_18	ISUP '97 references 1.1.6.13.2, 1.1.6.13.3/ITU-T Recommendation Q.737 [34]	Selection expression DLE AND (PICS A.9/6 OR PICS A.9/8)	ITU-T Recommendation Q.788 [29] reference None
Test Purpose UUS1 interaction with UUS2 (or UUS3) - unsuccessful request. To verify that the services can be rejected with a **REL** having the **Cause value** # 29 "facility rejected" or # 69 "requested facility not implemented", either with diagnostics (**user-to-user indicators** name), if more services are requested, one of them is essential and it cannot be provided. Pre-test conditions. Arrange the data in the IUT so that the user has subscribed to the UUS1 and UUS2 (or UUS3) supplementary services. access SPA SPB <--setup(UUInf)--- <-----IAM(UUInf)---- UUS1, 2, 3 explicit request -------disc------> --------REL-------> <-------RLC--------- _____ 1. Set up a call UNI at SPB to SPA with user-to-user information and user-to-user service indicators. 2. The call should be released with cause #29 or #69, because the service 2 cannot be provided.				

TSS UUS/UUS1_E/	TP ISS_V_6_1_19	ISUP '97 references 1.1.6.13.2, 1.1.6.13.3/ITU-T Recommendation Q.737 [34]	Selection expression Local AND (PICS A.9/6 OR PICS A.9/8)	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
UUS1 interaction with UUS2 (or UUS3) - independent acceptance or rejection of the services.
To verify that the IUT can successfully complete a call with an UUS1 explicit non-essential request, having the
user-to-user indicators parameter in the **ACM, CPG, ANM, CON** or **REL** set to "service provided". At the same time
the UUS2 (or UUS3) service can be rejected and the **user-to-user indicators** in the **ACM**, **CPG**, **ANM**, **CON** or **REL**
are set to "service 2 (or 3) not provided".
Pre-test conditions.
Arrange the data in the IUT so that the user has subscribed to the UUS1 and UUS2 (or UUS3) supplementary
services.
Case a)

```
 access                 SPA                 SPB

 ----setup(UUInf)--->  -----IAM(UUInf)--->  UUS1, 2, 3 explicit request

 <---alert(UUInf)----  <----ACM(UUInf)----  UUS1, 2 explicit response

            ... ringing tone ...

 -----user info----->  -------USR---------

 <----user info------  <------USR---------

 <--connect(UUInf)---  <----ANM(UUInf)----  UUS 3 explicit response

        ... check communication ...

 <----disc(UUInf)----  <----REL(UUInf)----

                       -------RLC-------->
```
_____

1. Set up a call from UNI at SPA to SPB with user-to-user information and user-to-user
service indicators.

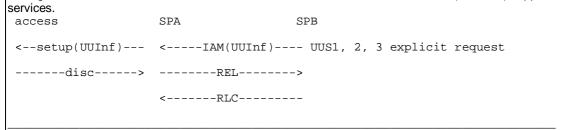2. Check that the Service 1, 2, 3 fields in UUInd are set each to "request, not
essential".

3. Support of Service 2.

Case b)

```
access                 SPA                  SPB

 <----setup(UUInf)----  <---IAM(UUInf)----  UUS1, 2, 3 explicit request

 -----alert(UUInf)--->  ----ACM(UUInf)--->  UUS1, 2 explicit response

            ... ringing tone ...

 <-----user info------  <------USR--------

 ------user info----->  -------USR------->

 ----connect(UUInf)-->  ----ANM(UUInf)--->  UUS 3 explicit response

        ... check communication ...

 <-----disc(UUInf)----  <---REL(UUInf)----

                        -------RLC------->
```
_____

TSS UUS/UUS1_E/	TP ISS_V_6_1_19	ISUP '97 references 1.1.6.13.2, 1.1.6.13.3/ITU-T Recommendation Q.737 [34]	Selection expression Local AND (PICS A.9/6 OR PICS A.9/8)	ITU-T Recommendation Q.788 [29] reference None
1. Set up a call from UNI at SPB to SPA with user-to-user information and user-to-user service indicators. 2. The Service 1, 2, 3 fields in UUInd are set each to "request, not essential". 3. Support of Service 2.				

TSS UUS/UUS1_E/	TP ISS_V_6_1_20	ISUP '97 references 1.1.6.13.3, 1.1.6.13.1/ITU-T Recommendation Q.737 [34]	Selection expression Local AND PICS A.9/8	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
UUS1 interaction with UUS3 requested after call set up.
To verify that the IUT can successfully originate/complete a call with UUS1, having requested UUS3 after call set up.
The Service 1 field in the **user-to-user indicators** in the **FAR, FAA** or **FRJ** for UUS1 is then set to "no information".
Pre-test conditions.
Arrange the data in the IUT so that the user has subscribed to the UUS1 and UUS3 supplementary services.
```
Case a)

 access                SPA                    SPB

 ----setup(UUInf)--->  -----IAM(UUInf)----->  UUS1 explicit request

 <---alert(UUInf)----  <----ACM(UUInf)------  UUS1 explicit response

            ... ringing tone ...

 <--connect(UUInf)---  <-----ANM(UUInf)-----

        ... check communication ...

 ----facility-req--->  --------FAR--------->  UUS3 request

 <---facility-ind----  <-------FAA----------  UUS3 response

 -----user info----->  --------USR----------

 <----user info------  <-------USR----------

 <----disc(UUInf)----  <-----REL(UUInf)-----

                       --------RLC--------->
```
_____

1. Set up a call from UNI at SPA to SPB with user-to-user information and user-to-user service indicators.

2. Check that the Service 1 field in UUInd is set to "request, not essential".

3. Check request of service 3 in FAR.
```
Case b)

 access                SPA                    SPB

 <---setup(UUInf)----  -----IAM(UUInf)-----  UUS1 explicit request

 ----alert(UUInf)--->  -----ACM(UUInf)---->  UUS1 explicit response

            ... ringing tone ...

 ---connect(UUInf)-->  -----ANM(UUInf)---->
```

TSS UUS/UUS1_E/	TP ISS_V_6_1_20	ISUP '97 references 1.1.6.13.3, 1.1.6.13.1/ITU-T Recommendation Q.737 [34]	Selection expression Local AND PICS A.9/8	ITU-T Recommendation Q.788 [29] reference None
``` ... check communication ... <---facility-req---- <------FAR---------- UUS3 request ----facility-ind---> -------FAA---------> UUS3 response <----user-info------ <------USR---------- -----user-info-----> -------USR---------> <----disc(UUInf)---- <----REL(UUInf)----- -------RLC---------> ``` _____ 1. Set up a call from UNI at SPB to SPA with user-to-user information and user-to-user service indicators. 2. Check that the Service 1 field in UUInd is set to "request, not essential". 3. The service 3 is requested in FAR. 4. The service 3 is provided in FAA. 4. Send/Receive user-to-user information.				

TSS UUS/UUS1_E/	TP ISS_V_6_1_21	ISUP '97 reference 1.1.6.15/ITU-T Recommendation Q.737 [34]	Selection expression Local AND PICS A.3/16 (HOLD)	ITU-T Recommendation Q.788 [29] reference None
Test Purpose UUS1 interaction with HOLD - to a held party. To verify that the IUT can successfully complete a call including a **user-to-user information** (service 1) to a held party during the clearing phase of a call. Pre-test conditions. Arrange the data in the IUT so that the user has subscribed to the UUS1 and HOLD supplementary services. ``` access SPA SPB <------setup------ <-------IAM-------- -------alert-----> --------ACM-------> ... ringing tone ... -------hold------> -------CPG-------> -------disc------> --------REL-------> UUInf present : ``` _____ 1. IAM, ACM, CPG may contain UUInf. 2. Check that UUInf is received in the REL.				

TSS UUS/UUS1_E/	TP ISS_V_6_1_22	ISUP '97 reference 1.1.6.15/ITU-T Recommendation Q.737 [34]	Selection expression Local AND PICS A.3/16 (HOLD)	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
UUS1 interaction with HOLD - from a held party.
To verify that the IUT can successfully complete a call including a **user-to-user information** (service 1) from a held party during the clearing phase of a call.
Pre-test conditions.
Arrange the data in the IUT so that the remote user has subscribed to the UUS1 and HOLD supplementary services.

```
 access            SPA              SPB

 <------setup------ <-------IAM--------

 -------alert-----> -------ACM------->

          ... ringing tone ...

 -------hold------> --------CPG------->

 <------disc------- <-------REL-------  UUInf present

                    -------RLC------->
_____
```

1. IAM, ACM, CPG may contain UUInf.

2. Send UUInf in the REL.

TSS UUS/UUS1_E/	TP ISS_V_6_1_23	ISUP '97 reference 3.6.13/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE AND PICS A.3/18	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
New UUS1 requested in CCBS recall.
To verify that the IUT does not store any user-to-user information contained in the original call. The CCBS call (IAM) sent by the IUT should not contain any user-to-user information if no new user-to-user information is provided from the served user in response to the CCBS recall.
Pre-test conditions.
Arrange the data in the IUT so that the user has subscribed to the UUS1 and CCBS supplementary services.

```
 access               SPA                 SPB

 -------setup-------> --------IAM-------->  UUInf present

 <------disconnect--- <------REL---------

                      -------RLC-------->

           ... TCAP transaction ...

 -----CCBS recall---> --------IAM-------->  No new UUInf is sent in the CCBS recall

 :                                       CCBS call

 <------disc-------- <-------REL-------

 :

_____

1. Set up a call to busy user at SPB. The received IAM contains UUInf.

2. User at SPB is found busy. Check that the UUInf is received in the IAM.

3. Check that user at SPB becomes free by using the RemoteUserFree CCBS ASE operation.

4. Check Indication "CCBS call" in the IAM. Check that no UUInf is received in the IAM.
```

TSS UUS/UUS1_E/	TP ISS_V_6_1_24	ISUP '97 reference 3.6.13/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE AND PICS A.3/18	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
UUS1 interaction with CCBS.
To verify that the IUT is able to include user-to-user information in the CCBS call (IAM) if the served user includes user-to-user information in response to the CCBS recall.
Pre-test conditions.
Arrange the data in the IUT so that the user has subscribed to the UUS1 and CCBS supplementary services.

```
 access              SPA                    SPB

 ------setup------->  -------IAM------->

 <-----disconnect---  <------REL--------

                      -------RLC------->

                 ... TCAP transaction ...

 ----CCBS recall--->  ------IAM--------> UUInf is sent in the CCBS recall

                                         CCBS call

 <---alert(UUInf)---  <---ACM(UUInf)----

            ... ringing tone ...

 <--connect(UUInf)--  <---ANM(UUInf)----

        ... check communication ...

 <------disc--------  <------REL--------

  :
```
_____

1. Set up a call to busy user at SPB.

2. User at SPB is found busy.

3. Check that user at SPB becomes free by using the RemoteUserFree CCBS ASE operation.

4. Check Indication "CCBS call" in the IAM. Check that UUInf is received in the IAM.

7.3.6.2   User-To-User Signalling Service 2 (UUS2)

TSS UUS/UUS2/	TP ISS_V_6_2_1	ISUP '97 reference 1.2.2.1/ITU-T Recommendation Q.737 [34]	Selection expression OLE AND PICS A.9/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
32 octets user-to-user information.
To verify that the IUT can successfully initiate a call having 32 octets of **user-to-user information** in the USR messages during call set up.
Pre-test conditions.
Arrange the data in the IUT so that the user has subscribed to the UUS2 supplementary service.
 	
`access                SPA                 SPB`
 	
`-------setup------->  -------IAM-------->  UUS2 explicit request`
 	
`<------alert-------  <------ACM---------  UUS2 response`
 	
`            ... ringing tone ...`
 	
`------user info---->  -------USR-------->`
 	
`<-----user info-----  <------USR---------`
 	
`<------connect------  <------ANM---------`
 	
`      ... check communication ...`
 	
`<------disc---------  <------REL---------`
 	
`                      -------RLC------->`
 	
_____
 	
1. Set up a call from UNI at SPA to SPB with user-to-user service 2 request.
 	
2. Check that the user-to-user information field in the USR contains 32 octets.				

TSS UUS/UUS2/	TP ISS_V_6_2_2	ISUP '97 references 1.2.5.2.1.1.2, 1.2.5.2.2-5.1/ITU-T Recommendation Q.737 [34]	Selection expression OLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.16.1

Test Purpose
UUS2 explicit non-essential - request.
To verify that the IUT can successfully originate/transit a call with an UUS2 explicit non-essential request, having the
user-to-user indicators in the **IAM** set to "request, not essential".
Pre-test conditions (in case of OLE).
Arrange the data in the IUT so that the user has subscribed to the UUS2 supplementary service.
Case a)

```
 access              SPA              SPB

 -----setup---------> -------IAM-------->  UUS2 explicit request

 <-----alert---------  <------ACM---------  UUS2 response

            ... ringing tone ...

 ----user info------> -------USR------->

 <---user info-------  <------USR---------

 <-----connect-------  <------ANM--------

         ... check communication ...

 <------disc--------   <------REL---------

                       -------RLC------->


_____

1. Set up a call from UNI at SPA to SPB with user-to-user service 2 request.

2. The Service 2 field in the UUInd is set to "request, not essential".

3. Receive user-to-user information.

4. Send user-to-user information.

Case b)

 SPC              SPA              SPB

 ---------IAM-------> -------IAM------->  UUS2 explicit request

 <--------ACM-------  <------ACM-------  UUS2 response

          ... ringing tone ...

 ---------USR-------> -------USR------->

 <--------USR--------  <------USR--------

 <--------ANM--------  <------ANM-------

        ... check communication ...

 <--------REL-------  <------REL--------

 ---------RLC-------> --------RLC------>

_____

1. Set up a call from UNI at SPC to SPB with user-to-user service 2 request.

2. Check the Service 2 field in the UUInd is set to "request, not essential".
```

TSS UUS/UUS2/	TP ISS_V_6_2_2	ISUP '97 references 1.2.5.2.1.1.2, 1.2.5.2.2-5.1/ITU-T Recommendation Q.737 [34]	Selection expression OLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.16.1
3. Receive user-to-user information. 4. Send user-to-user information.				

TSS UUS/UUS2/	TP ISS_V_6_2_3	ISUP '97 references 1.2.5.2.1.1.2, 1.2.5.2.2-5.1/ITU-T Recommendation Q.737 [34]	Selection expression DLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.16.1

Test Purpose
UUS2 explicit non-essential - acceptance.
To verify that the IUT can successfully complete a call with an UUS2 explicit non-essential request, having the **user-to-user indicators** parameter in the **ACM** or **CPG** set to "service provided".
Pre-test conditions (in case of DLE).
Arrange the data in the IUT so that the user has subscribed to the UUS2 supplementary service.

```
 access                SPA                  SPB

 <------setup-------   <------IAM--------  UUS2 explicit request

 --------alert----->   -------ACM------->  UUS2 explicit response

                       (-------CPG------->  UUS2 explicit response)

         ... ringing tone ...

 <-----user info----   <------USR--------

 ------user info--->   -------USR------->

 -------connect---->   -------ANM------->

      ... check communication ...

 <------disc--------   <------REL--------

                       -------RLC------->
_____
```

1. Set up a call from UNI at SPB to SPA with user-to-user service 2 request.

2. The Service 2 field in the UUInd is set to "request, not essential".

3. Check the response "Service provided" in the ACM or in CPG.

4. Send user-to-user information.

5. Receive user-to-user information.

TSS UUS/NO_UUS2/	TP ISS_I_6_2_4	ISUP '97 references 1.2.5.2.5.2.2, 1.2.5.2.2-5.2/ITU-T Recommendation Q.737 [34]	Selection expression DLE or IntermE	ITU-T Recommendation Q.788 [29] reference 2.16.3

Test Purpose
UUS2 explicit non-essential - explicit rejection (service not provided).
To verify that the UUS2 service can be rejected and the **user-to-user indicators** in the **ACM** or **CPG** are set to
"service 2 not provided".
NOTE: The network or the user cannot support UUS2.

```
access                    SPA                       SPB

 <------setup-------    <------IAM--------  UUS2 explicit request

 -------alert------>    -------ACM------->  UUS2 explicit response

                       (-------CPG------->  UUS2 explicit response)

           ... ringing tone ...

 ------connect----->    -------ANM------>

           ... check communication ...

 <------disc--------    <------REL--------

                       -------RLC------->

_____

1. Set up a call from UNI at SPB to SPA with user-to-user service 2 request.

2. The Service 2 field in the UUInd is set to "request, not essential".

3. Check the response "Service not provided" in the ACM or in CPG.
```

TSS UUS/NO_UUS2/	TP ISS_I_6_2_5	ISUP '97 references 1.2.5.2.5.2.3, 1.2.5.2.2-5.2/ITU-T Recommendation Q.737 [34]	Selection expression DLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.16.2

Test Purpose
UUS2 explicit non-essential - implicit rejection (no indication).
To verify that the IUT can successfully complete a call with an UUS2 explicit non-essential request, if no indication is
provided in the backward direction.
NOTE: The network or the user cannot support UUS2.

```
access                    SPA                       SPB

 <------setup-------    <------IAM--------  UUS2 explicit request

 -------alert------>    -------ACM------->  UUS2 explicit response - no if

           ... ringing tone ...

 ------connect----->    -------ANM------>

           ... check communication ...

 <------disc--------    <------REL--------

                       -------RLC------->

_____

1. Set up a call from UNI at SPB to SPA with user-to-user service 2 request.

2. The Service 2 field in the UUInd is set to "request, not essential".

3. Check the response "No information" in the ACM or in CPG.
```
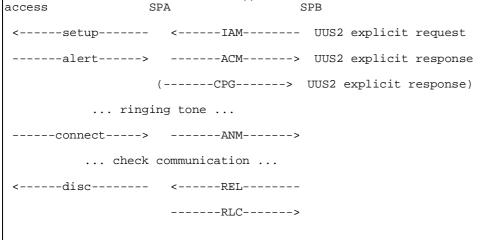
TSS UUS/UUS2/	TP ISS_V_6_2_6	ISUP '97 references 1.2.5.2.1.1.2, 1.2.5.2.2-5.1/ITU-T Recommendation Q.737 [34]	Selection expression OLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.16.1

Test Purpose
UUS2 explicit essential - request.
To verify that the IUT can successfully originate/transit a call having an UUS2 explicit essential request, having the **user-to-user indicators** set to "request, essential" and the ISDN user part preference indicator of the **forward call indicators** in the **IAM** set to "ISUP required".
Pre-test conditions (in case of OLE).
Arrange the data in the IUT so that the user has subscribed to the UUS2 supplementary service.
Case a)

```
 access              SPA                  SPB

 --------setup------>  --------IAM------> UUS2 explicit request

 <-------alert-------  <-------ACM------- UUS2 response

          ... ringing tone ...

 ------user info---->  --------USR------>

 <-----user info-----  <-------USR-------

 <-------connect-----  <-------ANM-------

         ... check communication ...

 <-------disc--------  <-------REL-------

                       --------RLC------>
```
_____

1. Set up a call from UNI at SPA to SPB with user-to-user service 2 request.

2. Check the Service 2 field in the UUInd is set to "request, essential" in the IAM.

3. Receive user-to-user information.

4. Send user-to-user information.

Case b)

```
 SPC                  SPA                  SPB

 ---------IAM------>  --------IAM------> UUS2 explicit request

 <--------ACM-------  <-------ACM------- UUS2 response

          ... ringing tone ...

 ---------USR------>  --------USR------>

 <--------USR-------  <------USR-------

 <--------ANM-------  <-------ANM-------

      ... check communication ...

 <--------REL-------  <------REL-------

  --------RLC------>  --------RLC------>
```
_____

TSS UUS/UUS2/	TP ISS_V_6_2_6	ISUP '97 references 1.2.5.2.1.1.2, 1.2.5.2.2-5.1/ITU-T Recommendation Q.737 [34]	Selection expression OLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.16.1
1. Set up a call from UNI at SPC to SPB with user-to-user service 2 request. 2. Check the Service 2 field in the UUInd is set to "request, essential" in the IAM. 3. Receive user-to-user information. 4. Send user-to-user information.					

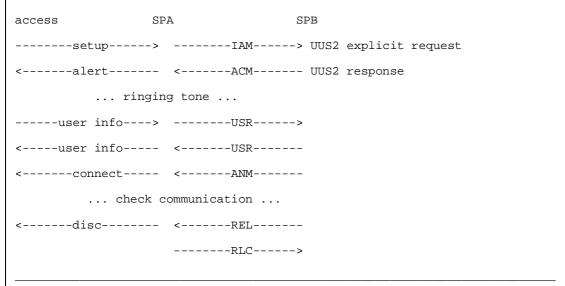| TSS UUS/UUS2/	TP ISS_V_6_2_7	ISUP '97 references 1.2.5.2.1.1.2, 1.2.5.2.2-5.1/ITU-T Recommendation Q.737 [34]	Selection expression DLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.16.1

Test Purpose
UUS2 explicit essential - acceptance.
To verify that the IUT can successfully complete a call having an UUS2 explicit essential request having the **user-to-user indicators** parameter in the **ACM** or **CPG** set to "service provided".
Pre-test conditions (in case of DLE).
Arrange the data in the IUT so that the user has subscribed to the UUS2 supplementary service.
<pre> access   SPA   SPB
 	
 <------setup-------   <-------IAM------- UUS2 explicit request
 	
 -------alert------>   --------ACM------> UUS2 explicit response
 	
                      (--------CPG------> UUS2 explicit response)
 	
         ... ringing tone ...
 	
 <----user info-----   <-------USR-------
 	
 -----user info---->   --------USR------>
 	
 ------connect----->   -------ANM------>
 	
       ... check communication ...
 	
 <-----disc---------   <-------REL-------
 	
                       -------RLC------>
_____</pre>
1. Set up a call from UNI at SPB to SPA with user-to-user service 2 request.
 	
2. The Service 2 field in the UUInd is set to "request, essential".
 	
3. Check the response "Service provided" in the ACM or CPG.
 	
4. Send user-to-user information.
 	
5. Receive user-to-user information.					

TSS UUS/NO_UUS2/	TP ISS_I_6_2_8	ISUP '97 references 1.2.5.2.5.2.1, 1.2.5.2.2-5.2/ITU-T Recommendation Q.737 [34]	Selection expression DLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.16.4, 2.16.5

Test Purpose

UUS2 explicit essential - rejection.

To verify that the service can be rejected with a **REL** with the **Cause value** 29 "facility rejected" or 69 "requested facility not implemented" or value 88 "incompatible destination", all with diagnostics (**user-to-user indicators** name).

```
Case a)

 access              SPA                 SPB

 <------setup------   <------IAM--------  UUS2 explicit request

 --------disc----->   -------REL------->

                      <------RLC--------
_____
```

1. Set up a call from UNI at SPB to SPA with user-to-user service 2 request.

2. The call should be released with cause #26, #69 or #88.

```
Case b)

 SPC                 SPA                 SPB

 <-------IAM-------   <-------IAM--------  UUS2 explicit request

 --------CFN------->

 <------REL-------   -------REL------->

 --------RLC------>   <-------RLC--------
_____
```

1. Set up a call from UNI at SPB to SPC with user-to-user service 2 request.

2. The call should be released with cause #26, #69 or #88.

TSS UUS/UUS2/	TP ISS_I_6_2_9	ISUP '97 references 1.2 5.2.5.2.1, 1.2.5.2.2-5.2/ITU-T Recommendation Q.737 [34]	Selection expression OLE or Interm	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
UUS2 explicit essential - implicit rejection.
To verify that the service can be rejected if no indication is received (no **user-to-user indicators** parameter) in the first backward message (implicit rejection of service 2).
NOTE: The remote network does not understand the service 2 request or the remote user cannot support UUS2.
Pre-test conditions (in case of OLE).
Arrange the data in the IUT so that the user has subscribed to the UUS2 supplementary service.
`Case a)`
 	
` access              SPA                SPB`
 	
` -------setup-----> -------IAM-------> UUS2 explicit request`
 	
`                    <------ACM--------`
 	
` <------disc------  -------REL------->`
 	
`                    <------RLC--------`
 	
_____
 	
1. Set up a call from UNI at SPA to SPB with user-to-user service 2 request.
 	
2. Check the Service 2 field in the UUInd is set to "request, essential" in the IAM.
 	
3. Call released because there is no UUInd in the ACM.
 	
`Case b)`
 	
` SPC                SPA                SPB`
 	
` -------IAM-------> -------IAM-------> UUS2 explicit request`
 	
`                    <------ACM--------`
 	
` <------REL-------- -------REL------->`
 	
` -------RLC-------> <------RLC--------`
 	
_____
 	
1. Set up a call from SPC to SPA with user-to-user service 2 request.
 	
2. Check the Service 2 field in the UUInd is set to "request, essential" in the IAM.
 	
3. Call released because there is no UUInd in the ACM.

TSS UUS/UUS2/	TP ISS_V_6_2_10	ISUP '97 reference 1.2.5.2.1.1.2/ITU-T Recommendation Q.737 [34]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Discard the user-to-user information if more than two messages received during a call set up.
To verify that the IUT discards the **user-to-user service information** in the additional message if more than two messages are received during the call set up (in each direction).
Pre-test conditions.
Arrange the data in the IUT so that the user has subscribed to the UUS2 supplementary service.

```
 access                  SPA                    SPB

 -------setup------>   -------IAM--------> UUS2 explicit request

 <-------alert------   <------ACM--------  UUS2 response

            ... ringing tone ...

 -----user info---->   -------USR-------->

 <----user info-----   <------USR---------

 -----user info---->   -------USR-------->

 <----user info-----   <------USR--------

 -----user info---->        no USR

 <-----connect------   <------ANM---------

         ... check communication ...

 <------disc--------   <------REL---------

                       -------RLC------->


_____

1. Set up a call from UNI at SPA to SPB with user-to-user service 2 request.

2. Check the Service 2 field in the UUInd is set to "request, not essential" in the
IAM.

3. Check the receipt of two USR during call set up.

4. Send user-to-user information.
```

TSS UUS/UUS2/	TP ISS_I_6_2_11	ISUP '97 references 1.2.5.2.1.1.2/ITU-T Recommendation Q.737 [34]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Pass on one of the USR received just after ANM. To verify that the IUT can successfully pass on one of the **USR** messages received just after the answer state has been reached. Pre-test conditions. Arrange the data in the IUT so that the user has subscribed to the UUS2 supplementary service. <pre> access   SPA   SPB

 -------setup------> -------IAM-------> UUS2 explicit request

 <------alert------- <------ACM-------- UUS2 response

            ... ringing tone ...

 ------user info---> -------USR------->

 <-----user info---- <------USR--------

 <------connect----- <------ANM-------

 ------user info---> -------USR------->

        ... check communication ...

 <------disc------- <------REL--------

                     -------RLC------>

_____</pre>
1. Set up a call from UNI at SPA to SPB with user-to-user service 2 request.

2. Check the Service 2 field in the UUInd is set to "request, not essential" in the IAM.

3. Check one user-to-user information during call set up.

4. Send user-to-user information.

5. Check one user-to-user information after ANM. | | | | |

TSS UUS/NO_UUS2/	TP ISS_I_6_2_12	ISUP '97 reference 1.2.5.2.2.2 table 1-2, 1.2.7/ITU-T Recommendation Q.737 [34]	Selection expression Gateway AND PICS A.9/5	ITU-T Recommendation Q.788 [29] reference 2.16.3

Test Purpose
Explicit rejection in Gateway.
To verify that the UUS2 explicit non-essential service can be rejected and the **user-to-user indicators** in the **ACM** or **CON** are set to "service 2 not provided".
NOTE: The user-to-user service is rejected because the IntermE received a **CFN** from the succeeding network (see note 2 table 1-2).

```
SPC                     SPA                     SPB

 <------IAM-------  <------IAM------ UUS2 explicit request

 -------CFN------>  -------ACM-----> UUS2 explicit response

          ... ringing tone ...

 -------CON------>  -------ANM----->

       ... check communication ...

  ------REL-------  <------REL------

                    -------RLC----->
```
_____

1. Set up a call from UNI at SPB to SPA with user-to-user service 2 request.

2. The Service 2 field in the UUInd is set to "request, not essential".

3. Check the response "Service not provided" in the ACM or CON.

TSS UUS/UUS2/	TP ISS_I_6_2_13	ISUP '97 references 1.2.2.1/ITU-T Recommendation Q.737 [34]	Selection expression DLE AND PICS A.9/7	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Deliver user-to-user information in USR after ANM. To verify that the IUT can successfully deliver the **user-to-user information** in the **USR** message to the called user after the answer state has been reached. Pre-test conditions. Arrange the data in the IUT so that the user has subscribed to the UUS2 supplementary service.				

```
 access               SPA                    SPB

 <------setup-------- <------IAM-------- UUS2 explicit request

 -------alert-------> -------ACM------->  UUS2 explicit response

          ... ringing tone ...

 <-----user info----- <------USR--------

 ------user info----> -------USR------->

 -------connect-----> -------ANM------->

 <-----user info----- <------USR--------

         ... check communication ...

 <------disc--------- <------REL--------

                      ------RLC------->

_____

1. Set up a call from UNI at SPB to SPA with user-to-user service 2 request.

2. The Service 2 field in the UUInd is set to "request, not essential".

3. Check the response "Service provided" in the ACM.

4. Send user-to-user information.

5. Receive user-to-user information.

6. Send one user-to-user information after ANM.
```

TSS UUS/UUS2/	TP ISS_V_6_2_14	ISUP '97 references 1.2.6.13.1, 1.2.6.13.3/ITU-T Recommendation Q.737 [34]	Selection expression Local AND (PICS A.9/4 OR PICS A.9/8)	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

UUS2 interaction with UUS1 (or UUS3) - unsuccessful request.

To verify that the services can be rejected with a **REL** with **Cause value** # 29 "facility rejected" or # 69 "requested facility not implemented", either with diagnostics (**user-to-user indicators** name), if more services are requested, one of them is essential and it cannot be provided.

Pre-test conditions.

Arrange the data in the IUT so that the user has subscribed to the UUS1 and UUS2 (or UUS3) supplementary services.

```
Case a)

 access               SPA                    SPB

 <----setup(UUInf)--- <----IAM(UUInf)----- UUS1, 2, 3 explicit request

 -------disc--------> --------REL-------->

                      <-------RLC---------

_____

1. Set up a call UNI at SPB to SPA with user-to-user information and user-to-user
service 2, 3 request.

2. The call should be released with cause #29 or #69, because the service 2 cannot be
provided.

Case b)

 access               SPA                    SPB

 ----setup(UUInf)---> -----IAM(UUInf)----> UUS1, 2, 3 explicit request

 <-------disc-------- <-------REL---------

                      --------RLC-------->

_____

1. Set up a call UNI at SPA to SPB with user-to-user information and user-to-user
service 2, 3 request.

2. The call should be released with cause #29 or #69, because the service 2 cannot be
provided.
```

TSS UUS/UUS2/	TP ISS_V_6_2_15	ISUP '97 references 1.2.6.13.1, 1.2.6.13.3/ITU-T Recommendation Q.737 [34]	Selection expression Local AND (PICS A.9/4 OR PICS A.9/8)	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
UUS2 interaction with UUS1 (or UUS3) - independent acceptance or rejection of the services.
To verify that the IUT can successfully complete a call with an UUS2 explicit non-essential request, having the
user-to-user indicators parameter set to "service provided" in the **ACM** or **CPG**. At the same time the UUS1
(or UUS3) service can be rejected and the **user-to-user indicators** in the **ACM**, **CPG**, **ANM**, **CON** or **REL** are set to
"service 1 (or 3) not provided".
Pre-test conditions.
Arrange the data in the IUT so that the user has subscribed to the UUS1 and UUS2 (or UUS3) supplementary
services.
Case a)

```
 access                SPA                    SPB

 ----setup(UUInf)----> -----IAM(UUInf)---> UUS1, 2, 3 explicit request

 <---alert(UUInf)----- <----ACM(UUInf)---- UUS1, 2 explicit response

               ... ringing tone ...

 -----user info------> -------USR---------

 <----user info------- <------USR---------

 <--connect(UUInf)---- <----ANM(UUInf)---- UUS 3 explicit response

         ... check communication ...

 <---disc(UUInf)------ <----REL(UUInf)----

                       -------RLC-------->
```
_____

1. Set up a call from UNI at SPA to SPB with user-to-user information and user-to-user
service 2, 3 request.

2. Check that the Service 1, 2, 3 fields in UUInd are set each to "request, not
essential".

3. Send/Receive user-to-user information (support of service 2).

Case b)

```
access                SPA                    SPB

 <----setup(UUInf)---- <----IAM(UUInf)----- UUS1, 2, 3 explicit request

 -----alert(UUInf)---> -----ACM(UUInf)----> UUS1, 2 explicit response

             ... ringing tone ...

 <-----user info------ <-------USR---------

 ------user info-----> --------USR------->

 ---connect(UUInf)---> -----ANM(UUInf)----> UUS 3 explicit response

         ... check communication ...

 <----disc(UUInf)----- <----REL(UUInf)-----

                       -------RLC-------->
```
_____

ETSI

TSS UUS/UUS2/	TP ISS_V_6_2_15	ISUP '97 references 1.2.6.13.1, 1.2.6.13.3/ITU-T Recommendation Q.737 [34]	Selection expression Local AND (PICS A.9/4 OR PICS A.9/8)	ITU-T Recommendation Q.788 [29] reference None
\<td colspan="5"\>1. Set up a call from UNI at SPB to SPA with user-to-user information and user-to-user service 2, 3 request. 2. The Service 1, 2, 3 fields in UUInd are set each to "request, not essential". 3. Send/Receive user-to-user information (support of Service 2). NOTE: Repeat the test case by setting the response of service 1 or 3 requests in CPG, ANM, REL or CON.

TSS UUS/UUS2/	TP ISS_V_6_2_16	ISUP '97 references 1.2.6.13.3, 1.2.6.13.1/ITU-T Recommendation Q.737 [34]	Selection expression Local AND PICS A.9/8	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
UUS2 interaction with UUS3 requested after call set up.
To verify that the IUT can successfully originate/complete a call with UUS2 and UUS3 service requested after call set up. The Service 2 field of the **user-to-user indicators** in the **FAR**, **FAA** or **FRJ** is then set to "no information".
Pre-test conditions.
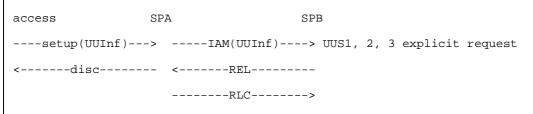Arrange the data in the IUT so that the user has subscribed to the UUS2 and UUS3 supplementary services.
```
Case a)

 access              SPA              SPB

 --------setup------>  -------IAM------> UUS2 explicit request

 <-------alert-------  <------ACM------- UUS2 explicit response

         ... ringing tone ...

 -------user info--->  -------USR-------

 <------user info----  <------USR-------

 <------connect------  <------ANM-------

      ... check communication ...

 ----facility-req--->  -------FAR------> UUS3 request

 <---facility-ind----  <------FAA------- UUS3 response

 -------user info--->  -------USR-------

 <------user info----  <------USR-------

 <-------disc--------  <------REL-------

                       -------RLC------>
_____
```
1. Set up a call from UNI at SPA to SPB with user-to-user service 2 request.

2. Check that the Service 2 fields in UUInd is set to "request, not essential".

3. Send/Receive user-to-user information (support of service 2).

4. Check request of service 3 in FAR.

5. Send/Receive user-to-user information (support of service 3).

TSS UUS/UUS2/	TP ISS_V_6_2_16	ISUP '97 references 1.2.6.13.3, 1.2.6.13.1/ITU-T Recommendation Q.737 [34]	Selection expression Local AND PICS A.9/8	ITU-T Recommendation Q.788 [29] reference None

Case b)
 	
 access   SPA   SPB
 	
 <-------setup------- <-----IAM------- UUS2 explicit request
 	
 --------alert------> ------ACM------> UUS2 explicit response
 	
         ... ringing tone ...
 	
 <-----user info----- <-----USR-------
 	
 ------user info---> ------USR------>
 	
 -------connect-----> ------ANM------>
 	
        ... check communication ...
 	
 <---facility-req---- <-----FAR------- UUS3 request
 	
 ----facility-ind---> ------FAA------> UUS3 response
 	
 <-----user info----- <-----USR-------
 	
 ------user info---> ------USR------>
 	
 <-------disc-------- <-----REL-------
 	
                     ------RLC------>
 	
_____
 	
1. Set up a call from UNI at SPB to SPA with user-to-user service 2 request.
 	
2. The Service 2 fields in UUInd is set to "request, not essential".
 	
3. Send/Receive user-to-user information (support of service 2)
 	
4. The service 3 is requested in FAR.
 	
5. Check service 3 is provided in FAA.
 	
6. Send/Receive user-to-user information (support of service 3)				

7.3.6.3 User-To-User Signalling Service 3 (UUS3)

TSS UUS/UUS3/	TP ISS_V_6_3_1	ISUP '97 reference 1.3.2.1/ITU-T Recommendation Q.737 [34]	Selection expression OLE AND PICS A.9/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
32 octets user-to-user information.
To verify that the IUT can successfully initiate a call having 32 octets of **user-to-user information** in each message.
Pre-test conditions.
Arrange the data in the IUT so that the user has subscribed to the UUS3 supplementary service.
 	
`access            SPA                  SPB`
 	
`-------setup------>  -------IAM-------> UUS3 explicit request`
 	
`<------alert-------  <------ACM--------`
 	
`         ... ringing tone ...`
 	
`<-----connect------  <------ANM-------- UUS3 response`
 	
`        ... check communication ...`
 	
`------user info--->  -------USR------->`
 	
`<-----user info----  <------USR--------`
 	
`<-------disc-------  <------REL--------`
 	
`                     -------RLC------->`
 	
_____
 	
1. Set up a call from UNI at SPA to SPB with user-to-user service 3 request.
 	
2. Check that the user-to-user information field in the USR contains 32 octets.				

TSS UUS/UUS3/	TP ISS_V_6_3_2	ISUP '97 reference 1.3.2.1/ITU-T Recommendation Q.737 [34]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Rejection of UUS3 after call set up, if rejected at call set up.
To verify that the IUT can reject an UUS3 request after call set up, if it has been rejected at the call set up.
Pre-test conditions.
Arrange the data in the IUT so that the user has subscribed to the UUS3 supplementary service.

```
 access                 SPA                    SPB

 --------setup------->  -------IAM------> UUS3 explicit request

 <-------alert--------  <------ACM-------

             ... ringing tone ...

 <------connect------   <------ANM------- UUS3 response

         ... check communication ...

 ----facility-req---->  -------FAR------>

 <--facility-reject---  <------FRJ-------

         ... check communication ...

 <------disc----------  <------REL-------

                        -------RLC------>


_____

1. Set up a call from UNI at SPA to SPB with user-to-user service 3 request.
```

TSS UUS/UUS3/	TP ISS_V_6_3_3	ISUP '97 reference 1.3.5.2.1.1.2, 1.3.5.2.2-5.1/ITU-T Recommendation Q.737 [34]	Selection expression OLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.17.1

Test Purpose
UUS3 explicit non-essential - request.
To verify that the IUT can successfully originate/transit a call with an UUS3 explicit non-essential request, having the **user-to-user indicators** in the **IAM** set to "request, not essential".
Pre-test conditions (in case of OLE).
Arrange the data in the IUT so that the user has subscribed to the UUS3 supplementary service.
Case a)

```
 access              SPA              SPB

 --------setup-------> --------IAM-------> UUS3 explicit request

 <-------alert-------- <-------ACM--------

        ... ringing tone ...

 <-------connect------ <-------ANM-------- UUS3 response

      ... check communication ...

 -------user info----> --------USR------->

 <------user info----- <-------USR--------

 <-------disc--------- <-------REL--------

                       --------RLC------->
```
_____
1. Set up a call from UNI at SPA to SPB with user-to-user service 3 request.

Case b)
```
 SPC              SPA              SPB

 ---------IAM-------> --------IAM-------> UUS3 explicit request

 <--------ACM-------- <-------ACM--------

           ... ringing tone ...

 <--------ANM-------- <-------ANM-------- UUS3 response

         ... check communication ...

 ---------USR-------> --------USR-------->

 <--------USR-------- <-------USR---------

 <--------REL-------- <-------REL---------

 ---------RLC-------> --------RLC-------->
```
_____
1. Set up a call from UNI at SPC to SPB with user-to-user service 3 request.

TSS UUS/UUS3/	TP ISS_V_6_3_4	ISUP '97 references 1.3.5.2.1.1.2, 1.3.5.2.2-5.1/ITU-T Recommendation Q.737 [34]	Selection expression DLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.17.1

Test Purpose
UUS3 explicit non-essential - acceptance.
To verify that the IUT can successfully complete a call with an UUS3 explicit non-essential request, having the Service 3 field in the **user-to-user indicators** parameter in the **ANM** or **CON** set to "service provided".
Pre-test conditions (in case of DLE).
Arrange the data in the IUT so that the user has subscribed to the UUS3 supplementary service.
<pre>access   SPA   SPB
 	
 <-------setup--------- <------IAM-------- UUS3 explicit request
 	
 --------alert--------> -------ACM------->
 	
             ... ringing tone ...
 	
 -------connect------> -------ANM-------> UUS3 response
 	
         ... check communication ...
 	
 <------user info------ <------USR--------
 	
 -------user info-----> -------USR------->
 	
         ... check communication ...
 	
 <-------disc---------- <------REL--------
 	
                        -------RLC------->
 	
 <-------setup-------- <-------IAM-------- UUS3 explicit request
 	
 -------connect------> --------CON-------> UUS3 response
 	
           ... check communication ...
 	
 <----user info------- <-------USR--------
 	
 -----user info------> --------USR------->
 	
           ... check communication ...
 	
 <-------disc--------- <-------REL-------
 	
                        -------RLC-------> </pre>_____
1. Set up a call from UNI at SPB to SPA with user-to-user service 3 request.				

TSS UUS/NO_UUS3/	TP ISS_I_6_3_5	ISUP '97 references 1.3.5.2.5.2.3, 1.3.5.2.2-5.2/ITU-T Recommendation Q.737 [34]	Selection expression DLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.17.2
Test Purpose UUS3 explicit non-essential - implicit rejection (no indication). To verify that the IUT can successfully complete a call with an UUS3 explicit non-essential request, if no indication is provided in the backward direction. NOTE: The network or the user cannot support UUS3. Case a)<pre>access   SPA   SPB

<--------setup------ <------IAM------- UUS3 explicit request

---------alert------> -------ACM------>

          ... ringing tone ...

--------connect-----> -------ANM------> UUS3 response (no indication)

        ... check communication ...

<--------disc-------- <------REL-------

                       -------RLC------>

<--------setup------- <------IAM------- UUS3 explicit request

--------connect-----> -------CON------> UUS3 response (no indication)

        ... check communication ... ...

<--------disc-------- <------REL-------

                       -------RLC------></pre>_____
1. Set up a call from UNI at SPB to SPA with user-to-user service 3 request.
Case b)<pre>SPC   SPA   SPB

<-------IAM--------- <------IAM-------- UUS3 explicit request

--------ACM--------> -------ACM------->

          ... ringing tone ...

--------ANM--------> -------ANM-------> UUS3 response (no indication)

        ... check communication ...

<-------REL--------- <------REL--------

--------RLC--------> -------RLC------->

<-------IAM--------- <------IAM------- UUS3 explicit request

--------CON--------> -------CON------> UUS3 response (no indication)

        ... check communication ...

<-------REL--------- <------REL--------</pre> | | | | |

TSS UUS/NO_UUS3/	TP ISS_I_6_3_5	ISUP '97 references 1.3.5.2.5.2.3, 1.3.5.2.2-5.2/ITU-T Recommendation Q.737 [34]	Selection expression DLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.17.2
| ```
--------RLC-------->  -------RLC------->
``` _____ 1. Set up a call from UNI at SPB to SPA with user-to-user service 3 request. | | | | |

TSS UUS/NO_UUS3/	TP ISS_I_6_3_6	ISUP '97 references 1.3.5.2.5.2.2, 1.3.5.2.2-5.2/ITU-T Recommendation Q.737 [34]	Selection expression DLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.17.3

Test Purpose
UUS3 explicit non-essential - explicit rejection (service not provided).
To verify that the UUS3 service can be rejected and the Service 3 field in the **user-to-user indicators** in the **ANM** or **CON** are set to "service 3 not provided".
NOTE: The network or the called user cannot support UUS3.
Case a)

```
 access                 SPA                 SPB

 <--------setup-------  <------IAM------- UUS3 explicit request

 ---------alert------>  -------ACM------>

             ... ringing tone ...

 --------connect----->  -------ANM------> UUS3 response (serv. not provided)

         ... check communication ...

 <--------disc--------  <------REL-------

                        -------RLC------>


 <--------setup-------  <------IAM------- UUS3 explicit request

 --------connect----->  -------CON------> UUS3 response (serv. not provided)

         ... check communication ... ...

 <--------disc--------  <------REL-------

                        -------RLC------>
```
_____
1. Set up a call from UNI at SPB to SPA with user-to-user service 3 request.

Case b)

```
 SPC                    SPA                 SPB

 <-------IAM---------  <------IAM------- UUS3 explicit request

 --------ACM-------->  -------ACM------>

             ... ringing tone ...

 --------ANM-------->  -------ANM------> UUS3 response (serv. not provided)

         ... check communication ...
```

TSS UUS/NO_UUS3/	TP ISS_I_6_3_6	ISUP '97 references 1.3.5.2.5.2.2, 1.3.5.2.2-5.2/ITU-T Recommendation Q.737 [34]	Selection expression DLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.17.3

```
 <-------REL---------  <------REL--------

 --------RLC--------->  -------RLC------->



 <-------IAM---------  <------IAM-------- UUS3 explicit request

 --------CON--------->  -------CON-------> UUS3 response (serv. not provided)

        ... check communication ...

 <-------REL---------  <------REL--------

 -------RLC--------->  -------RLC------->

_____

1. Set up a call from UNI at SPB to SPA with user-to-user service 3 request.
```

TSS UUS/UUS3/	TP ISS_V_6_3_7	ISUP '97 references 1.3.5.2.1.1.2, 1.3.5.2.2-5.1/ITU-T Recommendation Q.737 [34]	Selection expression OLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.17.1

Test Purpose
UUS3 explicit essential - request.
To verify that the IUT can successfully originate/transit a call with an UUS3 explicit essential request, having in the **IAM** the **user-to-user indicators** set to "request, essential" and the ISDN user part preference indicator in the **forward call indicators** set to "ISUP required all the way".
Pre-test conditions (in case of OLE).
Arrange the data in the IUT so that the user has subscribed to the UUS3 supplementary service.

```
Case a)

 access             SPA                 SPB

 -------setup------->  -------IAM------> UUS3 explicit request

 <------alert--------  <------ACM-------

         ... ringing tone ...

 <-----connect-------  <------ANM------- UUS3 response

        ... check communication ...

 -----user info----->  -------USR------>

 <----user info------  <------USR-------

 <------disc--------  <------REL-------

                      -------RLC------>

_____

1. Set up a call from UNI at SPA to SPB with user-to-user service 3 request.

2. Send/Receive user-to-user information.

Case b)

 SPC             SPA                 SPB
```

```
--------IAM-------->  -------IAM-------> UUS3 explicit request

<-------ACM-------   <------ACM------- UUS3 response

         ... ringing tone ...

<-------ANM-------   <------ANM-------

      ... check communication ...

--------USR-------->  -------USR------->

<-------USR---------  <------USR-------

<-------REL---------  <------REL-------

--------RLC-------->  -------RLC------>
```
_____
```
1. Set up a call from UNI at SPA to SPB with user-to-user service 3 request.

2. Send/Receive user-to-user information.
```

TSS UUS/UUS3/	TP ISS_V_6_3_8	ISUP '97 references 1.3.5.2.1.1.2, 1.3.5.2.2-5.1/ITU-T Recommendation Q.737 [34]	Selection expression DLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.17.1

Test Purpose
UUS3 explicit essential - acceptance.
To verify that the IUT can successfully complete a call with an UUS3 explicit essential request having in the **ANM** or
CON the Service 3 field of the **user-to-user indicators** parameter set to "service provided".
Pre-test conditions (in case of DLE).
Arrange the data in the IUT so that the user has subscribed to the UUS3 supplementary service.

```
 access                 SPA                 SPB

 <-------setup--------  <------IAM------- UUS3 explicit request

 --------alert------->  -------ACM------>

           ... ringing tone ...

 -------connect----->  -------ANM------> UUS3 response

         ... check communication ...

 <-----user info------  <------USR-------

 ------user info----->  -------USR------>

         ... check communication ...

 <-------disc---------  <------REL-------

                        -------RLC------>


 <-------setup--------  <------IAM------- UUS3 explicit request

 -------connect----->  -------CON------> UUS3 response

        ... check communication ...

 <-----user info------  <------USR-------

 ------user info----->  -------USR------>

        ... check communication ...
```

TSS UUS/UUS3/	TP ISS_V_6_3_8	ISUP '97 references 1.3.5.2.1.1.2, 1.3.5.2.2-5.1/ITU-T Recommendation Q.737 [34]	Selection expression DLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.17.1

<pre><-------disc---------   <------REL-------
 	
                       -------RLC------></pre>				

1. Set up a call from UNI at SPB to SPA with user-to-user service 3 request.				

TSS UUS/NO_UUS3/	TP ISS_I_6_3_9	ISUP '97 references 1.3.5.2.5.2.2, 1.3.5.2.2-5.2/ITU-T Recommendation Q.737 [34]	Selection expression DLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.17.4

Test Purpose
UUS3 explicit essential - explicit rejection.
To verify that the service can be rejected with a **REL** having the **Cause value** #29 "facility rejected", #69 "requested facility not implemented", either with diagnostics (**user-to-user indicators** name).
NOTE: The network or the called user cannot support the service.
<pre>Case a)
 	
 access   SPA   SPB
 	
 <------setup-------- <------IAM------- UUS3 explicit request
 	
 -------disc---------> -------REL------>
 	
                       <------RLC-------</pre>
1. Set up a call UNI at SPB to SPA with user-to-user service 3 request.
2. The call should be released with cause #29 or #69.
<pre>Case b)
 	
 SPC   SPA   SPB
 	
 <------IAM--------   <------IAM--------- UUS3 explicit request
 	
                       -------CFN-------->
 	
 <------REL--------   -------REL-------->
 	
 -------RLC--------> <------RLC---------</pre>
1. Set up a call UNI at SPB to SPC with user-to-user service 3 request.
2. The call should be released with cause #29 or #69.				

TSS UUS/UUS3/	TP ISS_V_6_3_10	ISUP '97 references 1.3.5.2.1.1.2, 1.3.5.2.2-5.1/ITU-T Recommendation Q.737 [34]	Selection expression OLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.17.6

Test Purpose
UUS3 explicit non-essential - request during the active phase of the call.
To verify that the IUT can successfully generate/transit an UUS3 explicit non-essential request, with a **FAR** having the **facility indicator** parameter set to "user-to-user service" and the Service 3 field in the **user-to-user indicators** set to "request, not essential".
Pre-test conditions (in case of OLE).
Arrange the data in the IUT so that the user has subscribed to the UUS3 supplementary service.
Case a)
 	
``
 access   SPA   SPB
 	
 -------setup------> -------IAM-------->\
 	
 <------alert------- <------ACM--------\
 	
          ... ringing tone ...
 	
 <-----connect------ <------ANM--------\
 	
       ... check communication ...
 	
 ---facility-req---> -------FAR-------> UUS3 explicit request
 	
 <-facility-reject-- <------FRJ-------- UUS3 response
 	
        ... check communication ...
 	
<-------disc-------- <------REL--------\
 	
                      -------RLC------->\
``
_____
1. Service 3 request during the active phase.
 	
Case b)
 	
``
 SPC   SPA   SPB
 	
 -------IAM------> ------IAM------->\
 	
 <------ACM------- <-----ACM--------\
 	
          ... ringing tone ...
 	
 <------ANM------- <-----ANM--------\
 	
       ... check communication ...
 	
 -------FAR------> ------FAR-------> UUS3 explicit request
 	
 <------FRJ------- <-----FRJ-------- UUS3 response
 	
       ... check communication ...
 	
 <------REL------- <-----REL--------\
 	
 -------RLC------> ------RLC------->\
``
_____
1. Service 3 request during the active phase.

TSS UUS/UUS3/	TP ISS_V_6_3_11	ISUP '97 references 1.3.5.2.1.1.2, 1.3.5.2.2-5.1/ITU-T Recommendation Q.737 [34]	Selection expression DLE OR IntermE	ITU-T Recommendation Q.788 [29] reference 2.17.5

Test Purpose
UUS3 explicit non-essential - acceptance during call.
To verify that the IUT can successfully reply to an UUS3 explicit non-essential request with a **FAA** having the **facility indicator** parameter set to "user-to-user service" and the Service 3 field in the **user-to-user indicators** parameter set to "service provided".
Pre-test conditions (in case of DLE).
Arrange the data in the IUT so that the user has subscribed to the UUS3 supplementary service.

```
 access              SPA              SPB

 <------setup-------  <-----IAM-------

 -------alert------>  ------ACM----->

          ... ringing tone ...

 ------connect----->  ------ANM----->

      ... check communication ...

 <--facility-req----  <-----FAR------- UUS3 request

 ---facility-ind--->  ------FAA------> UUS3 response

 <----user info-----  <-----USR-------

 -----user info---->  ------USR------>

 <------disc--------  <-----REL-------

                      ------RLC------>
_____

1. The service 3 is requested in FAR.

2. Check service 3 is provided in FAA.

3. Send/Receive user-to-user information (support of service 3)
```

TSS UUS/UUS3/	TP ISS_I_6_3_12	ISUP '97 reference table 1-3/ITU-T Recommendation Q.737 [34]	Selection expression Gateway AND PICS A.9/5	ITU-T Recommendation Q.788 [29] reference 2.17.3

Test Purpose

UUS3 explicit non-essential - explicit rejection in the Gateway

To verify that the UUS3 explicit non-essential service can be rejected and the Service 3 field in the **user-to-user indicators** in the **ACM** or **CON** are set to "service 3 not provided".

NOTE: The user-to-user service is rejected because the Gateway received e.g. a **CFN** from the succeeding network (see note 2 table 1-3).

```
 SPC                    SPA              SPB

 <-----IAM-------   <-----IAM------   UUS3 explicit request

 ------CFN------>

 ------ACM------>   ------ACM----->   UUS3 explicit response (serv.not provided)

         ... ringing tone ...

 ------ANM------>   ------ANM---->

      ... check communication ...

 <-----REL-------   <-----REL------

 ------RLC------>   ------RLC----->



 <-----IAM-------   <-----IAM------   UUS3 explicit request

 ------CFN------>

 ------CON------>   ------CON----->   UUS3 explicit response (serv.not provided)

         ... check communication ...

 <-----REL-------   <-----REL------

 ------RLC------>   ------RLC----->
```
_____

1. Set up a call from UNI at SPB to SPC with user-to-user service 3 request.

2. The Service 3 field in the UUInd is set to "request, not essential".

3. Check the response "Service not provided" in the ACM or CON.

TSS UUS/UUS3/	TP ISS_I_6_3_13	ISUP '97 reference 1.3.5.2.5.2.2/ITU-T Recommendation Q.737 [34]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose UUS3 explicit non-essential - implicit rejection during call (no indication - discard FAA or FRJ). To verify that the IUT can successfully complete a call with an UUS3 request in the **FAR**, if the **FAA** or **FRJ** are discarded. NOTE: The FAA or FRJ are discarded e.g. because the FAR contains unrecognized or inconsistent information.				

```
 SPC                    SPA                   SPB

 -------IAM------>  -------IAM------>

 <------ACM-------  <------ACM-------

         ... ringing tone ...

 <------ANM-------  <------ANM-------

      ... check communication ...

 <------FAR-------  <------FAR------- UUS3 explicit request

          (no FAA or FRJ)

      ... check communication ...

 <------REL-------  <------REL-------

 -------RLC------>  -------RLC------>


_____

1. Service 3 request during the active phase.
```

TSS UUS/UUS3/	TP ISS_I_6_3_14	ISUP '97 reference 1.3.5.2.5.2.2/ITU-T Recommendation Q.737 [34]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
UUS3 explicit non-essential - explicit rejection during call (service not provided - in FRJ).
To verify that the UUS3 explicit non-essential service can be rejected during the active phase of the call and the Service 3 field in the **user-to-user indicators** in the **FRJ** are set to "service 3 not provided".
 	
``
 SPC   SPA   SPB
 	
 -------IAM------> -------IAM------>
 	
 <------ACM------- <------ACM-------
 	
        ... ringing tone ...
 	
 <------ANM------- <------ANM-------
 	
       ... check communication ...
 	
 <------FAR------- <------FAR------- UUS3 explicit request
 	
 -------FRJ------> -------FRJ------> UUS3 response (serv. not provided)
 	
       ... check communication ...
 	
 <------REL------- <------REL-------
 	
 -------RLC------> -------RLC------>
``
_____
1. Service 3 request during the active phase.

TSS UUS/UUS3/	TP ISS_V_6_3_15	ISUP '97 references 1.3.6.13.1, 1.3.6.13.2/ITU-T Recommendation Q.737 [34]	Selection expression Local AND (PICS A.9/4 OR PICS A.9/6)	ITU-T Recommendation Q.788 [29] reference None
Test Purpose UUS3 interaction with UUS1 (or UUS2) - unsuccessful request. To verify that the services can be rejected with a **REL** having the **Cause value** # 29 "facility rejected" or # 69 "requested facility not implemented", either with diagnostics (**user-to-user indicators** name). If more services are requested one of them essential which cannot be provided. Pre-test conditions. Arrange the data in the IUT so that the user has subscribed to the UUS3 and UUS1 or (UUS2) supplementary services. See ISS_V_6_2_14.

TSS UUS/UUS3/	TP ISS_V_6_3_16	ISUP '97 references 1.3.6.13.1, 1.3.6.13.2/ITU-T Recommendation Q.737 [34]	Selection expression Local AND (PICS A.9/4 OR PICS A.9/6)	ITU-T Recommendation Q.788 [29] reference None
Test Purpose UUS3 interaction with UUS1 (or UUS2) - Independent acceptance or rejection of the services. To verify that the IUT can successfully complete a call with an UUS3 explicit non-essential request, having the Service 3 field in the **user-to-user indicators** parameter set to "service provided" in **ANM** or **CON**. At the same time the UUS1 (or UUS2) service can be rejected and the **user-to-user indicators** in the **ACM**, **CPG**, **ANM**, **CON** or **REL** are set to "service 1 (or 2) not provided". Pre-test conditions. Arrange the data in the IUT so that the user has subscribed to the UUS3 and UUS1 (or UUS2) supplementary services. See test case ISS_V_6_2_15.

TSS UUS/UUS3/	TP ISS_V_6_3_17	ISUP '97 reference 1.3.6.18/ITU-T Recommendation Q.737 [34]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
UUS3 interaction with TP - FAR sent while call is suspended.
To verify that if the **FAR** is received while a call is suspended, the IUT returns a **FRJ** with the Service 3 field in the **user-to-user indicators** set to "Service 3 not provided".
Pre-test conditions.
Arrange the data in the IUT so that the user has subscribed to the UUS3 and TP supplementary services.

```
 access              SPA               SPB

 -------setup------>  ------IAM------>

 <------alert------>  <-----ACM-------

             ... ringing tone ...

 <-----connect------  <-----ANM-------

         ... check communication ...

 <----tp-suspend----  <-----SUS-------

                      <-----FAR-------  UUS3 explicit request

                      ------FRJ------>  UUS3 response (serv. not provided)

         ... check communication ...

 <-------disc-------  <-----REL-------

                      ------RLC------>

 _____

1. Set up a call from UNI at SPA to SPB which has been suspended.
```

7.3.7   Closed user group (CUG)

TSS CUG/	TP ISS_V_7_1	ISUP '97 reference 1.5.2.1.1 i) a)/ITU-T Recommendation Q.735 [35]	Selection expression OLE	ITU-T Recommendation Q.788 [29] references 2.4.4, 2.4.5

Test Purpose
CUG without outgoing access in IAM.
To verify that the IUT can successfully establish a CUG call by including the **CUG interlock code** together with an indication of "CUG call, outgoing access not allowed" in the **optional forward call indicators** in the **IAM**. The ISUP preference indicator of the **forward call indicators** in the **IAM** should be set to "ISUP required all the way".
Pre-test conditions.
Arrange the data in the IUT such that the calling party subscribes to the CUG without outgoing access supplementary service.

```
 access              SPA                    SPB

 -------setup------> -----IAM (CUG)---->

(-OA) - with outgoing access not allowed

   :

 _____

1. Set up a CUG call from the access specifying a CUG interlock code. The CUG call is
with outgoing access not allowed.
```

TSS CUG/	TP ISS_V_7_1	ISUP '97 reference 1.5.2.1.1 i) a)/ITU-T Recommendation Q.735 [35]	Selection expression OLE	ITU-T Recommendation Q.788 [29] references 2.4.4, 2.4.5
2. CUG call indicator set to "CUG call, outgoing access not allowed" and IPI set to "ISUP required all the way".				

TSS CUG/	TP ISS_V_7_2	ISUP '97 references 1.5.2.2.1, 1.5.2.3.1, 1.5.2.4.1/ITU-T Recommendation Q.735 [35]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] references 2.4.4, 2.4.5

Test Purpose

Transfer of information related to CUG.

To verify that the IUT can successfully transfer all information related to a CUG call, i.e. **CUG interlock code** together with an indication of "CUG call, outgoing access not allowed" in the **optional forward call indicators** in the **IAM**.

```
SPC                     SPA                     SPB

 -----IAM (CUG)---->  -----IAM (CUG)----> (-OA)

   :

_____

1. Initiate a CUG call set up from SPC specifying a CUG interlock code. The CUG call is
with outgoing access not allowed.

2. CUG call indicator set to "CUG call, outgoing access not allowed".
```

TSS CUG/	TP ISS_V_7_3	ISUP '97 references 1.5.2.3.1, 1.5.2.4.1/ITU-T Recommendation Q.735 [35]	Selection expression Gateway AND PICS A.10/3	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Conversion of the interlock code.

To verify that the IUT can successfully convert a national into an international **CUG interlock code** (or vice versa) and that the indication "CUG call, outgoing access not allowed" in the **optional forward call indicators** in the **IAM** is passed on transparently.

```
SPC                     SPA                      SPB

-----IAM (CUG)----> -----IAM (CUG)----> (-OA)

   :

_____

1. Initiate a CUG call set up from SPC specifying a CUG interlock code. The CUG call is
with outgoing access not allowed.

2. CUG call indicator set to "CUG call, outgoing access not allowed" and international
CUGIC for OutIE.

3. CUG call indicator set to "CUG call, outgoing access not allowed" and national CUG
interlock code for IncIE.
```

TSS NO_CUG/	TP ISS_I_7_4	ISUP '97 references 1.5.2.4.2/ITU-T Recommendation Q.735 [35], table 1-1/ITU-T Recommendation Q.735 [35]	Selection expression IncIE AND NOT PICS A.3/7 AND PICS A.8/2	ITU-T Recommendation Q.788 [29] reference 2.4.9

Test Purpose
CUG call without outgoing access, action at the gateway with network without CUG capability.
To verify that the IUT rejects a CUG call if the contents of the CUG call indicator is set to "CUG call, outgoing access not allowed" in **optional forward call indicators** in **IAM** and the succeeding national network does not support CUG. The IUT should respond with a **REL** with cause #29 "Facility rejected" and include the parameter name in the diagnostics field.
Pre-test conditions.
A route to a network without CUG capability must be available in the IUT.

```
                        SPA                 SPB

                  -------IAM------->

          (-OA) with outgoing access not allowed

                  <------REL-------

                  -------RLC------->

_____

1. Initiate a CUG call set up from SPC specifying a CUG interlock code. The CUG call is
with outgoing access not allowed.

2. Wait for some event, nothing should happen.

3. After timer expiry get the verdict.
```

TSS NO_CUG/	TP ISS_I_7_5	ISUP '97 references 1.5.2.4.2/ITU-T Recommendation Q.735 [35], table 1-1/ITU-T Recommendation Q.735 [35]	Selection expression IncIE AND NOT PICS A.3/7 AND PICS A.8/2	ITU-T Recommendation Q.788 [29] reference 2.4.3

Test Purpose
CUG call with outgoing access, action at the gateway interworking with network without CUG capability.
To verify that the IUT proceeds with normal call setup if the contents of the CUG call indicator is received as "CUG call, outgoing access allowed" in **optional forward call indicators** in **IAM** and the succeeding national network does not support CUG.
Pre-test conditions.
A route to a network without CUG capability must be available in the IUT.

```
SPC                     SPA                 SPB

 -----IAM (CUG)----> --------IAM------->

(+OA) with outgoing access allowed

   :

_____

1. Initiate a CUG call set up from SPC specifying a CUG interlock code. The CUG call is
with outgoing access allowed.
```

TSS CUG/	TP ISS_V_7_6	ISUP '97 references 1.5.2.5.1, table 1-2/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.4.4

Test Purpose
CUG call without outgoing access; class of called user: CUG without IA, no ICB activated.
To verify that the IUT can successfully establish a CUG call.
Pre-test conditions.
Arrange the data in the IUT such that the called party subscribes to CUG and no incoming calls are barred.

```
 access              SPA                SPB

 <------setup------- <----IAM (CUG)-----

                     (-OA,-ICB) no incoming calls barred

  :

_____

1. Assist a CUG call set up to the access.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the
way" and CUG call indicator in the OFCI set to "CUG call, outgoing access not allowed".
```

TSS CUG/	TP ISS_V_7_7	ISUP '97 references 1.5.2.5.1, table 1-2/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.4.1

Test Purpose
CUG call with outgoing access; class of called user: CUG without IA, no ICB activated.
To verify that the IUT can successfully establish a CUG call.
Pre-test conditions.
Arrange the data in the IUT such that the called party subscribes to CUG and no incoming calls are barred.

```
 access              SPA                SPB

 <------setup------- <----IAM (CUG)-----

                     (+OA,-ICB) no incoming calls barred

  :

_____

1. Assist a CUG call set up to the access.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the
way" and CUG call indicator in the OFCI set to "CUG call, outgoing access allowed".
```

TSS CUG/	TP ISS_V_7_8	ISUP '97 references 1.5.2.5.1, table 1-2/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.4.8

Test Purpose

CUG call without outgoing access; class of called user: CUG without IA, ICB activated.

To verify that the IUT rejects the CUG call with cause # 55 "Incoming calls barred within CUG" in the **REL**.

Pre-test conditions.

Arrange the data in the IUT such that the called party subscribes to CUG and the incoming calls are barred (ICB).

```
 access              SPA                 SPB

                        <----IAM (CUG)-----

                         (-OA,+ICB) incoming calls barred

                        -----REL(#55)----->

                        <-------RLC--------

_____
```

1. No call set up should be observed on the access side.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the way" and CUG call indicator in the OFCI set to "CUG call, outgoing access not allowed".

3. REL with cause #55 "Incoming calls barred within CUG". The location RLN - "public network serving the remote user" - can also be checked.

TSS CUG/	TP ISS_V_7_9	ISUP '97 references 1.5.2.5.1, table 1-2/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

CUG call with outgoing access; class of called user: CUG without IA, ICB activated.

To verify that the IUT rejects the CUG call with cause # 55 "Incoming calls barred within CUG" in the **REL**.

Pre-test conditions.

Arrange the data in the IUT such that the called party subscribes to CUG and the incoming calls are barred (ICB).

```
 access              SPA                 SPB

                        <----IAM (CUG)-----

                         (+OA,+ICB) incoming calls barred

                        -----REL(#55)----->

                        <-------RLC--------

_____
```

1. No call set up should be observed on the access side.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the way" and CUG call indicator in the OFCI set to "CUG call, outgoing access allowed".

3. REL with cause #55 "Incoming calls barred within CUG". The location RLN - "public network serving the remote user" - can also be checked.

TSS CUG/	TP ISS_V_7_10	ISUP '97 references 1.5.2.5.1, table 1-2/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

CUG call without outgoing access; class of called user: CUG with IA and no ICB activated.

To verify that the IUT can successfully establish a CUG call.

Pre-test conditions.

Arrange the data in the IUT such that the called party subscribes to the CUG with Incoming Access (IA) and no incoming calls are barred.

```
 access              SPA               SPB

 <------setup------- <----IAM (CUG)-----

           (-OA,+IA,-ICB) incoming access allowed, no incoming calls barred

   :

_____

1. Assist a CUG call set up to the access.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the
way" and CUG call indicator in the OFCI set to "CUG call, outgoing access not allowed".
```

TSS CUG/	TP ISS_V_7_11	ISUP '97 references 1.5.2.5.1, table 1-2/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

CUG call with outgoing access; class of called user: CUG with IA and no ICB activated.

To verify that the IUT can successfully establish a CUG call with outgoing access.

Pre-test conditions.

Arrange the data in the IUT such that the called party subscribes to the CUG with Incoming Access (IA) and no incoming calls are barred.

```
 access              SPA               SPB

 <------setup------- <----IAM (CUG)-----

           (+OA,+IA,-ICB) incoming access allowed, no incoming calls barred

   :

_____

1. Assist a CUG call set up to the access.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the
way" and CUG call indicator in the OFCI set to "CUG call, outgoing access allowed".
```

TSS CUG/	TP ISS_V_7_12	ISUP '97 references 1.5.2.5.1, table 1-2/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
CUG call without outgoing access; class of called user: CUG with IA and ICB activated.
To verify that the IUT rejects the CUG call with cause # 55 "Incoming calls barred within CUG" in the **REL**.
Pre-test conditions.
Arrange the data in the IUT such that the called party subscribes to the CUG with Incoming access (IA) and the incoming calls are barred (ICB).

```
 access             SPA                 SPB

                    <----IAM (CUG)-----

            (-OA,+IA,+ICB) incoming access allowed, incoming calls barred

                    -----REL(#55)----->

                    <-------RLC--------

_____

1. No call set up should be observed on the access side.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the
way" and CUG call indicator in the OFCI set to "CUG call, outgoing access not allowed".

3. REL with cause #55 "Incoming calls barred within CUG". The location RLN - "public
network serving the remote user" - can also be checked.
```

TSS CUG/	TP ISS_V_7_13	ISUP '97 references 1.5.2.5.1, table 1-1/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
CUG call with outgoing access; class of called user: CUG with IA and ICB activated.
To verify that the IUT can successfully establish a non-CUG call.
Pre-test conditions.
Arrange the data in the IUT such that the called party subscribes to the CUG with Incoming access (IA) and the incoming calls are barred (ICB).

```
 access             SPA                 SPB

                    <----IAM (CUG)-----

            (+OA,+IA,+ICB) incoming access allowed, incoming calls barred

  :

_____

1. Assist a CUG call set up to the access.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the
way" and CUG call indicator in the OFCI set to "CUG call, outgoing access allowed".
```

TSS CUG/	TP ISS_V_7_14	ISUP '97 references 1.5.2.5.1, table 1-2/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.4.5

Test Purpose
CUG call without outgoing access; class of called user: non-CUG.
To verify that the IUT rejects the CUG call with cause # 87 "User not member of CUG" in the **REL**.
Pre-test conditions.
Called user is not member of CUG.

```
 access              SPA                    SPB


                    <----IAM (CUG)----- (-OA)

                    -----REL(#87)----->

                    <-------RLC--------
_____

1. No call set up should be observed on the access side.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the
way" and CUG call indicator in the OFCI set to "CUG call, outgoing access not allowed".

3. REL with cause #87 "User not member of CUG". The location RLN - "public network
serving the remote user' - can also be checked.
```

TSS CUG/	TP ISS_V_7_15	ISUP '97 references 1.5.2.5.1, table 1-2/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.4.2

Test Purpose
CUG call with outgoing access; class of called user: non-CUG.
To verify that the IUT can successfully establish a non-CUG call.
Pre-test conditions.
Called user is not member of CUG.

```
 access              SPA                    SPB

                    <----IAM (CUG)----- (+OA)


 :
_____

1. Assist a CUG call set up to the access.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the
way" and CUG call indicator in the OFCI set to "CUG call, outgoing access allowed'.
```

TSS CUG/	TP ISS_V_7_16	ISUP '97 references 1.5.2.5.1, table 1-2/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Non-CUG call; class of called user: CUG without IA.
To verify that the IUT rejects the CUG call with cause # 87 "User not member of CUG" in the **REL**.
Pre-test conditions.
Arrange the data in the IUT such that the called party subscribes to CUG.

```
 access              SPA              SPB

                     <-------IAM-------

                      (non-CUG,-IA) incoming access not allowed

                     -----REL(#87)---->

                     <-------RLC-------

_____

1. No call set up should be observed on the access side.

2. Send an IAM for a non-CUG call with ISUP preference indicator in the FCI set to
"ISUP required all the way".

3. REL with cause #87 "User not member of CUG". The location RLN - "public network
serving the remote user" - can also be checked.
```

TSS CUG/	TP ISS_V_7_17	ISUP '97 references 1.5.2.5.1, table 1-2/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Non-CUG call; class of called user: CUG with IA.
To verify that the IUT can successfully establish a non-CUG call.
Pre-test conditions.
Arrange the data in the IUT such that the called party subscribes to CUG with Incoming Access (IA).

```
 access              SPA                 SPB

                     <-------IAM-------

                      (non_CUG,+IA) incoming access allowed

 :

_____

1. Assist a Non-CUG call set up to the access.

2. Send an IAM for a non-CUG call with ISUP preference indicator in the FCI set to
"ISUP required all the way".
```

TSS CUG/	TP ISS_V_7_18	ISUP '97 references 1.5.2.5.1, table 1-2/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
CUG call without outgoing access; class of called user: other CUG without IA.
To verify that the IUT rejects the CUG call with cause # 87 "User not member of CUG" in the **REL**.
Pre-test conditions.
Arrange the data in the IUT such that the called party subscribes to another CUG than that of calling user.

```
 access              SPA                  SPB

                     <----IAM (CUG)-----

                       (-OA,-IA) other CUG, incoming access not allowed

                     -----REL(#87)----->

                     <-------RLC--------

_____

1. No call set up should be observed on the access side.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the
way" and CUG call indicator in the OFCI set to "CUG call, outgoing access not allowed".

3. REL with cause #87 "User not member of CUG". The location RLN - "public network
serving the remote user" - can also be checked.
```

TSS CUG/	TP ISS_V_7_19	ISUP '97 references 1.5.2.5.1, table 1-2/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.4.6

Test Purpose
CUG call with outgoing access; class of called user: other CUG without IA.
To verify that the IUT rejects the CUG call with cause # 87 "User not member of CUG" in the **REL**.
Pre-test conditions.
Arrange the data in the IUT such that the called party subscribes to another CUG than that of calling user.

```
 access              SPA                  SPB

                     <----IAM (CUG)-----

                       (+OA,-IA) other CUG, incoming access not allowed

                     -----REL(#87)----->

                     <-------RLC--------

_____

1. No call set up should be observed on the access side.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the
way" and CUG call indicator in the OFCI set to "CUG call, outgoing access allowed".

3. REL with cause #87 "User not member of CUG". The location RLN - "public network
serving the remote user" - can also be checked.
```

TSS CUG/	TP ISS_V_7_20	ISUP '97 references 1.5.2.5.1, table 1-2/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
CUG call without outgoing access; class of called user: other CUG with IA.
To verify that the IUT rejects the CUG call with cause # 87 "User not member of CUG" in the **REL**.
Pre-test conditions.
Arrange the data in the IUT such that the called party subscribes to another CUG than that of calling user, and that incoming access (IA) is allowed.

```
 access              SPA                 SPB

                     <----IAM (CUG)-----

                       (-OA,+IA) other CUG, incoming access allowed

                     -----REL(#87)----->

                     <-------RLC--------
_____

1. No call set up should be observed on the access side.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the
way" and CUG call indicator in the OFCI set to "CUG call, outgoing access not allowed".

3. REL with cause #87 "User not member of CUG". The location RLN - "public network
serving the remote user" - can also be checked.
```

TSS CUG/	TP ISS_V_7_21	ISUP '97 references 1.5.2.5.1, table 1-2/ITU-T Recommendation Q.735 [35]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.4.7

Test Purpose
CUG call with outgoing access; class of called user: other CUG with IA.
To verify that the IUT can successfully establish a non-CUG call.
Pre-test conditions.
Arrange the data in the IUT such that the called party subscribes to another CUG than that of calling user, and that incoming access (IA) is allowed.

```
 access              SPA                 SPB

                     <----IAM (CUG)-----

                       (+OA,+IA) other CUG, incoming access allowed

  :
_____

1. Assist a Non-CUG call set up to the access.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the
way" and CUG call indicator in the OFCI set to "CUG call, outgoing access allowed".
```

| TSS
CUG/ | TP
ISS_I_7_22 | ISUP '97 reference
1.5.2.5.2/ITU-T
Recommendation
Q.735 [35] | Selection
expression
DLE | ITU-T
Recommendation
Q.788 [29]
reference
None |
|---|---|---|---|---|
| Test Purpose
Non-CUG call with CUG interlock code in IAM.
To verify that the IUT rejects the call with cause # 111 "Protocol error, unspecified" in the **REL**, if a non-CUG call has a **CUG interlock code** in the **IAM**. | | | | |

```
 access            SPA               SPB

                   <---IAM (CUGIC)----

                    (non-CUG,+IA) incoming access allowed

                   -----REL(#111)---->

                   <-------RLC--------

_____

1. No call set up should be observed on the access side.

2. Send an IAM for a non-CUG call with ISUP preference indicator in the FCI set to
"ISUP required all the way" and a CUG interlock code. There is no OFCI parameter in the
IAM.

3. REL with cause #111 "Protocol error, unspecified".
```

| TSS
CUG/ | TP
ISS_I_7_23 | ISUP '97 reference
1.5.2.5.2/ITU-T
Recommendation
Q.735 [35] | Selection
expression
DLE | ITU-T
Recommendation
Q.788 [29]
reference
None |
|---|---|---|---|---|
| Test Purpose
CUG call without interlock code in IAM.
To verify that the IUT rejects the CUG call with cause # 111 "Protocol error, unspecified" in the **REL**, if there is no **CUG interlock code** in the **IAM**. | | | | |

```
 access            SPA               SPB

                   <---IAM (CUGIC)----

           (+OA,+IA,-ICB) incoming access allowed, no incoming calls barred

                   -----REL(#111)---->

                   <-------RLC--------

_____

1. No call set up should be observed on the access side.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the
way" and CUG call indicator in the OFCI set to "CUG call, outgoing access allowed".
There is no CUGIC parameter in the IAM.

3. REL with cause #111 "Protocol error, unspecified".
```

7.3.8 SUB-addressing (SUB)

TSS SUB/	TP ISS_V_8_1	ISUP '97 reference 8.5.2.1.1/ITU-T Recommendation Q.731 [2]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference 2.2.1

Test Purpose
Sending the called sub-address in the access transport parameter.
To verify that the IUT can include the called sub-address in the access transport parameter in the IAM.
<pre>access   SPA   SPB
 	
-------setup------> --------IAM------>
 	
  :
 	
_____
 	
1. Set up a call from the access with a called sub-address.</pre>				

TSS SUB/	TP ISS_V_8_2	ISUP '97 references 8.5.2.2.1, 8.5.2.3.1, 8.5.2.4.1/ITU-T Recommendation Q.731 [2]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference 2.2.1

Test Purpose
Transit support of access transport parameter.
To verify that the contents of the **access transport** parameter is passed on transparently in the IAM.
<pre>SPC   SPA   SPB
 	
--------IAM-------> --------IAM------->
 	
  :
 	
_____
 	
1. The PTC will initiate a call set up with the expected parameters.</pre>				

TSS SUB/	TP ISS_V_8_3	ISUP '97 reference 8.5.2.5.1/ITU-T Recommendation Q.731 [2]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.2.1

Test Purpose
Receiving the called sub-address in the access transport parameter.
To verify that a call may be successfully established if the IAM contains the sub-address in the **access transport** parameter and that the called sub-address is passed on to the user network interface.
Pre-test conditions.
Arrange the data in the IUT such that the called party subscribes to the SUB supplementary service.
<pre>access   SPA   SPB
 	
<------setup------- <-------IAM--------
 	
  :
 	
_____
 	
1. Set up a call to the access with the ATP parameter containing the called sub-
address.</pre>				

TSS SUB/	TP ISS_I_8_4	ISUP '97 reference 8.5.2.5.2/ITU-T Recommendation Q.731 [2], 2.1.1.6/ITU-T Recommendation Q.764 [22]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Receiving the called sub-address if it is not supported at the destination.

To verify that a call may be successfully established if the IAM contains the sub-address in the **access transport** parameter and the destination address does not subscribe to the SUB supplementary service.

Pre-test conditions.

Arrange the data in the IUT such that the called party does not subscribe to the SUB supplementary service.

```
 access              SPA                 SPB

 <------setup------- <-------IAM-------

  :

_____

1. Set up a call to the access with the ATP parameter containing the called sub-
address.
```

TSS SUB/	TP ISS_V_8_5	ISUP '97 reference 8.7/ITU-T Recommendation Q.731 [2]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Interaction with other networks; no notification is sent back to the OLE.

To verify that the IUT can successfully establish a call by discarding the sub-address if the succeeding network does not support the sub-address or the supplied length is not supported.

```
NON-ISUP                SPA                 SPB

 <------setup------- <-------IAM-------

  :

_____

1. Set up a call to a network which does not support the Sub-addressing supplementary
service or which cannot support the sub-address length supplied.
```

7.3.9   Malicious Call IDentification (MCID)

TSS MCID/	TP ISS_V_9_1	ISUP '97 reference 7.5.2.1.1/ITU-T Recommendation Q.731.7 [7]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference 2.5.1
Test Purpose				

Test Purpose
Successful MCID request.
To verify that the IUT can successfully reply to an **IDR** having the **MCID request indicator** set to "MCID request" by sending an **IRS** with **MCID response indicator** set to "MCID included" and the **calling party number** included.

```
 access              SPA              SPB

 -------setup------> --------IAM------->

                     <-------IDR--------

                     --------IRS------->

:

_____

1. Set up a call from the access with or without a calling party number.

2. IAM may or may not contain calling party number.

3. IDR may be requested even if the initial IAM contained calling party number.
```

TSS MCID/	TP ISS_V_9_2	ISUP '97 reference 7.5.2.1.1/ITU-T Recommendation Q.731.7 [7]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose				

Test Purpose
Successful MCID request - after ACM.
To verify that the IUT will accept and reply correctly to an MCID request after ACM has been received. The IUT should reply to an **IDR** having the **MCID request indicator** set to "MCID request" by sending an **IRS** with **MCID response indicator** set to "MCID included" and the **calling party number** included.
NOTE: This situation may occur e.g. if the call has been forwarded before reaching the destination.

```
 access              SPA              SPB

 -------setup------> -------IAM------>

 <------alert------- <------ACM-------

        ... ringing tone ...

                     <------IDR-------

                     -------IRS------>

:

_____

1. Set up a call from the access.

2. IRS containing the number of calling party number.
```

TSS MCID/	TP ISS_V_9_3	ISUP '97 reference 7.5.2.1.1/ITU-T Recommendation Q.731.7 [7]	Selection expression OLE AND PICS A.12/1	ITU-T Recommendation Q.788 [29] reference 2.5.1

Test Purpose
Successful MCID request with calling sub-address.
To verify that the IUT can successfully reply to an **IDR** having the **MCID request indicator** set to "MCID request" by sending an **IRS** with **MCID response indicator** set to "MCID included", the **calling party number** and a calling sub-address in the **access transport** parameter.

```
access              SPA                      SPB

 -------setup-----> -------IAM-------->

                    <------IDR---------

                    -------IRS-------->
:

_____

1. Set up a call from the access with a calling party sub-address.

2. Calling party sub-address in ATP.
```

TSS NO_MCID/	TP ISS_I_9_4	ISUP '97 reference 7.5.2.1.2/ITU-T Recommendation Q.731.7 [7]	Selection expression OLE AND NOT PICS A.3/9	ITU-T Recommendation Q.788 [29] reference 2.5.2

Test Purpose
MCID request - MCID not supported by the OLE.
To verify that the IUT rejects a MCID request by sending an **IRS** with the **MCID response indicator** set to "MCID not included".

```
access              SPA                  SPB

 -------setup-----> -------IAM------->

                    <------IDR--------

                    -------IRS------->
:

_____

1. Set up a call from the access.
```

TSS MCID/	TP ISS_V_9_5	ISUP '97 reference 7.5.2.2.1/ITU-T Recommendation Q.731.7 [7]	Selection expression Transit	ITU-T Recommendation Q.788 [29] reference None
Test Purpose MCID information passed transparently. To verify that a received **IDR** is transferred transparently to the preceding exchange and the subsequent **IRS** is transferred transparently to the succeeding exchange.				

```
Case a)

 SPC                 SPA                 SPB

 --------IAM------>  --------IAM------->

 <-------IDR-------  <-------IDR--------

 --------IRS------>  --------IRS------->

:
_____

1. The PTC will initiate a call set up.


Case b)

 SPC                 SPA                 SPB

--------IAM------->  --------IAM------->

<-------ACM-------   <-------ACM--------

<-------IDR--------  <-------IDR--------

--------IRS------->  --------IRS------->

:
_____

1. The PTC will initiate a call set up.
```

TSS MCID/	TP ISS_V_9_6	ISUP '97 reference 7.5.2.3.1/ITU-T Recommendation Q.731.7 [7]	Selection expression OutIE AND NOT PICS A.12/4	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
MCID information passed and set correctly - outgoing.
To verify that a received **IDR** is transferred transparently into the national network (NOT PICS A.4/1), the subsequent **IRS** being transferred into the international network so that the country code in the address signals of the **calling party number** is added and the nature of address indicator is set to "international number".
 	
`SPC national SPA international SPB`
 	
`  --------IAM-------> --------IAM------->`
 	
` <-------IDR-------- <-------IDR--------`
 	
` --------IRS-------> --------IRS------->`
 	
`:`
 	
`_____`
 	
`1. The PTC will initiate a call set up with the expected parameters.`
 	
`2. The IDR request is transferred into the national network.`
 	
`3. The IRS is received from the national network having the calling party number coded`
`as an "international number".`				

TSS NO_MCID/	TP ISS_I_9_7	ISUP '97 reference 7.5.2.3.2/ITU-T Recommendation Q.731.7 [7]	Selection expression OutIE AND NOT PICS A.3/9 AND PICS A.8/3	ITU-T Recommendation Q.788 [29] reference 2.5.2

Test Purpose
MCID request - MCID not supported by the calling party's national network.
To verify that the outgoing international exchange rejects a MCID request by sending an **IRS** with the **MCID response indicator** set to "MCID not included".
NOTE: This test case checks the behaviour of the IUT if the national network does not support MCID.
 	
` SPC national SPA international SPB`
 	
`  --------IAM-------> --------IAM------->`
 	
`                    <-------IDR--------`
 	
`                    --------IRS------->`
 	
`:`
 	
`_____`
 	
`1. PTC provides stimulus for normal call setup (calling party number not included).`
 	
`NOTE:   The MCID request is in this case assumed to stop at gateway and not have any`
`        impact on the signalling in the national network.`				

TSS MCID/	TP ISS_V_9_8	ISUP '97 reference 7.5.2.4.1/ITU-T Recommendation Q.731.7 [7]	Selection expression InclE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose MCID information passed and set correctly - incoming. To verify that a received **IDR** is transferred transparently into the international network and the subsequent **IRS** is transferred into the national network so that the country code in the address signals of the **calling party number** is removed if it is the network's own country code and the nature of address indicator is set in this case to "national (significant) number".					

```
SPC international SPA national SPB

 --------IAM-------> --------IAM------->

 <-------IDR-------- <-------IDR--------

 --------IRS-------> --------IRS------->

:

_____

1. The PTC will initiate a call set up with the expected parameters.

2. The country code is expected to be stripped off and the number format converted to
national (significant) number.
```

TSS MCID/	TP ISS_I_9_9	ISUP '97 reference 7.5.2.4.2/ITU-T Recommendation Q.731.7 [7]	Selection expression InclE AND PICS A.12/5	ITU-T Recommendation Q.788 [29] reference None
Test Purpose MCID request - MCID not supported by the calling party's national network - adding information. To verify that the international incoming gateway can modify the **MCID response indicator** set to "MCID not included" into "MCID included" and can include the available information in the **calling party number**. NOTE: The known part of the **calling party number** is sent with the address incomplete indicator set to "incomplete".					

```
SPC international SPA national SPB

 --------IAM-------> --------IAM------->

 <-------IDR-------- <-------IDR--------

 --------IRS-------> --------IRS------->

:

_____

1. The PTC will initiate a call set up with the expected parameters.
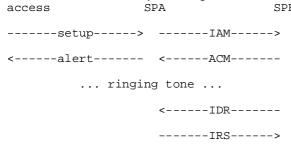```

| TSS MCID/ | TP ISS_V_9_10 | ISUP '97 reference 7.5.2.5.1 a)/ITU-T Recommendation Q.731.7 [7] | Selection expression DLE | ITU-T Recommendation Q.788 [29] reference 2.5.1 |
|---|---|---|---|---|
| Test Purpose<br>DLE records call details.<br>To verify that the DLE can successfully record the **calling party number** and optionally the calling sub-address if received in the **IAM** or in the **IRS**.<br>Pre-test conditions.<br>Arrange the data in the IUT so that the called user has subscribed to MCID service.<br><pre>Case a)<br><br> access           SPA               SPB<br><br> <------setup------  <-------IAM--------<br><br>:<br><br>_____<br><br>1. Assist setup to the access.<br><br>2. CgPN & sub-address in ATP.<br><br>3. MCID recordings should be kept while in active phase of call.<br><br>Case b)<br><br> access           SPA               SPB<br><br> <------setup------  <-------IAM--------<br><br>                    -------IDR-------><br><br>                    <-------IRS--------<br><br>:<br><br>_____<br><br>1. Assist setup to the access.<br><br>2. No number information in IAM.<br><br>3. Number information in IRS (CgPN and Sub in ATP).<br><br>4. MCID recordings should be kept while in active phase of call.</pre> | | | | |

| TSS<br>MCID/ | TP<br>ISS_V_9_11 | ISUP '97 reference<br>7.5.2.5.1 b)/ITU-T<br>Recommendation<br>Q.731.7 [7] | Selection<br>expression<br>DLE | ITU-T<br>Recommendation<br>Q.788 [29]<br>reference<br>2.5.1 |
|---|---|---|---|---|
| Test Purpose<br>DLE requests call details.<br>To verify that the DLE can successfully request the **calling party number** and optionally the calling sub-address by sending an **IDR**, if there is no calling party number included in the **IAM**.<br>Pre-test conditions.<br>Arrange the data in the IUT so that the called user has subscribed to MCID service.<br><br>`  access           SPA              SPB`<br><br>` <------setup-----  <-------IAM--------`<br><br>`                    -------IDR------->`<br><br>`                    <-------IRS--------`<br><br>`:`<br><br>`_____`<br><br>`1. Set up to the access containing no number information.`<br><br>`2. Number information is provided.` | | | | |

| TSS<br>MCID/ | TP<br>ISS_I_9_12 | ISUP '97 reference<br>7.5.2.5.2/ITU-T<br>Recommendation<br>Q.731.7 [7] | Selection<br>expression<br>DLE | ITU-T<br>Recommendation<br>Q.788 [29]<br>reference<br>2.5.2 |
|---|---|---|---|---|

Test Purpose

No MCID information after MCID request.

To verify that the call setup is continued (user is alerted) if an **IRS** is received without the expected MCID information within timer T39 expiry, after having sent the **IDR** with **MCID request indicator** set to "MCID requested".

Pre-test conditions.

Arrange the data in the IUT so that the user has subscribed to MCID service.

```
Case a)

 access           SPA                    SPB

 <------setup-----  <-------IAM--------

                    -------IDR------->

                    <-------IRS--------

:

_____

1. Set up to the access containing no number information.

2. Number information not provided (MCID response indicators = 0, no CgPN given).

Case b)

 access           SPA                    SPB

 <------setup-----  <-------IAM--------

                    -------IDR------->

                    <-------IRS--------

:

_____

1. Set up to the access containing no number information.

2. Number information not provided (MCID response indicators = 1, No CgPN given).
```

TSS MCID/	TP ISS_I_9_13	ISUP '97 reference 7.5.2.5.2/ITU-T Recommendation Q.731.7 [7]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.5.3

Test Purpose

MCID timer (T39) expiry.

To verify that call setup is continued (user is alerted) if no **IRS** is received within timer T39 expiry, after having sent the **IDR** with **MCID request indicator** set to "MCID requested".

Pre-test conditions.

Arrange the data in the IUT so that the called user has subscribed to MCID service.

```
 access            SPA                    SPB

 <------setup-----  <-------IAM-------

                    -------IDR------->

                      |

                    T39

                      -------ACM------->

:

_____

1. Set up to the access containing no number information.
```

TSS MCID/	TP ISS_V_9_14	ISUP '97 reference 7.7/ITU-T Recommendation Q.731.7 [7]	Selection expression OLE AND PICS A.2/4	ITU-T Recommendation Q.788 [29] reference 2.5.1

Test Purpose

Successful MCID request with additional calling party number.

To verify that the OLE can successfully reply to an **IDR** having the **MCID request indicator** set to "MCID request" by sending an **IRS** with **MCID response indicator** set to "MCID included", the **calling party number** and an additional calling party number in the **generic number** parameter.

NOTE: This implies that a special arrangement exists with the calling user.

Pre-test conditions.

Arrange the data in the IUT so that the additional calling party number information is available.

```
 access            SPA                    SPB

------setup------>  --------IAM------->

                    <-------IDR--------

                    --------IRS------->

:

_____

1. Set up a call from the access.

2. CgPN & addCgPN in GenNb.
```

TSS MCID/	TP ISS_V_9_15	ISUP '97 reference 7.6.9/ITU-T Recommendation Q.731.7 [7]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
MCID interaction with DDI.
To verify that the **calling party number**, the **called party number** with DDI are registered if provided.
Pre-test conditions.
Arrange the data in the IUT so that the called user has subscribed to the MCID and DDI services.
```
Case a)

 access              SPA                    SPB

 <------setup------- <-------IAM--------

:

_____

1. Assist setup to the access.

2. Check the MCID recordings for the called party (with DDI).

Case b)

 access              SPA                    SPB

 <------setup----- <-------IAM--------

                    --------IDR------->

                    <-------IRS--------

:

_____

1. Assist setup to the access.

2. No number information in IAM.

3. Number information in IRS (with DDI).

4. Check the MCID recordings for the calling party.
```

TSS MCID/	TP ISS_V_9_16	ISUP '97 reference 7.6.10/ITU-T Recommendation Q.731.7 [7]	Selection expression DLE AND PICS A.12/3	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
MCID interaction with diversion services.
To verify that besides the **calling party number**, the **original called number** and the **redirecting number** are registered if provided.
NOTE: A call diversion service has been activated for this call.
Pre-test conditions.
Arrange the data in the IUT so that the user has subscribed to MCID.
`access              SPA               SPB`
 	
` <------setup------- <-------IAM-------`
 	
`:`
 	
`_____`
 	
`1. Assist setup to the access.`
 	
`2. MCID recordings should be kept while in active phase of call.`				

7.3.10   CONFerence call, add-on (CONF)

TSS CONF/	TP ISS_V_10_1	ISUP '97 reference 1.5.2.1.1.1/ITU-T Recommendation Q.734 [36]	Selection expression Local AND BCall PICS A.13/13	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Requirement related to echo control. To verify that the IUT is able to initiate echo control procedures for the necessary legs when a new call is added to the conference. NOTE: The used PICS is defined for the basic call (BCall). Pre-test conditions. Arrange the data in the IUT such that the served user subscribes to CONF supplementary service. For further study.				

TSS CONF/	TP ISS_V_10_2	ISUP '97 reference 1.5.2.1.1.2/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference 2.13.1

Test Purpose

Establishing a conference from an active call.

To verify that the IUT can successfully begin the conference from an active call and notify the implied parties correctly.

NOTE: The **generic notification indicator** set to "conference established" should be sent by the IUT in the **CPG.**
          The event indicator should be set to "progress".

Pre-test conditions.

Arrange the data in the IUT such that the served user subscribes to CONF supplementary service.

```
SPC              SPA           UNI at A          SPA              SPB

------IAM----->  --setup(CR2)->

<-----ACM------  <--alerting---

<-----ANM------  <---connect---

<--CPG(hold)---  <----info-----

                               --setup(CR1)->  ------IAM------>

                               <--alerting---  <-----ACM-------

                               <---connect---  <-----ANM-------

                                  ... check communication ...

                               ---fac(begC)-> -CPG(conf est)->

<-----REL------  <----disc----- -----disc---->  ------REL------>

------RLC----->                                 <-----RLC-------
```
_____

1. Assist a call set up to UNI at SPB.

2. Begin the conference and check that notification "conference established" is
received in the CPG.

3. Release the call at the end terminal and check that all network resources are
released.

TSS CONF/	TP ISS_V_10_3	ISUP '97 reference 1.5.2.1.1.2/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference 2.13.1
Test Purpose Adding calls (conferees) to an established conference. To verify that the IUT is able to add a conferee to a conference and notify the implied parties correctly. NOTE: The **generic notification indicator** set to "conference established" should be sent by the IUT to the new affected conferee and the **generic notification indicator** set to "other party added" to the non-affected conferees. The event indicator in the **CPG** should be set to "progress". Pre-test conditions. Arrange the data in the IUT such that the served user subscribes to CONF supplementary service.				

```
Case a)

SPC                 SPA           UNI at A           SPA           SPB

------IAM------>  --setup(CR2)->

<-----ACM-------  <--alerting---

<-----ANM-------  <---connect---

<--CPG(hold)----  <----info-----

                                --setup(CR1)->  ------IAM------>

                                <--alerting---  <-----ACM-------

                                <---connect---  <-----ANM-------

                                  ... check communication ...

                                ---fac(begC)->  -CPG(conf est)->

<-CPG(conf est)--  <--fac(addC)-            -CPG(oth pty add)>

                   ----disc---->

<-----REL-------                 -----disc---->  ------REL------>

------RLC------>                                <-----RLC------

_____

1. Assist a call set up to UNI at SPB.

2. Establish a conference from SPA to SPB.

3. Add a new conferee to the established conference and notify subscriber at SPB by
sending him/her "other_party_added" in the CPG.

4. The conference is released by call clearing by the served user at SPA.

Case b)

SPC                 SPA           UNI at A           SPA           SPB

------IAM------>  --setup(CR2)->

<-----ACM-------  <--alerting---

<-----ANM-------  <---connect---

<--CPG(hold)----  <----info-----

                                --setup(CR1)->  -------IAM------>

                                <--alerting---  <------ACM------

                                <---connect---  <------ANM------
```

TSS CONF/	TP ISS_V_10_3	ISUP '97 reference 1.5.2.1.1.2/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference 2.13.1
... check communication ...				
	---fac(begC)->	--CPG(conf est)->		
<-CPG(conf est)-	<--fac(addC)--	-CPG(oth pty add)>		
---IAM(cic2)--->	--setup(CR3)->			
<------ACM------	<--alerting---			
<------ANM------	<--connect----			
<-CPG(conf est)-	<--fac(addC)--	-CPG(oth pty add)>		
	-----disc---->			
<CPG(oth pty add)- (cic1)				
<--REL(cic1)----	-----disc---->	-------REL------>		
-------RLC----->		<------RLC-------		
<--REL(cic2)----				
-------RLC----->				

_____

1. Assist a call set up to UNI at SPB.

2. Establish a conference from SPA to SPB.

3. Add two new conferees to the established conference and notify subscriber at SPB by sending him/her "other party added" in the CPG.

4. The conference is released by call clearing by the served user at SPA.

TSS CONF/	TP ISS_V_10_4	ISUP '97 reference 1.5.2.1.1.2/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/2	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Joining the maximum number of conferees in a conference.

To verify that the IUT is able to join the maximum allowed number of conferees to a conference and notify the implied parties correctly.

NOTE: The **generic notification indicator** set to "conference established" should be sent by the IUT to the new affected conferee and the **generic notification indicator** set to "other party added" to the non-affected conferees. The event indicator in the **CPG** should be set to "progress".

Pre-test conditions.

Arrange the data in the IUT such that the served user subscribes to CONF supplementary service.

```
SPC              SPA           UNI at A        SPA             SPB

------IAM------>  --setup(CR2)->

<-----ACM-------  <--alerting---

<-----ANM-------  <---connect---

<--CPG(hold)----  <----info-----

                              --setup(CR1)->  -------IAM------>

                              <--alerting---  <------ACM------

                              <---connect---  <------ANM------

                                ... check communication ...

                              ---fac(begC)->  --CPG(conf est)->

<-CPG(conf est)-  <--fac(addC)--              --CPG(oth pty add)>

     ******* At this point there are 3 conferees in conference ******

REPEAT for each new conferee

---IAM(cicx)--->  -----setup---> x = 2,3..n; n = maximum number of conferees-2

<-----ACM-------  <--alerting---

<-----ANM-------  <---connect---

<-CPG(conf est)-  <--fac(addC)--              --CPG(oth pty add)>

                  -----disc---->

<CPG(oth pty add)- (cicz) z = 1,2...n-1

Release conference:

<---REL(cicy)---   y = 1,2...n-1  -----disc---->  ------REL------>

-------RLC----->                                  <-----RLC-------
```
_____

1. Assist a call set up to UNI at SPB.

2. Establish a conference from SPA to SPB.

3. Add two new conferees to the established conference and notify subscriber at SPB by sending him/her "other party added" in the CPG.

4. The conference is released by call clearing by the served user at SPA.

TSS CONF/	TP ISS_V_10_5	ISUP '97 reference 1.5.2.1.1.3/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference 2.13.2

Test Purpose
Isolation of party.
To verify that the IUT can successfully isolate a conferee from the conference and notify the implied parties correctly.
NOTE: The **generic notification indicator** set to "isolated" within **call progress** should be sent by the IUT to the
affected conferee and the **generic notification indicator** set to "other party isolated" should be sent to the
non-affected conferees. The event indicator in the **CPG** should be set to "progress". The isolated conferee
should not be able to communicate with the rest of the conference.
Pre-test conditions.
Arrange the data in the IUT such that the served user subscribes to CONF supplementary service.

```
SPC              SPA          UNI at A        SPA              SPB

------IAM------>  --setup(CR2)->

<-----ACM-------  <--alerting---

<-----ANM-------  <---connect---

<--CPG(hold)----  <----info-----

                              --setup(CR1)-> -------IAM------>

                              <--alerting--- <------ACM------

                              <---connect--- <------ANM------

                              ... check communication ...

                              ---fac(begC)-> --CPG(conf est)->

<-CPG(conf est)- <--fac(addC)--              --CPG(oth pty add)>

---IAM(cic2)---> --setup(CR3)->

<------ACM------ <--alerting---

<------ANM------ <---connect---

<-CPG(conf est)- <--fac(addC)--              --CPG(oth pty add)>

                 -----disc---->

<CPG(oth pty add)- (cic1)

<CPG(oth pty iso)- (cic1)     ---fac(isoC)--> --CPG(isolated)->

<CPG(oth pty iso)- (cic2)

<CPG(oth pty rea)- (cic1)     ---fac(reaC)--> --CPG(reattach)->

<CPG(oth pty rea)- (cic2)


<---REL(cic1)---              ------disc----> -------REL------>

-------RLC----->                             <------RLC-------

<---REL(cic2)---

-------RLC----->
```
_____

1. Assist a call set up to UNI at SPB.

2. Establish a conference from SPA to SPB.

ETSI

TSS CONF/	TP ISS_V_10_5	ISUP '97 reference 1.5.2.1.1.3/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference 2.13.2
3. Add two new conferees to the established conference and notify subscriber at SPB by sending him/her "other party added" in the CPG. 4. Isolate a conferee and check that the notification "isolated" is received in the CPG. 5. Reattach the conferee. 6. The conference is released by call clearing by the served user at SPA.				

TSS CONF/	TP ISS_V_10_6	ISUP '97 reference 1.5.2.1.1.4/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference 2.13.2

Test Purpose
Reattachment of party.
To verify that the IUT can successfully reattach the isolated conferee to the conference and notify the implied parties correctly.
NOTE: The **generic notification indicator** set to "reattached" should be sent by the IUT to the affected conferee and the **generic notification indicator** set to "other party reattached" should be sent to non-affected conferees. The event indicator in the **CPG** should be set to "progress".
Pre-test conditions.
Arrange the data in the IUT such that the served user subscribes to CONF supplementary service.

```
SPC                SPA              UNI at A            SPA                SPB

------IAM------>  --setup(CR2)->

<-----ACM-------  <--alerting---

<-----ANM-------  <---connect---

<--CPG(hold)----  <----info-----

                                   --setup(CR1)->  -------IAM------>

                                   <--alerting---  <------ACM-------

                                   <---connect---  <------ANM-------

                                     ... check communication ...

                                   ---fac(begC)->  --CPG(conf est)->

<-CPG(conf est)- <--fac(addC)--                    --CPG(oth pty add)>

---IAM(cic2)---> --setup(CR3)->

<------ACM------ <--alerting---

<------ANM------ <---connect---

<-CPG(conf est)- <--fac(addC)--                    --CPG(oth pty add)>

                 -----disc---->

<CPG(oth pty add)- (cic1)

<CPG(oth pty iso)- (cic1)       ---fac(isoC)-> --CPG(isolated)-->

<CPG(oth pty iso)- (cic2)

<CPG(oth pty rea)- (cic1)       ---fac(reaC)-> --CPG(reattach)-->

<CPG(oth pty rea)- (cic2)


<---REL(cic1)---               -----disc----> --------REL------>

-------RLC----->                               <-------RLC-------

<---REL(cic2)---

-------RLC----->
```
_____

1. Assist a call set up to UNI at SPB.

2. Establish a conference from SPA to SPB.

TSS CONF/	TP ISS_V_10_6	ISUP '97 reference 1.5.2.1.1.4/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference 2.13.2
3. Add two new conferees to the established conference and notify subscriber at SPB by sending him/her "other party added" in the CPG.   4. Isolate a conferee and check that the notification "isolated" is received in the CPG.   5. Reattach the conferee.   6. The conference is released by call clearing by the served user at SPA.

TSS CONF/	TP ISS_V_10_7	ISUP '97 reference 1.5.2.1.1.5/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference 2.13.2

Test Purpose
Splitting of a party.
To verify that the IUT can create a private communication between the served user and one of the conferees and notify the implied parties correctly.
NOTE: The **generic notification indicator** set to "conference disconnected" should be sent by the IUT to the affected conferee and the **generic notification indicator** set to "other party split" should be sent to the non-affected conferees. The event indicator in the **CPG** should be set to "progress". The non-affected conferees should not be able to participate in the communication of the private communication.
See also figure 1 to 5/ITU-T Recommendation Q.734 [36] .
Pre-test conditions.
Arrange the data in the IUT such that the served user subscribes to CONF supplementary service.

```
SPC              SPA           UNI at A        SPA             SPB

------IAM------>  --setup(CR2)->

<-----ACM-------  <--alerting---

<-----ANM-------  <---connect---

<--CPG(hold)----  <----info-----

                               --setup(CR1)-> -------IAM------>

                               <--alerting--- <------ACM-------

                               <---connect--- <------ANM-------

                                 ... check communication ...

                               ---fac(begC)-> --CPG(conf est)->

<-CPG(conf est)- <--fac(addC)--                --CPG(oth pty add)>

---IAM(cic2)--->  --setup(CR2)->

<------ACM------  <--alerting---

<------ANM------  <---connect---

<-CPG(conf est)- <--fac(addC)--                --CPG(oth pty add)>

                               -----disc---->

<CPG(oth pty add)- (cic1)

                               --setup(CR2)->

                               <---connect---

<CPG(oth pty split)- (cic1)                    --CPG(conf disc)->

<CPG(oth pty split)- (cic2)


<---REL(cic1)---  <--disc(CR1)-- --disc(CR2)-> -------REL------->

-------RLC----->                               <------RLC--------

<---REL(cic2)---

-------RLC----->
```
_____

1. Assist a call set up to UNI at SPB.

TSS CONF/	TP ISS_V_10_7	ISUP '97 reference 1.5.2.1.1.5/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference 2.13.2
2. Establish a conference from SPA to SPB. 3. Add two new conferees to the established conference and notify subscriber at SPB by sending him/her "other party added" in the CPG. 4. Split the conferee at SPB and check that the notification "conference disconnected" is received in the CPG. 5. The private communication between subscriber at SPA and subscriber at SPB is checked. 6. The conference is released by call clearing by the served user at SPA (CR1) and the private communication by normal call clearing (CR2).				

TSS CONF/	TP ISS_V_10_8	ISUP '97 reference 1.5.2.1.1.6/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference 2.13.3

Test Purpose

Disconnection of conferee.
To verify that IUT can successfully disconnect a conferee from the conference, if requested by the served user, and notify the implied parties correctly.
NOTE: The IUT should release the leg towards the conferee according to normal call release procedures, i.e. send a **REL** to a conferee connected to the conference. The **generic notification indicator** set to "other party disconnected" should be sent to the non-affected conferees. The event indicator in the **CPG** should be set to "progress".
Pre-test conditions.
Arrange the data in the IUT such that the served user subscribes to CONF supplementary service.

```
SPC                SPA           UNI at A         SPA              SPB

------IAM------>  --setup(CR2)->

<-----ACM-------  <--alerting---

<-----ANM-------  <---connect---

<--CPG(hold)----  <----info-----

                                 --setup(CR1)->  -------IAM------>

                                 <--alerting---  <------ACM-------

                                 <---connect---  <------ANM-------

                                   ... check communication ...

                                 ---fac(begC)->  --CPG(conf est)->

<-CPG(conf est)-  <--fac(addC)--                 --CPG(oth pty add)>

---IAM(cic2)--->  --setup(CR3)->

<------ACM------  <--alerting---

<------ANM------  <---connect---

<-CPG(conf est)-  <--fac(addC)--                 --CPG(oth pty add)>

                  -----disc---->

<CPG(oth pty add)-  (cic1)

<CPG(oth pty disc)-  (cic1)     ---fac(dropC)-> -------REL------>

<CPG(oth pty disc)-  (cic2)                     <------RLC-------


<--REL(cic1)----  <----disc-----

-------RLC----->

<--REL(cic2)----

-------RLC----->
```

_____

1. Assist a call set up to UNI at SPB.

2. Establish a conference from SPA to SPB.

TSS CONF/	TP ISS_V_10_8	ISUP '97 reference 1.5.2.1.1.6/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference 2.13.3
3. Add two new conferees to the established conference and notify subscriber at SPB by sending him/her "other party added" in the CPG.				
4. Release the dropped party at SPB.				
5. The conference is released by call clearing by the served user at SPA.				

TSS CONF/	TP ISS_V_10_9	ISUP '97 reference 1.5.2.1.1.7/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference 2.13.3

Test Purpose

Disconnection by a conferee.

To verify that IUT can successfully disconnect a conferee from the conference, if requested by the conferee, and notify the implied parties correctly.

NOTE: The IUT should release the leg towards the conferee according to normal call release procedures, i.e. send a **RLC** in response to the **REL** to a conferee connected to the conference through ISUP. The **generic notification indicator** set to "other party disconnected" should be sent to the non-affected conferees. The event indicator in the **CPG** should be set to "progress".

Pre-test conditions.

Arrange the data in the IUT such that the served user subscribes to CONF supplementary service.

```
SPC              SPA          UNI at A         SPA              SPB

------IAM------>  --setup(CR2)->

<-----ACM-------  <--alerting---

<-----ANM-------  <---connect---

<--CPG(hold)----  <----info-----

                               --setup(CR1)->  -------IAM------>

                               <--alerting---  <------ACM-------

                               <---connect---  <------ANM-------

                                  ... check communication ...

                               ---fac(begC)->  --CPG(conf est)->

<-CPG(conf est)-  <--fac(addC)--                --CPG(oth pty add)>

---IAM(cic2)--->  --setup(CR3)->

<------ACM------  <--alerting---

<------ANM------  <---connect---

<--CPG(conf est)- <--fac(addC)--                --CPG(oth pty add)>

                  -----disc---->

<CPG(oth pty add)- (cic1)

<CPG(oth pty disc)- (cic1)      <-fac(pty disc)- <------REL-------

<CPG(oth pty disc)- (cic2)                        -------RLC------>


<--REL(cic1)----  <----disc-----

-------RLC----->

<--REL(cic2)----

-------RLC----->
```
_____

1. Assist a call set up to UNI at SPB.

2. Establish a conference from SPA to SPB.

3. Add two new conferees to the established conference and notify subscriber at SPB by sending him/her "other party added" in the CPG.

TSS CONF/	TP ISS_V_10_9	ISUP '97 reference 1.5.2.1.1.7/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference 2.13.3
4. Release request by the conferee at SPB. 5. The conference is released by call clearing by the served user at SPA.				

TSS CONF/	TP ISS_V_10_10	ISUP '97 reference 1.5.2.1.1.8/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference 2.13.2
Test Purpose Termination of conference. To verify that IUT can successfully disconnect all conferees from the conference, if requested by the served user, and initiate the normal call release procedure towards each conferee. NOTE: The IUT should send **REL** to all conferees connected to the conference. Pre-test conditions. Arrange the data in the IUT such that the served user subscribes to CONF supplementary service.				

```
SPC              SPA            UNI at A        SPA            SPB

------IAM------>  --setup(CR2)->

<-----ACM-------  <--alerting---

<-----ANM-------  <---connect---

<--CPG(hold)----  <----info-----

                               --setup(CR1)->  -------IAM------>

                               <--alerting---  <------ACM------

                               <---connect---  <------ANM------

                                 ... check communication ...

                               ---fac(begC)->  --CPG(conf est)->

<-CPG(conf est)- <--fac(addC)--                --CPG(oth pty add)>

---IAM(cic2)--->  --setup(CR3)->

<------ACM------  <--alerting---

<------ANM------  <---connect---

<-CPG(conf est)- <--fac(addC)--                --CPG(oth pty add)>

                               -----disc---->

<CPG(oth pty add)- (cic1)

<--REL(cic1)----                --fac(endC)-->  -------REL------>

-------RLC----->                <----disc-----  <------RLC-------

<--REL(cic2)----

-------RLC----->
```

_____

```
1. Assist a call set up to UNI at SPB.

2. Establish a conference from SPA to SPB.

3. Add two new conferees to the established conference and notify subscriber at SPB by
sending him/her "other party added" in the CPG.

4. Release the dropped party at SPB.

5. The conference is released by call clearing by the served user at SPA.
```

TSS CONF/	TP ISS_I_10_11	ISUP '97 reference 1.5.2.1.2/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Adding of conferees fails (unsuccessful).
To verify that if the procedure of adding conferees fails the concerned call remains in the previous state and notifications never be sent to the affected nor to the non-affected remote parties.
NOTE: The procedure of adding fails, e.g. because the maximum conference participants is exceeded.
Pre-test conditions.
Arrange the data in the IUT such that the served user has subscribed to CONF supplementary service.

```
SPC              SPA            UNI at A         SPA              SPB

------IAM------>  --setup(CR2)->

<-----ACM------   <--alerting---

<-----ANM------   <---connect---

<--CPG(hold)----  <----info-----

                              --setup(CR1)->  -------IAM------>

                              <--alerting---  <------ACM------

                              <---connect---  <------ANM------

                                 ... check communication ...

                              ---fac(begC)->  --CPG(conf est)->

<-CPG(conf est)-  <--fac(addC)--                --CPG(oth pty add)>

--------At this point there are 3 conferees in conference.-------

REPEAT for each new conferee:

---IAM(cicx)--->  ----setup----> x = 2,3..n; n = maximum number of conferees-2

<------ACM------  <--alerting---

<------ANM------  <---connect---

<--CPG(conf est)- <--fac(addC)--                --CPG(oth pty add)>

                  -----disc---->

<CPG(oth pty add)- (cicz) z = 1,2...n-1

Try to add another conferee (maximum number of conferees exceeded):

---IAM(cicx)--->  -----setup---> x = n+1

<------ACM------  <--alerting---

<------ANM------  <--connect----

                  <--fac(addC)--

-------REL------> -----disc---->

<------RLC------

Release conference:

<---REL(cicy)----   y = 1,2...n-1  -----disc---> ------REL------>

-------RLC------>                                <-----RLC------
```
_____

TSS CONF/	TP ISS_I_10_11	ISUP '97 reference 1.5.2.1.2/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference None
1. Assist a call set up to UNI at SPB. 2. Establish a conference from SPA to SPB. 3. Add two new conferees to the established conference and notify subscriber at SPB by sending him/her "other party added" in the CPG. 4. The conference is released by call clearing by the served user at SPA.				

TSS CONF/	TP ISS_I_10_12	ISUP '97 reference 1.5.2.1.2/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Isolation, reattachment, splitting, disconnection of a party, conference termination (unsuccessful).
To verify that if the procedures to isolate a party, reattach a party, split a party, disconnect a party, terminate conference fail, then the concerned call remains in the previous state and notifications are not sent to the affected nor to the non-affected remote parties.
NOTE: The procedure of reattachment fails, e.g. because the party was not formerly isolated.
Pre-test conditions.
Arrange the data in the IUT such that the served user has subscribed to CONF supplementary service.

```
SPC               SPA            UNI at A          SPA             SPB

------IAM------>  --setup(CR2)->

<-----ACM------   <--alerting---

<-----ANM------   <---connect---

<--CPG(hold)----  <----info-----

                               --setup(CR1)->  -------IAM------>

                               <--alerting---  <------ACM------

                               <---connect---  <------ANM------

                                 ... check communication ...

                               ---fac(begC)-> --CPG(conf est)->

<-CPG(conf est)- <--fac(addC)--               --CPG(oth pty add)>

---IAM(cic2)--->  --setup(CR3)->

<------ACM------  <---alerting–

<------ANM------  <---connect---

<-CPG(conf est)- <--fac(addC)--               --CPG(oth pty add)>

                 ------disc---->

<CPG(oth pty add)- (cic1)

Try to reattach a party who hasn't been isolated:

                               --fac(reattach)->


<---REL(cic1)---            ------disc---> -------REL------>

-------RLC----->                           <------RLC-------

<---REL(cic2)---

-------RLC----->
_____

1. Assist a call set up to UNI at SPB.

2. Establish a conference from SPA to SPB.

3. Add two new conferees to the established conference and notify subscriber at SPB by
sending him/her "other party added" in the CPG.

4. The conference is released by call clearing by the served user at SPA.
```

TSS CONF/	TP ISS_I_10_12	ISUP '97 reference 1.5.2.1.2/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference None
5. No CPG message with "reattached" should be received.				

TSS CONF/	TP ISS_V_10_13	ISUP '97 references 1.5.2.2.1, 1.5.2.3.1, 1.5.2.4.1/ITU-T Recommendation Q.734 [36]	Selection expression (IntermE OR DLE) AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Notification procedure supported. To verify that the IUT can successfully transfer/deliver the required notifications in/from the CPG message. Case a)				

```
 SPC               SPA              SPB

 -------IAM------>  -------IAM------>

 <------ACM-------  <------ACM-------

          ... ringing tone ...

 <------ANM-------  <------ANM-------

         check communication

 -------CPG------>  -------CPG------>

 -------CPG------>  -------CPG------>

  ... check conference communication ...

 -------CPG------>  -------CPG------>

 -------CPG------>  -------CPG------>

 -------CPG------>  -------CPG------>

  ... check conference communication ...

 <------REL-------  <------REL-------

 -------RLC------>  -------RLC------>
```
_____

1. Assist a call set up from SPC to SPB.

2. Check that the notification "conference established" is received in the CPG from conferee at SPC.

3. Check the notification "other party added" in the CPG.

4. Check the notification "isolated" in the CPG.

5. Check the notification "reattached" in the CPG.

6. Check the notification "other party disconnected" in the CPG.

7. Release the conference

TSS CONF/	TP ISS_V_10_13	ISUP '97 references 1.5.2.2.1, 1.5.2.3.1, 1.5.2.4.1/ITU-T Recommendation Q.734 [36]	Selection expression (IntermE OR DLE) AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference None

Case b)
 	
 access   SPA   SPB
 	
 <-----setup------- <------IAM------
 	
 -----alerting----> -------ACM----->
 	
     ... ringing tone ...
 	
 -----connect-----> -------ANM----->
 	
     check communication
 	
 <-----notify------ <------CPG------
 	
 <-----notify------ <------CPG------
 	
  ... check conference communication ...
 	
 <-----notify------ <------CPG------
 	
 <-----notify------ <------CPG------
 	
 <-----notify------ <------CPG------
 	
  ... check conference communication ...
 	
 <------disc------- <------REL------
 	
               -------RLC----->
_____
 	
1. Assist a call set up from SPC to SPB.
 	
2. Send the notification "conference established" is received in the CPG from conferee at SPC.
 	
3. Send the notification "other party added" in the CPG.
 	
4. Send the notification "isolated" in the CPG.
 	
5. Send the notification "reattached" in the CPG.
 	
6. Send the notification "other party disconnected" in the CPG.
 	
7. Release the conference				

TSS CONF/	TP ISS_V_10_14	ISUP '97 reference 1.6.15/ITU-T Recommendation Q.734 [36]	Selection expression Local AND PICS A.13/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Interaction with HOLD - held user added to conference.

To verify that no retrieve notification is sent to a user put on hold and subsequently added to a conference call, but that the IUT sends the "conference established" notification to the held user.

NOTE: The IUT should send the **CPG** with the **generic notification indicator** set to "conference established" to the held user.

Pre-test conditions.

Arrange the data in the IUT such that the served user has subscribed to CONF and HOLD supplementary services.

```
SPC              SPA            UNI at A         SPA            SPB

------IAM------>  --setup(CR2)->

<-----ACM-------  <--alerting---

<-----ANM-------  <---connect---

<--CPG(hold)----  <----info-----

                                --setup(CR1)->  -------IAM------>

                                <--alerting---  <------ACM------

                                <---connect---  <------ANM------

                                  ... check communication ...

                                ---fac(begC)->  --CPG(conf est)->

<-CPG(conf est)-  <--fac(addC)--                 --CPG(oth pty add)>

    no "retrieve" !

                 -----disc---->

<------REL------                 -----disc---->  -------REL------>

-------RLC----->                                 <------RLC-------
```
_____

1. Assist a call set up to UNI at SPB.

2. Establish a conference from SPA to SPB.

3. Add a new conferee to the established conference and notify subscriber at SPB by sending him/her "other party added" in the CPG.

4. The conference is released by call clearing by the served user at SPA.

5. Check if "conference established notification" was received by user at SPC.

TSS CONF/	TP ISS_V_10_15	ISUP '97 reference 1.6.15/ITU-T Recommendation Q.734 [36]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Interaction with HOLD - conference put on hold by conference controller. To verify that no hold and no retrieve notification is sent to the conferees when the conference controller puts the conference on hold. Pre-test conditions. Arrange the data in the IUT such that the served user has subscribed to CONF and HOLD supplementary services.				

```
SPC              SPA           UNI at A         SPA            SPB

------IAM------>  --setup(CR2)->

<-----ACM------   <--alerting---

<-----ANM------   <---connect---

<--CPG(hold)----  <----info-----

                             --setup(CR1)->  -------IAM------>

                             <--alerting---  <------ACM------

                             <---connect---  <------ANM------

                              ... check communication ...

                             ---fac(begC)->  --CPG(conf est)->

<-CPG(conf est)-  <--fac(addC)--              --CPG(oth pty add)>

---IAM(cic2)--->  --setup(CR3)->

<------ACM------  <--alerting---

<------ANM------  <---connect---

<-CPG(conf est)-  <--fac(addC)--              --CPG(oth pty add)>

                  -----disc---->

<CPG(oth pty add)- (cic1)

                              --info(hold)->

                              --info(retr)->

                           No CPGs should be sent in the network



<---REL(cic1)----       -----disc----> -------REL------>

-------RLC------>                       <------RLC-------

<---REL(cic2)----

-------RLC------>

_____

1. Assist a call set up to UNI at SPB.

2. Establish a conference from SPA to SPB.

3. Add two new conferees to the established conference and notify subscriber at SPB by
sending him/her "other party added" in the CPG.

4. No CPGs should be received by the conferee at SPB.
```

TSS CONF/	TP ISS_V_10_15	ISUP '97 reference 1.6.15/ITU-T Recommendation Q.734 [36]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None

5. The conference is released by call clearing by the served user at SPA.

6. No CPGs should be received by the conferees at SPC.

TSS CONF/	TP ISS_V_10_16	ISUP '97 reference 1.6.15/ITU-T Recommendation Q.734 [36]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Interaction with HOLD - conference put on hold by conferee.
To verify that when the IUT receives notification from a conferee that a call has been put on hold and subsequently retrieved, the IUT passes on this notification to the served user, but does not send any information to the other non-affected conferees.
Pre-test conditions.
Arrange the data in the IUT such that the served user has subscribed to CONF and HOLD supplementary services.

```
SPC               SPA              UNI at A          SPA              SPB

------IAM------>  --setup(CR2)->

<-----ACM-------  <--alerting---

<-----ANM-------  <---connect---

<--CPG(hold)----  <----info-----

                                  --setup(CR1)->  -------IAM------>

                                  <--alerting---  <------ACM------

                                  <---connect---  <------ANM------

                                    ... check communication ...

                                  ---fac(begC)->  --CPG(conf est)->

<-CPG(conf est)-  <--fac(addC)--               --CPG(oth pty add)>

---IAM(cic2)--->  --setup(CR3)->

<------ACM------  <--alerting---

<------ANM------  <---connect---

<-CPG(conf est)--  <--fac(addC)--              --CPG(oth pty add)>

                  -----disc---->

<CPG(oth pty add)- (cic1)

                                  <--info(hold)--  <---CPG(hold)----

                                  <--info(retr)--  <-CPG(retrieve)--

                                  No CPGs should be sent in the network


<----REL(cic1)--                  ------disc---->  -------REL------>

-------RLC----->                                   <------RLC-------

<----REL(cic2)--

-------RLC----->
```
_____

1. Assist a call set up to UNI at SPB.

2. Establish a conference from SPA to SPB.

3. Add two new conferees to the established conference and notify subscriber at SPB by sending him/her "other party added" in the CPG.

TSS CONF/	TP ISS_V_10_16	ISUP '97 reference 1.6.15/ITU-T Recommendation Q.734 [36]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None
4. Call hold is activated by the conferee at SPB, "remote hold" is sent in the CPG (no notification to the non-affected party, e.g. the served user at SPA). 5. Call is retrieved by user at SPB, "remote retrieval" is sent in the CPG (no notification to the non-affected users at SPC). 6. No CPGs should be received by the conferee at SPB. 7. The conference is released by call clearing by the served user at SPA. 8. No CPGs should be received by the conferees at SPC.				

7.3.11   Explicit call transfer (ECT)

TSS ECT/	TP ISS_V_11_1	ISUP '97 reference 7.5.2.1.1.1 a)/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/1	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Capability of storing and sending the additional calling party number in the call transfer number. To verify that the IUT is able to store the additional calling party number in the generic number when the calling party number and the generic number have been received from the remote user. This information is sent by the IUT to the other remote user in the call transfer number in either the FAC or CPG when the call transfer is activated. Pre-test conditions. Arrange the data in the IUT so that the served user subscribes to HOLD, CW and ECT. Case a)				

```
SPC                     SPA                      SPB

     1st call                2nd call

  --------IAM------>

  <-------ACM-------

  <-------ANM-------

  <-------CPG------- hold 1st call

                      -------IAM------->

                      <------ACM--------

                      <------ANM--------

  <-------FAC-------   -------FAC------->   remote addCgPN in CTNb

    :

_____

1. Assist call set up for the 1st call and then initiate the 2nd call at the UNI A (IUT).

2. Initiate the 1st call from SPC to the IUT (SPA) using the number TSP_Nb_A on the 1st
B-channel.

3. Assist the 2nd call set up from UNI A to the IUT on the 2nd B-channel.

4. FAC with GenNot:"call transfer, active", ServAct: "call transfer" and CTNb -
TSP_GenNb_C.
```

TSS ECT/	TP ISS_V_11_1	ISUP '97 reference 7.5.2.1.1.1 a)/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/1	ITU-T Recommendation Q.788 [29] reference None

```
Case b)

SPC                SPA                SPB

    1st call            2nd call

 --------IAM------>

 <-------ACM-------

 <-------ANM-------

 <-------CPG------- hold 1st call

                    -------IAM------>

                    <------ACM-------

 <-------FAC-------  -------CPG------> remote addCgPN in CTNb

 <-------FAC-------  <------ANM-------

   :

_____

1. Assist call set up for the 1st call and then initiate the 2nd call at the UNI A (IUT).

2. Initiate the 1st call from SPC to the IUT (SPA) using the number TSP_Nb_A on the 1st
B-channel.

3. Assist the 2nd call set up from UNI A to the IUT on the 2nd B-channel.

4. CPG (progress) with GenNot:"call transfer, active", ServAct: "call transfer" and
CTNb - TSP_GenNb_C.
```

TSS ECT/	TP ISS_V_11_2	ISUP '97 reference 7.5.2.1.1.1 a)/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Capability of storing and sending the calling party number in the call transfer number.
To verify that the IUT is able to store the **calling party number** when only this CLI has been received from the remote user. This information is sent by the IUT to the other remote user in the **call transfer number** in either the **FAC** or **CPG** when the call transfer is activated.
Pre-test conditions.
Arrange the data in the IUT so that the served user subscribes to HOLD, CW and ECT.
Case a)

```
SPC                    SPA                    SPB

     1st call               2nd call

 --------IAM------>

 <-------ACM-------

 <-------ANM-------

 <-------CPG------- hold 1st call

                        -------IAM------>

                        <------ACM--------

                        <------ANM--------

 <-------FAC-------      -------FAC-------> remote CgPN in CTNb

   :

_____

1. Assist call set up for the 1st call and then initiate the 2nd call at the UNI A (IUT).

2. Initiate the 1st call from SPC to the IUT (SPA) using the number TSP_Nb_A on the 1st B-channel.

3. Assist the 2nd call set up from UNI A to the IUT on the 2nd B-channel.

4. FAC with GenNot:"call transfer, active", ServAct: "call transfer" and CTNb - TSP_Nb_C.

Case b)

SPC                    SPA                    SPB

     1st call               2nd call

 --------IAM------>

 <-------ACM-------

 <-------ANM-------

 <-------CPG------- hold 1st call

                        -------IAM------>

                        <------ACM-------

 <-------FAC-------      -------CPG------> remote CgPN in CTNb

 <-------FAC-------      <------ANM-------

   :
```

TSS ECT/	TP ISS_V_11_2	ISUP '97 reference 7.5.2.1.1.1 a)/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/1	ITU-T Recommendation Q.788 [29] reference None

1. Assist call set up for the 1st call and then initiate the 2nd call at the UNI A (IUT).

2. Initiate the 1st call from SPC to the IUT (SPA) using the number TSP_Nb_A on the 1st B-channel.

3. Assist the 2nd call set up from UNI A to the IUT on the 2nd B-channel.

4. CPG (progress) with GenNot:"call transfer, active", ServAct: "call transfer" and CTNb - TSP_Nb_C.

TSS ECT/	TP ISS_V_11_3	ISUP '97 reference 7.5.2.1.1.1 b)/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Capability of storing and sending the additional connected number in the call transfer number.
To verify that the IUT is able to store the additional connected number in the **generic number** when the **connected number** and the **generic number** have been received from the remote user. This information is sent by the IUT to the other remote user in the **call transfer number** in either the **FAC** or **CPG** when the call transfer is activated.
Pre-test conditions.
Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.
Case a)

```
SPC                    SPA                    SPB

     1st call              2nd call

 <-------IAM-------

 -------ACM------>

 -------ANM------>

 <-------CPG------- hold 1st call

                       -------IAM------>

                       <------ACM-------

                       <------ANM-------

<--------FAC-------   -------FAC------> remote addConNb in CTNb from UNI at SPC

   :
```

1. Initiate 2 calls from the UNI A (IUT).

2. Assist 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. FAC with GenNot:"call transfer, active", ServAct: "call transfer" and CTNb - TSP_GenNb_C.

TSS ECT/	TP ISS_V_11_3	ISUP '97 reference 7.5.2.1.1.1 b)/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/1	ITU-T Recommendation Q.788 [29] reference None

Case b)
 	
SPC   SPA   SPB
 	
    1st call   2nd call
 	
 <-------IAM-------
 	
 -------ACM------>
 	
 -------ANM------>
 	
 <-------CPG------- hold 1st call
 	
                 -------IAM----->
 	
                 <------ACM-------
 	
 <-------FAC------- -------CPG-----> remote addConNb in CTNb from UNI at SPC
 	
 <-------FAC------- <------ANM-------
 	
   :
 	
_____
 	
1. Initiate 2 calls from the UNI A (IUT).
 	
2. Assist 1st call set up on the left side (SPC).
 	
3. Assist 2nd call set up on the right side (SPB).
 	
4. CPG (progress) with GenNot:"call transfer, active", ServAct: "call transfer" and CTNb - TSP_GenNb_C.				

TSS ECT/	TP ISS_V_11_4	ISUP '97 reference 7.5.2.1.1.1 b)/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Capability of storing and sending the connected number in call transfer number.
To verify that the IUT is able to store **connected number** when only this COL has been received from the remote user.
This information is sent by the IUT to the other remote user in the **call transfer number** in either the **FAC** or **CPG**
when the call transfer is activated.
Pre-test conditions.
Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.
Case a)

```
SPC                     SPA                     SPB

     1st call                 2nd call

 <-------IAM-------

 -------ACM------>

 -------ANM------>

 <-------CPG------- hold 1st call

                         -------IAM------->

                         <------ACM--------

                         <------ANM--------

 <-------FAC-------  -------FAC------> remote ConNb in CTNb from UNI at SPC

   :

_____

1. Initiate 2 calls from the UNI A (IUT).

2. Assist 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. FAC with GenNot:"call transfer, active", ServAct: "call transfer" and
CTNb - TSP_Nb_C.

Case b)

SPC                     SPA                      SPB

     1st call                 2nd call

 <-------IAM-------

 -------ACM------>

 -------ANM------>

 <-------CPG------- hold 1st call

                         -------IAM------->

                         <------ACM--------

 <-------FAC-------  -------CPG------> remote ConNb in CTNb from UNI at SPC

 <-------FAC-------  <------ANM--------

   :

_____
```

TSS ECT/	TP ISS_V_11_4	ISUP '97 reference 7.5.2.1.1.1 b)/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/1	ITU-T Recommendation Q.788 [29] reference None
1. Initiate 2 calls from the UNI A (IUT). 2. Assist 1st call set up on the left side (SPC). 3. Assist 2nd call set up on the right side (SPB). 4. CPG (progress) with GenNot:"call transfer, active", ServAct: "call transfer" and CTNb - TSP_Nb_C.				

TSS ECT/	TP ISS_V_11_5	ISUP '97 reference 7.5.2.1.1.2.1/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/2	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Loop prevention procedure - initiation.
To verify that the local exchange controlling the ECT can successfully initiate the loop prevention procedure by sending **LOP** with **loop prevention indicator** set to "request" and with **call transfer reference** for both calls.
Pre-test conditions.
Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.
 	
`SPC                     SPA                     SPB`
 	
`    1`st` call              2`nd` call`
 	
`<-------IAM-------`
 	
`-------ACM------>`
 	
`-------ANM------>`
 	
`<-------CPG------- hold 1`st` call`
 	
`                  -------IAM-------->`
 	
`                  <------ACM---------`
 	
`                  <------ANM---------`
 	
`<-------LOP-------   -------LOP-------->`
 	
`-------LOP------>   <------LOP---------`
 	
`<-------FAC-------   -------FAC-------->`
 	
`  :`
 	
_____
 	
1. Initiate 2 calls from the UNI A (IUT).
 	
2. Assist 1st call set up on the left side (SPC).
 	
3. Assist 2nd call set up on the right side (SPB).
 	
4. Send back the received CTRef with "no loop exists" indication.
 	
5. FAC activating the ECT service.				

TSS ECT/	TP ISS_V_11_6	ISUP '97 reference 7.5.2.1.1.2.1/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/2	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Loop prevention procedure - successful response.
To verify that the local exchange controlling the ECT can successfully perform a call transfer if a **LOP** with **loop prevention indicator** set to "response" is received and "no loop exists", and the call identity matches the one used by the IUT.
Pre-test conditions.
Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.

```
SPC                     SPA                     SPB

     1st call                  2nd call

 <-------IAM-------

 -------ACM------>

 -------ANM------>

 <-------CPG------- hold 1st call

                         -------IAM------->

                         <------ACM--------

                         <------ANM--------

 <-------LOP-------    -------LOP------->

 -------LOP------>    <------LOP--------

 <-------FAC-------    -------FAC------>

    :
```
_____

1. Initiate 2 calls from the UNI A (IUT).

2. Assist 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. Send back the received CTRef with "no loop exists" indication.

5. FAC activating the ECT service (GenNot:"call transfer, active").

TSS ECT/	TP ISS_I_11_7	ISUP '97 reference 7.5.2.1.1.2.1/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/2	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Loop prevention procedure - wrong call transfer identity ignored.
To verify that the local exchange controlling the ECT disregards the **LOP** with **loop prevention indicator** set to
"response" and "no loop exists", if the call transfer identity does not match the one used by the IUT.
Pre-test conditions.
Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.

```
SPC                     SPA                     SPB

    1st call                  2nd call

 <-------IAM-------

 -------ACM------>

 -------ANM------>

 <-------CPG------- hold 1st call

                    -------IAM------->

                    <------ACM--------

                    <------ANM--------

 <-------LOP-------  -------LOP------->

                    <------LOP-------- (to be disregarded)

 -------LOP------>  <------LOP--------

 <-------FAC-------  -------FAC------>

    :

_____
```

1. Initiate 2 calls from the UNI A (IUT).

2. Assist 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. Send back an altered (incremented) CTRef with "no loop exists" indication, to be
disregarded.

5. Send back the received CTRef with "no loop exists" indication.

6. FAC activating the ECT service.

TSS ECT/	TP ISS_I_11_8	ISUP '97 reference 7.5.2.1.1.2.1/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/2	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Loop prevention procedure - unsuccessful (loop exists).

To verify that the local exchange controlling the ECT rejects the call transfer if the **LOP** is received with **loop prevention indicator** set to "request" and the **call transfer reference** matches the one used by the IUT.

Pre-test conditions.

Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.

```
SPC                     SPA                     SPB

    1st call                  2nd call

 <-------IAM-------

 -------ACM------>

 -------ANM------>

 <-------CPG------- hold 1st call

                      -------IAM-------->

                      <------ACM--------

                      <------ANM--------

 <-------LOP-------  -------LOP-------->

 -------LOP------>  <------LOP--------- (received messages are returned)

 <-------REL-------  ------REL------->

 -------RLC------>  <------RLC---------
```
_____

1. Initiate 2 calls from the UNI A (IUT).

2. Assist 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. Send back the received CTRef with LOPInd "request" (identical to the one received).

5. Call is rejected.

TSS ECT/	TP ISS_V_11_9	ISUP '97 reference 7.5.2.1.1.2.1, 7.6.2/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/2	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Loop prevention procedure - unsuccessful (interaction with ECT).
To verify that the local exchange controlling the ECT rejects the call transfer if the **LOP** is received with **loop prevention indicator** set to "response" and "simultaneous transfer" in case of interaction with ECT.
Pre-test conditions.
Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.
 	
`SPC                     SPA                     SPB`
 	
`    1`st` call               2`nd` call`
 	
` <-------IAM-------`
 	
` -------ACM------>`
 	
` -------ANM------>`
 	
` <-------CPG------- hold 1`st` call`
 	
`                    -------IAM------->`
 	
`                    <------ACM--------`
 	
`                    <------ANM--------`
 	
` <-------LOP-------  -------LOP------->`
 	
` -------LOP------>  <------LOP-------- ("simultaneous transfer")`
 	
` <-------REL-------  -------REL------>`
 	
` -------RLC------>  <------RLC--------`
 	
_____
 	
1. Initiate 2 calls from the UNI A (IUT).
 	
2. Assist 1`st` call set up on the left side (SPC).
 	
3. Assist 2`nd` call set up on the right side (SPB).
 	
4. Send back the received CTRef with LOPInd "response" set to "simultaneous transfer".
 	
5. The call is rejected.				

TSS ECT/	TP ISS_V_11_10	ISUP '97 reference 7.5.2.1.1.2.1/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/2 AND PICS A.14/8	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Loop prevention procedure - unsuccessful (interworking situation).

To verify that the local exchange controlling the ECT rejects the call transfer if the **LOP** is received with **loop prevention indicator** set to "response" and "insufficient information" from e.g. interworking situations.

Pre-test conditions.

Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.

```
SPC                     SPA                     SPB

     1st call                2nd call

 <-------IAM-------

 -------ACM------>

 -------ANM------>

 <-------CPG------- hold 1st call

                     -------IAM------->

                     <------ACM--------

                     <------ANM--------

 <-------LOP-------  -------LOP------->

 -------LOP------>  <------LOP-------- ("insufficient information")

 <-------REL-------  -------REL------>

 -------RLC------>  <------RLC--------
```

_____

1. Initiate 2 calls from the UNI A (IUT).

2. Assist 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. Send back the received CTRef with LOPInd "response" set to "insufficient information".

5. Call is rejected.

TSS ECT/	TP ISS_V_11_11	ISUP '97 reference 7.5.2.1.1.2.1/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/2 AND PICS A.14/9	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Loop prevention procedure - successful (interworking situation).
To verify that the local exchange controlling the ECT completes the call transfer if the **LOP** is received with **loop prevention indicator** set to "response" and "insufficient information" from e.g. interworking situations.
Pre-test conditions.
Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.

```
SPC                     SPA                    SPB

    1st call                2nd call

 <-------IAM-------

 -------ACM------>

 -------ANM------>

 <-------CPG------- hold 1st call

                    -------IAM------->

                    <------ACM--------

                    <------ANM--------

 <-------LOP------- -------LOP------->

 -------LOP------> <------LOP-------- ("insufficient information")

 <-------FAC------- ------FAC------>

   :
```
_____

1. Initiate 2 calls from the UNI A (IUT).

2. Assist 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. Send back the received CTRef with LOPInd "response" set to "insufficient information".

5. FAC activating the ECT service.

TSS ECT/	TP ISS_V_11_12	ISUP '97 reference 7.5.2.1.1.2.1/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/2 AND PICS A.14/4	ITU-T Recommendation Q.788 [29] reference None
Test Purpose				

Loop prevention procedure - unsuccessful on timer expiry.

To verify that the local exchange controlling the ECT rejects the call transfer if no **LOP** is received within T_{ECT} expiry.

Pre-test conditions.

Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.

```
SPC                       SPA                    SPB

     1st call                   2nd call

 <-------IAM-------

 -------ACM------>

 -------ANM------>

 <-------CPG------- hold 1st call

                      -------IAM------->

                      <------ACM--------

                      <------ANM--------

 <-------LOP-------  -------LOP------->

         No LOP response is sent, TECT expires

 <-------REL-------  -------REL------->

 -------RLC------>  <------RLC--------
```

_____

1. Initiate 2 calls from the UNI A (IUT).

2. Assist 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. Call is rejected.

TSS ECT/	TP ISS_V_11_13	ISUP '97 reference 7.5.2.1.1.2.1/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/2 AND PICS A.14/5	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Loop prevention procedure - successful on timer expiry.

To verify that the local exchange controlling the ECT completes the call transfer if no **LOP** is received within **T$_{ECT}$** expiry.

Pre-test conditions.

Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.

```
SPC                     SPA                     SPB

    1st call                 2nd call

 <-------IAM-------

 -------ACM------>

 -------ANM------>

 <-------CPG------- hold 1st call

                    -------IAM------->

                    <------ACM-------

                    <------ANM-------

 <-------LOP-------  -------LOP------->

         No LOP response is sent, TECT expires

 <-------FAC-------  -------FAC------->

   :

_____

1. Initiate 2 calls from the UNI A (IUT).

2. Assist 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. TECT expired, release the call.

5. FAC activating the ECT service.

6. The call should not be released.
```

TSS ECT/	TP ISS_V_11_14	ISUP '97 reference 7.5.2.1.1.2.2 a)/ITU-T Recommendation Q.732.7 [10]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Facility message with generic notification sent to the remote user.
To verify that the local exchange controlling the ECT can successfully initiate a call transfer by sending **FAC** with the
generic notification set to "call transfer, active" or "call transfer, alerting" and the **service activation** parameter set
to "call transfer".
Pre-test conditions.
Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.
Case a)

```
SPC                    SPA                    SPB

    1st call                2nd call

 --------IAM------>

 <-------ACM-------

 <-------ANM-------

 <-------CPG------- hold 1st call

                      -------IAM------->

                      <------ACM--------

                      <------ANM--------

 <-------FAC-------   -------FAC------->

  > call transfer, active <      > call transfer, active <

  :
_____
```

1. Assist call setup for the 1st call and then initiate the 2nd call at the UNI A (IUT).

2. Initiate the 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. FAC with GenNot:"call transfer, active" and ServAct: "call transfer".

Case b)

```
SPC                    SPA                    SPB

    1st call                2nd call

 --------IAM------->

 <-------ACM-------

 <-------ANM-------

 <-------CPG------- hold 1st call

                      -------IAM------>

                      <------ACM-------

 <-------FAC-------   -------CPG------>

> call transfer, alerting <      call transfer, active
```

TSS ECT/	TP ISS_V_11_14	ISUP '97 reference 7.5.2.1.1.2.2 a)/ITU-T Recommendation Q.732.7 [10]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None

```
 <-------FAC-------   <------ANM-------

     call transfer, active

   :

_____

1. Assist call setup for the 1st call and then initiate the 2nd call at the UNI A (IUT).

2. Initiate the 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. CPG (progress) with GenNot:"call transfer, active".
```

TSS ECT/	TP ISS_V_11_15	ISUP '97 reference 7.5.2.1.1.2.2 a)/ITU-T Recommendation Q.732.7 [10]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Call progress message with generic notification sent to the remote user.
To verify that the local exchange (controlling the ECT) can successfully initiate a call transfer by sending **CPG** with the **generic notification** set to "call transfer, active" and the **service activation** parameter set to "call transfer".
Pre-test conditions.
Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.

```
SPC                     SPA                  SPB

     1st call                2nd call

 --------IAM------->

 <-------ACM-------

 <-------ANM-------

 <-------CPG------- hold 1st call

                     -------IAM------>

                     <------ACM-------

 <-------FAC-------   -------CPG------>

call transfer, alerting  > call transfer, active <

 <-------FAC-------   <------ANM-------

   call transfer, active

   :

_____

1. Assist call setup for the 1st call and then initiate the 2nd call at the UNI A (IUT).

2. Initiate the 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. CPG (progress) with GenNot:" call transfer, active" and ServAct: "call transfer".
```

TSS ECT/	TP ISS_V_11_16	ISUP '97 reference 7.5.2.1.1.2.2 b)/ITU-T Recommendation Q.732.7 [10]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Facility message send upon receipt of the ANM when the ECT is invoked while one call is alerting.

To verify that, in case the ECT is invoked while one call is alerting, as soon as the local exchange (controlling the ECT) receives the **ANM**, it can successfully send to the other remote user the **FAC** with **service activation** set to "call transfer" and the **generic notification** set to "call transfer, active".

Pre-test conditions.

Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.

```
SPC                    SPA                    SPB

     1st call                2nd call

 -------IAM------>

 <-------ACM-------

 <-------ANM-------

 <-------CPG------- hold 1st call

                      -------IAM------>

                      <------ACM-------

 <-------FAC-------    ------CPG------>

 call transfer, alerting    call transfer, active

 <-------FAC-------   <------ANM-------

 > call transfer, active <

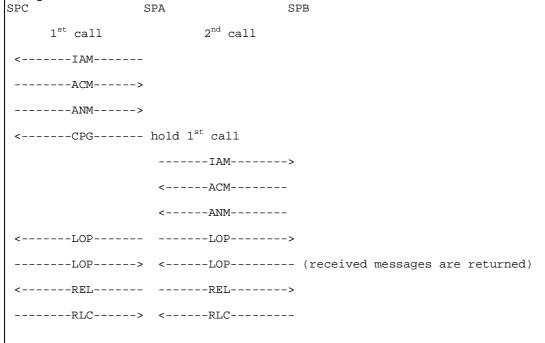   :
```
_____

1. Assist call setup for the 1st call and then initiate the 2nd call at the UNI A (IUT).

2. Initiate the 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. CPG (progress) with GenNot:" call transfer, active".

TSS ECT/	TP ISS_V_11_17	ISUP '97 reference 7.5.2.1.1.2.2 b)/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Capability of sending the additional connected number in the call transfer number parameter when the ECT is invoked while one call is alerting.
To verify that, in case the ECT is invoked while one call is alerting, the **FAC** sent to the other remote user upon receipt of the **ANM** conveys the **call transfer number** parameter with the information received in the **generic number** parameter if both the **connected number** and an additional connected number in the **generic number** are received in the **ANM**.
Pre-test conditions.
Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.

```
SPC                     SPA                 SPB

     1st call                2nd call

 <-------IAM-------

 -------ACM------>

 -------ANM------>

 <-------CPG------- hold 1st call

                     -------IAM------->

                     <------ACM--------

 <-------FAC-------  -------CPG------->

 <-------FAC-------  <------ANM-------
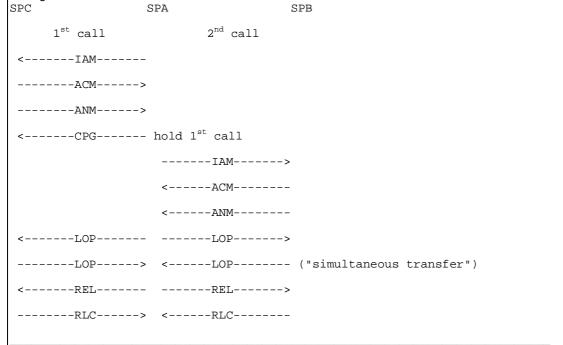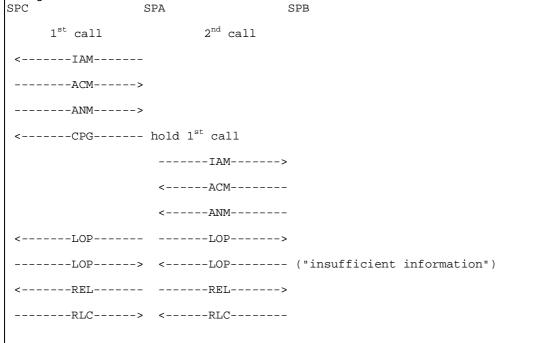
remote addConNb in CTNb from UNI at SPB

  :
_____

1. Initiate 2 calls from the UNI A (IUT).

2. Assist 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. CPG (progress) with GenNot:" call transfer, active".
```

TSS ECT/	TP ISS_V_11_18	ISUP '97 reference 7.5.2.1.1.2.2 b)/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.14/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Capability of sending the connected number in the call transfer number parameter when the ECT is invoked while one call is alerting.
To verify that, in case the ECT is invoked while one call is alerting, the **FAC** sent to the other remote user upon receipt of the **ANM** conveys the **call transfer number** parameter with the information received in the **connected number** parameter if only the **connected number** is received in the **ANM**.
Pre-test conditions.
Arrange the data in the IUT so that the served user subscribes to HOLD and ECT.

```
SPC                     SPA                     SPB

     1st call               2nd call

 <-------IAM-------

 -------ACM------>

 -------ANM------>

 <-------CPG------- hold 1st call

                        -------IAM------->

                        <------ACM--------

 <-------FAC-------  -------CPG------->

 <-------FAC-------  <------ANM-------

remote ConNb in CTNb from UNI at SPB

  :

_____

1. Initiate 2 calls from the UNI A (IUT).

2. Assist 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. CPG (progress) with GenNot:" call transfer, active".
```

TSS ECT/	TP ISS_V_11_19	ISUP '97 references 7.4, 7.5.2.2.1, 7.5.2.3.1, 7.5.2.4.1/ITU-T Recommendation Q.732.7 [10]	Selection expression IntermE AND PICS A14/2	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Transparent transfer of information of the loop prevention procedure message. To verify that the exchange can successfully pass on the **loop prevention indicator** and the **call transfer reference** in the **LOP** related to the call transfer service. ``` SPC SPA SPB --------IAM------> -------IAM-------> <-------ACM------- <------ACM--------- <-------ANM------- <------ANM--------- --------LOP------> -------LOP-------> <-------LOP------- <------LOP--------- --------FAC------> -------FAC-------> : ``` _____ 1. Initiate a call from the UNI at SPC. 2. Send back the received CTRef with "no loop exists" indication. 3. FAC activating the ECT service.				

TSS ECT/	TP ISS_V_11_20	ISUP '97 references 7.4, 7.5.2.2.1, 7.5.2.3.1, 7.5.2.4.1/ITU-T Recommendation Q.732.7 [10]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Transparent transfer of information in the FAC or CPG.
To verify that the exchange can successfully pass on the **access transport** and the **generic notification indicator** in the **FAC** or **CPG** related to the call transfer service.
Case a)

```
SPC                 SPA                  SPB

 --------IAM------>  -------IAM-------->

 <-------ACM-------  <------ACM---------

 <-------ANM-------  <------ANM---------

 --------FAC------>  -------FAC--------> call transfer, active

 --------FAC------>  -------FAC--------> sub-address in ATP from UNI at E

 <-------FAC-------  <------FAC--------- sub-address in ATP from UNI at B

   :
```
_____

1. Initiate a call from the UNI at SPC. UNI at SPC will initiate call transfer.

2. FAC with GenNot: "call transfer, active".

3. Receive sub-address from UNI at SPE, beyond SPC.

4. Send sub-address of UNI at SPB.

Case b)

```
SPC                 SPA                  SPB

 --------IAM------>  -------IAM-------->

 <-------ACM-------  <------ACM---------

 --------CPG------>  -------CPG--------> call transfer, active

 <-------ANM-------  <------ANM---------

 --------FAC------>  -------FAC--------> sub-address in ATP from UNI at E

 <-------FAC-------  <------FAC--------- sub-address in ATP from UNI at B

   :
```
_____

1. Initiate a call from the UNI at SPC. UNI at SPC will initiate call transfer.

2. CPG with GenNot: "call transfer, active".

3. Receive sub-address from UNI at SPE, beyond SPC.

4. Send sub-address of UNI at SPB.

TSS ECT/	TP ISS_V_11_21	ISUP '97 references 7.3, 7.5.2.3.1, 7.5.2.4.1/ITU-T Recommendation Q.732.7 [10]	Selection expression Gateway AND PICS A.14/6	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Call transfer number - removal of number.
To verify that the exchange removes the **call transfer number** in the **FAC** or **CPG** before sending it to the next exchange**,** if its indicator is set to "presentation restricted" and there is no bilateral agreement.
```
Case a)

SPC                     SPA                     SPB

 --------IAM------>  -------IAM------->

 <-------ACM-------  <------ACM--------

 <-------ANM-------  <------ANM--------

 --------FAC------>  -------FAC------> CTNb removal

   :

_____

1. Initiate a call from the UNI at SPC. UNI at SPC will initiate call transfer.

2. FAC with GenNot: "call transfer, active" and CTNb removed.

Case b)

SPC                     SPA                     SPB

 --------IAM------>  -------IAM-------->

 <-------ACM-------  <------ACM---------

 --------CPG------>  -------CPG--------> CTNb removal

 <-------ANM-------  <------ANM---------

   :

_____

1. Initiate a call from the UNI at SPC. UNI at SPC will initiate call transfer.

2. CPG (progress) with GenNot: "call transfer, active" and no CTNb.
```

TSS ECT/	TP ISS_V_11_22	ISUP '97 references 7.3, 7.5.2.3.1/ITU-T Recommendation Q.732.7 [10]	Selection expression OutIE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Call transfer number - conversion to international number.
To verify that the IUT converts the **call transfer number** to international format. The nature of address indicator shall be set to "international number".
Case a)
 	
``
SPC   SPA   SPB
 	
 --------IAM------> -------IAM------->
 	
 <-------ACM------- <------ACM-------
 	
 <-------ANM------- <------ANM-------
 	
 --------FAC------> -------FAC-------> CTNb converted to international format
 	
   :
``
_____
 	
1. Initiate a call from the UNI at SPC. UNI at SPC will initiate call transfer.
 	
2. FAC with GenNot: "call transfer, active" and international CTNb.
 	
Case b)
 	
``
SPC   SPA   SPB
 	
 --------IAM------> -------IAM------->
 	
 <-------ACM------- <------ACM-------
 	
 --------CPG------> -------CPG-------> CTNb converted to international format
 	
 <-------ANM------- <------ANM-------
 	
   :
``
_____
 	
1. Initiate a call from the UNI at SPC. UNI at SPC will initiate call transfer.
 	
2. CPG with GenNot: "call transfer, active" and international CTNb.				

TSS ECT/	TP ISS_V_11_23	ISUP '97 reference 7.3, 7.5.2.4.1/ITU-T Recommendation Q.732.7 [10]	Selection expression IncIE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Call transfer number - removal of own country code.
To verify that the IUT removes the country code in the address signals of the **call transfer number** if it is the network's own country code. The nature of address indicator shall be set to "national (significant) number".
Case a)
 	
`SPC                 SPA                 SPB`
 	
` --------IAM------>  -------IAM-------->`
 	
` <-------ACM-------  <------ACM---------`
 	
` <-------ANM-------  <------ANM---------`
 	
` --------FAC------>  -------FAC--------> CTNb converted to national format`
 	
`   :`
 	
`_____`
 	
1. Initiate a call from the UNI at SPC. UNI at SPC will initiate call transfer.
 	
2. FAC with GenNot: "call transfer, active" and national (significant) CTNb.
 	
Case b)
 	
`SPC                 SPA                 SPB`
 	
` --------IAM------>  -------IAM-------->`
 	
` <-------ACM-------  <------ACM---------`
 	
` --------CPG------>  -------CPG--------> CTNb converted to national format`
 	
` <-------ANM-------  <------ANM---------`
 	
`   :`
 	
`_____`
 	
1. Initiate a call from the UNI at SPC. UNI at SPC will initiate call transfer.
 	
2. CPG with GenNot: "call transfer, active" and national (significant) CTNb.				

TSS ECT/	TP ISS_V_11_24	ISUP '97 reference 7.5.2.1.1.3 a)/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND BCall PICS A.13/11 AND BCall PICS A.13/13	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
ECT - interaction with echo control.
To verify that the local exchange (controlling the ECT) can successfully initiate echo control procedures, when the total propagation delay for the two legs of the call to be transferred requires usage of echo control devices. The information to be summed is received in the **propagation delay counter** of the **IAM** for incoming calls and in the **call history information** of the **ANM/CON** for outgoing calls.
NOTE: The used PICS are defined for the basic call (BCall).
Pre-test conditions.
Arrange the data in the IUT so that the served user subscribes to ECT.

```
SPC                        SPA                      SPB

    1st call                  2nd call

 ----IAM(PDC=50)-->

 <-------ACM-------

 <-------ANM-------

 <-------CPG------- hold 1st call

                         -------IAM-------->

                         <------ACM---------

                         <--ANM(CHInf=50)---

 <-------FAC-------     ------FAC------->

   :

_____

1. Assist call setup for the 1st call and then initiate the 2nd call at the UNI A (IUT).

2. Initiate the 1st call from SPC to the IUT (SPA) using the number TSP_Nb_A on the 1st
B-channel.  The stimulus IAM contains an initial propagation delay value of e.g. 50 ms.
The actual value is stored in PIXIT table.

3. Assist the 2nd call set up from UNI A to the IUT on the 2nd B-channel.

4. Send an ANM with Call history information of e.g. 50 ms.

5. FAC with GenNot: "call transfer, active". The sum (in this case 100 ms) of the
propagation delays on the two routes would require echo controlling devices. Are echo
control devices enabled for the connection (both incoming/outgoing at the local
exchange) or is some better placement searched?

For further study,(see also CONF test case ISS_10_1).
```

TSS ECT/	TP ISS_V_11_25	ISUP '97 reference 7.7/ITU-T Recommendation Q.732.7 [10]	Selection expression IWorkE AND PICS A.14/7	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Loop prevention procedure - Interworking with protocols not supporting loop prevention. To verify that the IUT is able to support call control interworking between ISUP '97 and protocols not supporting the loop prevention procedure, and return a **LOP** (response) message with the indication "insufficient information" in response to a **LOP** (request) message.				

```
SPC                     SPA                      SPB

 <-------IAI-------   <------IAM---------

 --------ACM------>   -------ACM-------->

 --------ANC------>   -------ANM-------->

                      <------LOP---------

                      -------LOP-------->

                      <------FAC--------- (PICS A.14/9 = YES)

   :


                                 OR

 <-------CCL-------   <-------REL-------- (PICS A.14/9 = NO)

   :

_____

1. Assist a call set up from the UNI at SPB on a non-ISUP route.

2. Send LOP request.

3. Receive LOP response with the same CTRef and "insufficient information".

4. Complete call (YES to PICS question A.14/9) and send FAC with GenNot: "call
transfer, active".

5. Reject call (YES to PICS question A.14/8).

See also ECT test cases ISS_V_11_10 and ISS_V_11_11.
```

TSS ECT/	TP ISS_V_11_26	ISUP '97 reference 7.7/ITU-T Recommendation Q.732.7 [10]	Selection expression IWorkE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Notification - Interworking with protocols not supporting the notification mechanism or the simple service activation procedure.
To verify that the exchange discards the **FAC** (always) and the **CPG** (if received during alerting) and successfully completes the call transfer.

```
Case a)

SPC non-ISUP     SPA                      SPB

 <-------IAI-------  <------IAM---------

 -------ACM------>  -------ACM------->

 -------ANC------>  -------ANM------->

                    <------FAC---------  call transfer, active

   :

_____

1. Assist a call set up from the UNI at SPB on a non-ISUP route.

2. Send FAC with GenNot: "call transfer, active".

3. The call should complete.

Case b)

SPC non-ISUP     SPA                      SPB

 <-------IAI-------  <------IAM---------

 -------ACM------>  -------ACM------->

                    <------CPG---------  call transfer, active

 -------ANC------>  -------ANM------->

   :

_____

1. Assist a call set up from the UNI at SPB on a non-ISUP route.

2. Send CPG with GenNot: "call transfer, active".

3. The call should complete.
```

TSS ECT/	TP ISS_V_11_27	ISUP '97 reference 7.6.13.1/ITU-T Recommendation Q.732.7 [10]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

ECT - Interaction with UUS1.

To verify that if the ECT is invoked while a remote user is alerted, the originating exchange discards the **user-to-user information** received in the **ANM** or in the **REL** from that remote user.

Pre-test conditions.

Arrange the data in the IUT so that the served user subscribes to ECT and UUS1.

Case a)

```
SPC                     SPA                     SPB

     1st call                2nd call

 --------IAM------->

 <-------ACM-------

 <-------ANM-------

 <-------CPG------- hold 1st call

                       ----IAM (UUInf)--->

                       <---ACM (UUInf)----

 <-------FAC-------   --------CPG------->

 call transfer, alerting   call transfer, active

 <-------FAC-------   <---ANM (UUInf)----

 call transfer, active

   :

_____
```

1. Assist call setup for the 1st call and then initiate the 2nd call (with UUInf) at the UNI A (IUT).

2. Initiate the 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. CPG (progress) with GenNot:" call transfer, active".

5. The 2nd call is answered with UUInf in the ANM, which is to be discarded.

6. Get the verdict from the access side, "pass" if UUInf discarded.

Case b)

```
SPC                     SPA                     SPB

     1st call                2nd call

 --------IAM------->

 <-------ACM-------

 <-------ANM-------

 <-------CPG------- hold 1st call

                       ----IAM (UUInf)-->

                       <---ACM (UUInf)---
```

TSS ECT/	TP ISS_V_11_27	ISUP '97 reference 7.6.13.1/ITU-T Recommendation Q.732.7 [10]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None
<------FAC------- -------CPG-------> call transfer, alerting call transfer, active <------REL------- <---REL (UUInf)--- -------RLC------> -------RLC-------> _____ 1. Assist call setup for the 1st call and then initiate the 2nd call (with UUInf) at the UNI A (IUT). 2. Initiate the 1st call set up on the left side (SPC). 3. Assist 2nd call set up on the right side (SPB). 4. CPG (progress) with GenNot:" call transfer, active". 5. The 2nd call is released with UUInf in the REL, which is to be discarded. 6. Get the verdict from the access side, "pass" if UUInf discarded.				

TSS ECT/	TP ISS_V_11_28	ISUP '97 reference 7.6.13.2/ITU-T Recommendation Q.732.7 [10]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

ECT - Interaction with UUS2.

To verify that if the ECT is invoked while a remote user is alerted, the exchange discards the **USR** messages received after the call transfer invocation until the **ANM** from that remote user is received.

Pre-test conditions.

Arrange the data in the IUT so that the served user subscribes to ECT and UUS2.

```
SPC                     SPA                  SPB

    1st call                 2nd call

 --------IAM------->

 <-------ACM-------

 <-------ANM-------

 <-------CPG------- hold 1st call

                     -------IAM------->

                     <------ACM-------

                     <------USR-------

 <-------FAC-------    -------CPG------->

call transfer, alerting   call transfer, active

                     <------USR-------

 <-------FAC-------    <------ANM-------

 call transfer, active

     :
```
_____

```
1. Assist call setup for the 1st call and then initiate the 2nd call (with UUInf) at the
UNI A (IUT).

2. Initiate the 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB) and check the UUS2 request.

4. Accept the requested UUS2 service.

5. Send the 1st USR message. The UUInf should be received on the access side.

6. CPG (progress) with GenNot:"call transfer, active".

7. Send the 2nd USR message. The UUInf should not be received on the access side.

8. Get the verdict from the access side, "pass" if UUInf discarded.
```

TSS ECT/	TP ISS_V_11_29	ISUP '97 reference 7.6.13.3/ITU-T Recommendation Q.732.7 [10]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
ECT - Interaction with UUS3.
To verify that the exchange discards the **USR** messages if received after the call transfer invocation until the call transfer is completed, i.e. either **FAC** is sent to the remote users when both calls are already answered or **ANM** is received from a remote user when one of the calls is alerting.
Pre-test conditions.
Arrange the data in the IUT so that the served user subscribes to ECT and UUS3.

```
SPC                     SPA                    SPB

     1st call                 2nd call

 --------IAM------>

 <-------ACM-------

 <------ANM-------

 <-------CPG------- hold 1st call

                        -------IAM------->

                        <------ACM-------

 --------USR------->

 <-------FAC--------   -------CPG------>

call transfer, alerting   call transfer, active

 --------USR------->

 <-------FAC--------   <------ANM-------

call transfer, active

    :
_____

1. Assist call setup for the 1st call and then initiate the 2nd call (with UUInf) at the
UNI A (IUT).

2. Initiate the 1st call set up on the left side (SPC).

3. Assist 2nd call set up on the right side (SPB).

4. CPG (progress) with GenNot:"call transfer, active".

5. Get the verdict from the access side, "pass" if UUInf discarded.

NOTE:   The first part of the purpose has not been implemented because the time window
        between call transfer invocation and completion when both calls are answered is
        too small to permit sending of USR exactly within this interval.
```

TSS ECT/	TP ISS_V_11_30	ISUP '97 reference Figure 7-7/ITU-T Recommendation Q.732.7 [10]	Selection expression Local AND PICS A.2/7	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

ECT - Interaction with SUB.

To verify that if the IUT is able to receive and re-send the sub-address in the **access transport** parameter in the **FAC** message in either direction after activating the call transfer service. These are the calling sub-address for incoming calls and the connected sub-address for outgoing calls.

Pre-test conditions.

Arrange the data in the IUT so that the served user subscribes to ECT.

```
SPC                     SPA                    SPB

     1st call                2nd call

 --------IAM------>

 <-------ACM-------

 <------ANM-------

 <-------CPG------- hold 1st call

                     -------IAM------->

                     <------ACM-------

                     <------ANM-------

 <-------FAC-------   -------FAC------> call transfer activation

 <-------FAC-------   -------FAC------>

 sub-address in ATP sub-address in ATP

   from UNI at B         from UNI at C

   :

_____
```

1. Assist call setup for the 1st call and then initiate the 2nd call at the UNI A (IUT).

2. Initiate the 1st call from SPC to the IUT (SPA) using the number TSP_Nb_A on the 1st B-channel.

3. Assist the 2nd call set up from UNI A to the IUT on the 2nd B-channel.

4. Answer the call by specifying a connected number and a connected sub-address.

5. FAC with GenNot:"call transfer, active", ServAct: "call transfer".

6. Receive sub-address from UNI at SPC.

7.3.12 Call diversion (CFB, CFNR, CFU, CD)

CFNR		Call forwarding on no reply	
	CFNR(A)	CFNR - option A - late release	
	CFNR(B)	CFNR - option B - immediate release	
CD(a)		CD during alerting	call diversion
	CD(a,A)	CD during alerting - option A - late release	may occur
	CD(a,B)	CD during alerting - option B - immediate release	
CFB(u,e)		CFB user determined with early ACM	
CD(i,e)		CD immediate response with early ACM	
CFU		Call forwarding unconditional	
CFB(n)		CFB network determined	call is
CFB(u,l)		CFB user determined with late ACM	diverting
CD(i,l)		CD immediate response with late ACM	
CD(i)		CD immediate response	

TSS CDIV/	TP ISS_V_12_1	ISUP '97 reference 2.5.2.1.1/ITU-T Recommendation Q.732 [37]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference 2.6.1

Test Purpose
"Call is diverting" indication received in ACM.
To verify that a call can be successfully established, if diversion occurs. The **ACM** contains the **generic notification indicator** set to "call is diverting", the **call diversion information** and the **redirection number**.
Applicable redirection reason in the **call diversion information**:
"busy"   CFB(n); CFB(u,l)
"unconditional"   CFU
"deflection immediate response"   CD(i,l)

```
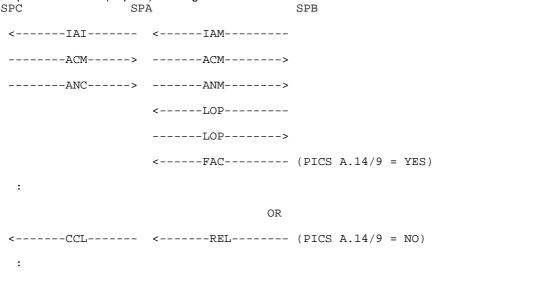Case a)

access              SPA                    SPB                      SPD

 -------setup-----> --------IAM------->  (--------IAM------>)

                    <------ACM-------

 <----alerting ----  <-------CPG-------  (<-------ACM-------)

          ... ringing tone ...

 <------answer-----  <-------ANM-------  (<-------ANM------->)

   :

_____

1. The stimulus access will initiate a call set up.

2. Redirection reason is "busy".

3. CPG (alerting) coded as if it has been mapped from ACM including BCI.

Case b)

access              SPA                    SPB                      SPD

 -------setup-----> --------IAM------>  (--------IAM------>)

                    <------ACM-------

 <----alerting ----  <-------CPG-------  (<-------ACM-------)

      ... ringing tone ...

 <------answer-----  <-------ANM-------  (<-------ANM------->)

   :
```

TSS CDIV/	TP ISS_V_12_1	ISUP '97 reference 2.5.2.1.1/ITU-T Recommendation Q.732 [37]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference 2.6.1
_____
1. The stimulus access will initiate a call set up. 2. Redirection reason is "unconditional". 3. CPG (alerting) coded as if it has been mapped from ACM including BCI.

Case c)
 	
access   SPA   SPB   SPD
 	
 -------setup-----> --------IAM------> (--------IAM------->)
 	
                    <-------ACM-------
 	
 <----alerting ---- <-------CPG------- (<-------ACM--------)
 	
          ... ringing tone ...
 	
 <------answer----- <-------ANM------- (<-------ANM--------)
 	
  :
 	
1. The stimulus access will initiate a call set up.
 	
2. Redirection reason is "deflection immediate response".
 	
3. CPG (alerting) coded as if it has been mapped from ACM.

TSS CDIV/	TP ISS_V_12_2	ISUP '97 reference 2.5.2.1.1/ITU-T Recommendation Q.732 [37]	Selection expression OLE	ITU-T Recommendation Q.788 [29] references 2.6.3, 2.7.1

Test Purpose
"Call diversion may occur" received in ACM.
To verify that a call can be successfully established, if diversion may occur. The **ACM** indicates that "call diversion may occur" in the **optional backward call indicators**. The following **CPG** contains the **generic notification indicator** set to "call is diverting", the **call diversion information** and the **redirection number**, if diversion occurs.
Applicable redirection reason in the **call diversion information**:
"busy"   CFB(u,e)
"no reply"   CFNR
"deflection during alerting" CD(a)
"deflection immediate response"   CD(i,e)
Case a)

```
access              SPA                    SPB                    SPD

 -------setup-----> --------IAM------->

                    <-------ACM--------

   (no indication) <-------CPG-------- (--------IAM------->)

 <----alerting ---- <-------CPG-------- (<-------ACM-------)

           ... ringing tone ...

 <-----answer------ <-------ANM-------- (<-------ANM-------)

  :

_____
```

1. The stimulus access will initiate a call set up.

2. "Call diversion may occur" in Event indicator.

3. "Call forwarded on busy" in Event indicator and also Call diversion information.

4. CPG (alerting) coded as if it has been mapped from ACM, with RnNbRes parameter.

Case b)

```
access              SPA                    SPB                    SPD

 -------setup-----> --------IAM------->

                    <-------ACM--------

   (progress)       <-------CPG-------- (--------IAM------->)

 <----alerting ---- <-------CPG-------- (<-------ACM-------)

           ... ringing tone ...

 <-----answer------ <-------ANM-------- (<-------ANM-------)

  :

_____
```

1. The stimulus access will initiate a call set up.

2. "Subscriber free" in CdPSI & "Call diversion may occur" in OBCI.

3. CPG (Progress) in Event indicator and also Call diversion information ("CFNR"),
Generic notification, and redirection Number.

TSS CDIV/	TP ISS_V_12_2	ISUP '97 reference 2.5.2.1.1/ITU-T Recommendation Q.732 [37]	Selection expression OLE	ITU-T Recommendation Q.788 [29] references 2.6.3, 2.7.1

4. CPG (alerting) coded as if it has been mapped from ACM, with RnNbRes parameter, and including BCI.

Case c)

```
access            SPA                    SPB                   SPD

 -------setup-----> --------IAM------->

                   <-------ACM--------

   (no indication) <-------CPG-------- (--------IAM------->)

 <----alerting ---- <-------CPG-------- (<-------ACM--------)

          ... ringing tone ...

 <-----answer------ <-------ANM-------- (<-------ANM--------)

  :
```
_____

1. The stimulus access will initiate a call set up.

2. "Subscriber free" in CdPSI & "Call diversion may occur" in Event indicator.

3. CPG(Progress) in Event indicator and also Call diversion information, generic notification, and redirection number.

4. CPG(alerting) coded as if it has been mapped from ACM, with RnNbRes parameter, and including BCI.

Case d)

```
access            SPA                    SPB                   SPD

 -------setup-----> --------IAM------->

                   <-------ACM--------

   (no indication) <-------CPG-------- (--------IAM------->)

 <----alerting ---- <-------CPG-------- (<-------ACM--------)

          ... ringing tone ...

 <-----answer------ <-------ANM-------- (<-------ANM--------)

  :
```
_____

1. The stimulus access will initiate a call set up.

2. "Subscriber free" in CdPSI & "Call diversion may occur" in Event indicator.

3. "Deflection immediate response" in Event indicator and also Call diversion information.

4. CPG (alerting) coded as if it has been mapped from ACM, with RnNbRes parameter.

TSS CDIV/	TP ISS_V_12_3	ISUP '97 references 2.4.2, table 2-1/ITU-T Recommendation Q.732 [37]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Redirection number - presentation allowed - according to the notification subscription option.
To verify that the originating exchange makes the **redirection number** available to the calling access signalling
system, if the notification subscription option of the **call diversion information** is coded "010 presentation allowed
with redirection number".
The **redirection number restriction** parameter is set to "00 presentation allowed".

```
access                 SPA                   SPB                    SPD

 -------setup----->  --------IAM------->  (--------IAM------->)

                     <-------ACM--------

 <----alerting ----  <-------CPG--------  (<-------ACM-------)

         ... ringing tone ...

 <-----answer------  <-------ANM--------  (<-------ANM-------)

  :

_____

1. The stimulus access will initiate a call set up. The verdict will be set to pass if
the Redirection number is presented on the access.

2. NSO is "presentation allowed with redirection number" (implicit) and RnReas = CFU.

NOTE:   CFU is used as redirection reason, but other reasons are also applicable.

3. Redirection number restriction parameter "presentation allowed" (implicit).
```

TSS CDIV/	TP ISS_V_12_4	ISUP '97 references 2.4.2, table 2-1/ITU-T Recommendation Q.732 [37]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Redirection number - presentation restricted - according to the notification subscription option.
To verify that the originating exchange does not make the **redirection number** available to the calling access signalling system, if the notification subscription option of the **call diversion information** is coded "001 presentation not allowed", "011 presentation allowed without redirection number" or "000 unknown".
The **redirection number restriction** parameter is set to "00 presentation allowed".
`Case a)`
 	
`access                SPA                    SPB                    SPD`
 	
` -------setup-----> --------IAM-------> (--------IAM------->)`
 	
`                    <-------ACM--------`
 	
` <----alerting ---- <-------CPG-------- (<-------ACM-------)`
 	
`         ... ringing tone ...`
 	
` <-----answer------ <-------ANM------- (<-------ANM-------)`
 	
` :`
_____
 	
`1. The stimulus access will initiate a call set up. The verdict will be set to pass if no Redirection number is presented on the access.`
 	
`2. NSO is "presentation allowed with redirection number" (implicit) and RnReas = CFU.`
 	
`NOTE:  CFU is used as redirection reason, but other reasons are also applicable.`
 	
`3. Redirection number restriction parameter "presentation allowed" (implicit/default).`
 	
`Case b)`
 	
`access                SPA                    SPB                    SPD`
 	
` -------setup-----> --------IAM-------> (--------IAM------->)`
 	
`                    <-------ACM--------`
 	
` <----alerting ---- <-------CPG-------- (<-------ACM-------)`
 	
`         ... ringing tone ...`
 	
` <-----answer------ <-------ANM------- (<-------ANM-------)`
 	
` :`
_____
 	
`1. The stimulus access will initiate a call set up. The verdict will be set to pass if no Redirection number is presented on the access.`
 	
`2. NSO is "presentation allowed without redirection number" and RnReas = CFU.`
 	
`NOTE:  CFU is used as redirection reason, but other reasons are also applicable.`
 	
`3. Redirection number restriction parameter "presentation allowed" (implicit).`

TSS CDIV/	TP ISS_V_12_4	ISUP '97 references 2.4.2, table 2-1/ITU-T Recommendation Q.732 [37]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

```
Case c)

access            SPA                  SPB                  SPD

 -------setup-----> --------IAM-------> (--------IAM------->)

                     <-------ACM--------

 <----alerting ---- <-------CPG-------- (<-------ACM-------)

         ... ringing tone ...

 <-----answer------ <-------ANM------- (<-------ANM-------)

 :

_____
```

1. The stimulus access will initiate a call set up. The verdict will be set to pass if no Redirection number is presented on the access.

2. NSO is "unknown" and RnReas = CFU.

NOTE: CFU is used as redirection reason, but other reasons are also applicable.

3. Redirection number restriction parameter "presentation allowed" (implicit/default).

TSS CDIV/	TP ISS_V_12_5	ISUP '97 references 2.4.2, table 2-1/ITU-T Recommendation Q.732 [37]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Redirection number - presentation restricted - according to redirection number restriction parameter.
To verify that the originating exchange does not make the **redirection number** available to the calling access signalling system, if the **redirection number restriction** parameter indicates "01 Presentation restricted".
The notification subscription option of the **call diversion information** is coded "010 Presentation allowed with redirection number".

```
access            SPA                  SPB                  SPD

 -------setup-----> --------IAM-------> (--------IAM------->)

                     <-------ACM--------

 <----alerting ---- <-------CPG-------- (<-------ACM-------)

          ... ringing tone ...

 <-----answer------ <-------ANM-------- (<-------ANM-------)

 :

_____
```

1. The stimulus access will initiate a call set up. The verdict will be set to pass if no Redirection number is presented on the access.

2. NSO is "presentation allowed with redirection number" (implicit) and RnReas = CFU.

NOTE: CFU is used as redirection reason, but other reasons are also applicable.

3. The Redirection number restriction parameter is set to "presentation restricted".

ETSI

TSS CDIV/	TP ISS_I_12_6	ISUP '97 references 2.4.2, table 2-1/ITU-T Recommendation Q.732 [37]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose				

Test Purpose

Redirection number - presentation restricted - no redirection number restriction parameter received.

To verify that the originating exchange does not make the **redirection number** available to the calling access signalling system, if no **redirection number restriction** parameter is received.

The notification subscription option of the **call diversion information** is coded "010 Presentation allowed with redirection number".

```
access                SPA                  SPB                  SPD

 -------setup----->   --------IAM------->  (--------IAM------>)

                      <-------ACM--------

 <----alerting ----   <-------CPG--------  (<-------ACM-------)

         ... ringing tone ...

 <-----answer------   <-------ANM-------   (<-------ANM-------)

 :

_____

1. The stimulus access will initiate a call set up. The verdict will be set to pass if
no Redirection number is presented on the access.

2. NSO is "presentation allowed with redirection number" (implicit) and RnReas = CFU.

3. CPG (alerting) without the redirection number restriction parameter is sent to the
IUT.
```

TSS CDIV/	TP ISS_I_12_7	ISUP '97 reference 2.4.2/ITU-T Recommendation Q.732 [37]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Multiple diversions - redirection number not send by the last diversion.
To verify that the originating exchange does not make any **redirection number** available to the calling access signalling system, if the last diverting exchange does not send one.
NOTE: The first diverting exchange sends the **redirection number** and allows for its presentation. The second (last) diversion allows for the presentation of the **redirection number**, but does not send it, i.e. only **call diversion information** is present in the message and the redirection number is missing. The **redirection number restriction** parameter is also received as "presentation allowed".

```
access                 SPA                     SPB                     SPD

 -------setup----->  --------IAM------->  (-------IAM----->)

(no indication)      <-------ACM--------                           1st diversion

(no indication)      <-------CPG--------  (<------ACM------) 2nd diversion

<-----alerting ----  <-------CPG--------  (<------CPG------) (alerting)

:
_____


1. The stimulus access will initiate a call set up. The verdict will be set to pass if
no Redirection number is presented on the access.

2. ACM no indication with NSO: "Presentation allowed with number", RnReas = CFU and 1st
Redirection number.

3. CPG progress with NSO: "Presentation allowed with number", RnReas = CFU and NO 2nd
Redirection number.

4 CPG alerting with RnNbRes parameter for the 2nd Redirection number.
```

TSS CDIV/	TP ISS_I_12_8	ISUP '97 reference 2.4.2/ITU-T Recommendation Q.732 [37]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Multiple diversions - redirection number - presentation according to the most restrictive notification subscription option.
To verify that the originating exchange handles the presentation of the **redirection number** according to the contents
of the most restrictive notification subscription option of the **call diversion information**, if the forwarded-to user allows
presentation of the number (`"presentation allowed"` in the **redirection number restriction** parameter).
NOTE: Several messages each containing the **call diversion information** are received, as if multiple forwardings
          have occurred (from option B - immediate release - diverting exchanges, so no collecting of information
          takes place).

```
access              SPA                   SPB                   SPD

 -------setup-----> --------IAM------->  (-------IAM----->)

 (no indication)    <-------ACM--------                         1st diversion

 (no indication)    <-------CPG-------- (<------ACM------) 2nd diversion

 (no indication)    <-------CPG-------- (<------CPG------) 3rd diversion

 (no indication)    <-------CPG-------- (<------CPG------) 4th diversion

 <----alerting ---- <-------CPG-------- (<------CPG------) (alerting)

         ... ringing tone ...

 <------answer----- <-------ANM-------- (<------ANM------)

  :
_____

1. The stimulus access will initiate a call set up. The verdict will be set to pass if
no Redirection number is presented on the access.

NOTE:   CFU is used as redirection reason, but other reasons are also applicable.

2. Redirection number restriction parameter "presentation allowed" (implicit/default).
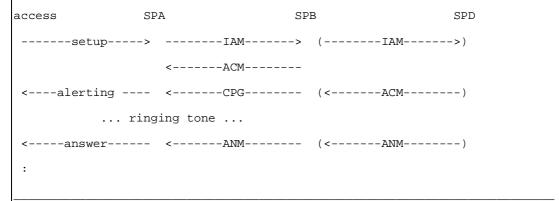```

| TSS<br>CDIV/ | TP<br>ISS_V_12_9 | ISUP '97 references<br>2.5.2.2.1,<br>2.5.2.5.1.2 d)/ITU-T<br>Recommendation<br>Q.732 [37] | Selection<br>expression<br>IntermE | ITU-T<br>Recommendation<br>Q.788 [29]<br>reference<br>None |
|---|---|---|---|---|

Test Purpose
Notification procedures for a diverting call - before the diverting exchange.
To verify that the IUT can successfully pass on in the backward direction (on the leg before the diversion) all the diversion information from the diverting exchange.
It has to be checked that the following signalling information is passed on:
    **optional backward call indicators** with setting "call diversion may occur" for CFNR, CD(a), CFB(u,e) and CD(i,e).
    **generic notification indicator**
    **call diversion information**
    **redirection number**
NOTE 1:  Altered in gateways.
    **redirection number restriction** parameter
NOTE 2:  The following messages can be tested for CFNR, CD(a), CFB(u,e) and CD(i,e):
    **ACM** with **optional backward call indicators** with "call diversion may occur"
    **CPG** with **generic notification indicator**, **call diversion information** and **redirection number**
    **CPG** alerting (or **ANM** or **CON**) with **redirection number restriction** parameter.
    The following messages can be tested for CFU, CFB(n), CFB(u,l), CD(i,l):
    **ACM** with **generic notification indicator**, **call diversion information** and **redirection number**
    CPG alerting (or ANM or CON) with redirection number restriction parameter.

```
Case a)

access              SPA                 SPB                 SPD

 -------setup-----> -------IAM-------> (------IAM------>)

 <------ACM-------- <------ACM-------- RnReas, number

 <------CPG-------- <------CPG-------- (<-----ACM------) RnNbRes

          ... ringing tone ...

 <------ANM-------- <------ANM------- (<-----ANM------)

  :
_____

1. The PTC will provide the necessary stimulus, the test is for RnReas = CFU.

2. ACM (no indication) with CDInf, GenNot = "call is diverting" and the RnNb.

3. CPG (alerting) with RnNbRes - coded as if it has been mapped from ACM; including
BCI.

Case b)

access              SPA                 SPB                 SPD

 -------setup-----> -------IAM----->

 <------ACM-------- <------ACM------- CDmo, RnReas, number

 <------CPG-------- <------CPG------- (------IAM----->)

 <------CPG-------- <------CPG------- (<-----ACM-----) RnNbRes

          ... ringing tone ...

 <------ANM-------- <------ANM------- (<-----ANM-----)

  :
_____

1. The PTC will provide the necessary stimulus, the test is for RnReas = CFNR.
```

TSS CDIV/	TP ISS_V_12_9	ISUP '97 references 2.5.2.2.1, 2.5.2.5.1.2 d)/ITU-T Recommendation Q.732 [37]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference None
2. ACM with optional backward call indicator "call diversion may occur". 3. CPG (progress) with CDInf, GenNot = "call is diverting" and the RnNb. 4. CPG (alerting) with RnNbRes - coded as if it has been mapped from ACM; including BCI.				

TSS CDIV/	TP ISS_V_12_10	ISUP '97 reference 2.5.2.2.1/ITU-T Recommendation Q.732 [37]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Notification procedures for a diverting call - after the diverting exchange.
To verify that the IUT can successfully pass on in both directions (on the leg after the diversion) all the diversion information from the diverting exchange.
It has to be checked that the following signalling information is passed on in the forward direction:
    redirecting number (altered in Gateways).
    original called number (altered in Gateways).
    redirection information.
It has to be checked that the following signalling information is passed on in the backward direction:
    redirection number restriction parameter (in ACM/CPG/ANM/CON).
 	
<pre> SPC   SPA   SPB   SPD
 	
 --------IAM------>   -------IAM-------> with RnInf, OriCdNb, RgNb
 	
 <-------ACM-------   <-------ACM-------- RnNbRes
 	
          ... ringing tone ...
 	
 <------answer-----   <-------ANM--------
 	
   :
</pre>_____
 	
1. The stimulus ISUP will initiate a call set up with the expected signalling information.
 	
2. On the forwarding leg the RnNbRes from user with the number TSP_Nb_B is returned. The Redirection number restriction parameter is set to "presentation allowed" by default.				

TSS CDIV/	TP ISS_I_12_11	ISUP '97 reference 2.5.2.3/ITU-T Recommendation Q.732 [37], 3.5.2.3/ITU-T Recommendation Q.731 [2]	Selection expression OutIE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Original called number in the outgoing international gateway.

To verify that the outgoing international gateway checks and manipulates the **original called number** according to the procedures as defined for CLIP.

Applicable tests:

    Discarding the **original called number** if case of bilateral agreements (PICS A.15/11).

    Discarding the **original called number**, if the address is marked not available.

    Converting the **original called number** to international format with transparent transferral of screening indicator and address presentation restricted indicator.

    Discarding an incomplete **original called number.**

```
Case a)

SPC                 SPA                 SPB

 --------IAM------>  --------IAM------->

:
 _____

1.   The PTC will send an IAM with OriCdNb.

Case b)

SPC                 SPA                 SPB

 --------IAM------>  --------IAM------->

:
 _____

1. The PTC will send an IAM with an "address not available" OriCdNb.

Case c)

SPC                 SPA                 SPB

 --------IAM------>  --------IAM------->

:
 _____

1. The PTC will send an IAM with a national (significant) OriCdNb.
```

TSS CDIV/	TP ISS_V_12_12	ISUP '97 reference 2.5.2.3/ITU-T Recommendation Q.732 [37], 3.5.2.3/ITU-T Recommendation Q.731 [2]	Selection expression OutIE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Redirecting number in the outgoing international gateway.

To verify that the outgoing international gateway checks and manipulates the **redirecting number** according to the procedures as defined for CLIP.

Applicable tests:

    Discarding the **redirecting number** if case of bilateral agreements (PICS A.15/12).

    Discarding the **redirecting number**, if the address is marked not available.

    Converting the **redirecting number** to international format with transparent transferral of screening indicator and address presentation restricted indicator.

    Discarding an incomplete **redirecting number.**

```
Case a)

SPC               SPA               SPB

 --------IAM------>  --------IAM------->

:
 _____

1. The PTC will send an IAM with RgNb.

Case b)

SPC               SPA               SPB

 --------IAM------>  --------IAM------->

:
 _____

1. The PTC will send an IAM with an "address not available" RgNb.


Case c)

SPC               SPA               SPB

 --------IAM------>  --------IAM------->

:
 _____

1. The PTC will send an IAM with a national significant RgNb.
```

TSS CDIV/	TP ISS_V_12_13	ISUP '97 reference 2.5.2.3/ITU-T Recommendation Q.732 [37]	Selection expression OutIE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Redirection number in the outgoing international gateway.
To verify that the outgoing international gateway checks and manipulates the **redirection number** according to the procedures defined for COLP.
Tests applicable:
    Converting the **redirection number** to national format, if necessary (own country code).
    Adding a prefix to an international **redirection number** (PICS A.15/14 - national option @).
Case a)
 	
``

```
SPC                SPA                SPB                SPD

 --------IAM------>  -------IAM------>  (--------IAM------>)

 <-------ACM-------  <------ACM------- RnReas, number

 <-------CPG-------  <------CPG------- (<------ACM--------) RnNbRes

           ... ringing tone ...

 <------ANM-------  <------ANM------- (<------ANM-------)

   :

_____

1. The PTC will provide the necessary stimulus.

2. ACM with CDInf, GenNot = "call is diverting" and an international RnNb: TSP_Nb_D
with own CC.

3. CPG (alerting) with RnNbRes - coded as if it has been mapped from ACM including BCI.

Case b)

SPC                SPA                SPB                SPD

 --------IAM------>  --------IAM------>  (--------IAM------>)

 <-------ACM-------  <------ACM-------- RnReas, number

 <-------CPG-------  <------CPG-------- (<------ACM--------) RnNbRes

           ... ringing tone ...

 <------ANM-------  <------ANM------- (<-------ANM-------)

   :

_____

1. The PTC will provide the necessary stimulus.

2. ACM with CDInf, GenNot = "call is diverting" and an international RnNb: TSP_Nb_D
with foreign country code.

3. CPG (alerting) with RnNbRes - coded as if it has been mapped from ACM including BCI.
```

TSS CDIV/	TP ISS_V_12_14	ISUP '97 reference 2.5.2.4/ITU-T Recommendation Q.732 [37], 3.5.2.4/ITU-T Recommendation Q.731 [2]	Selection expression IncIE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Original called number in the incoming international gateway.
To verify that the incoming international gateway checks and manipulates the **original called number** according to the procedures as defined for CLIP.
Applicable tests:
    Converting the **original called number** to national format, if necessary (own country code).
    Adding a prefix to an international **original called number** (PICS A.15/15 - national option @).

```
Case a)

SPC International SPA     National       SPB

 ----------IAM--------> ---------IAM-------->

   :

_____

1. The stimulus ISUP will initiate a call set up with the expected signalling
information.

2. The received IAM should contain an OriCdNb coded as a national (significant) number.

Case b)

SPC International SPA      National       SPB

 ----------IAM--------> ---------IAM-------->

   :

_____

1. The stimulus ISUP will initiate a call set up with the expected signalling
information.

2. The received IAM should contain an OriCdNb with prefix.
```

TSS CDIV/	TP ISS_V_12_15	ISUP '97 reference 2.5.2.4/ITU-T Recommendation Q.732 [37], 3.5.2.4/ITU-T Recommendation Q.731 [2]	Selection expression IncIE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Redirecting number in the incoming international gateway.
To verify that the incoming international gateway checks and manipulates the **redirecting numbe**r according to the procedures as defined for CLIP.
Applicable tests:
    Converting the **redirecting number** to national format, if necessary (own country code).
    Adding a prefix to an international **redirecting number** (PICS A.15/16 - national option @).

```
Case a)

SPC                   SPA                   SPB

 --------IAM-------> --------IAM------->

:
 _____

1. The PTC will send an IAM with RgNb.

Case b)

SPC                   SPA                   SPB

 --------IAM-------> --------IAM------->

:
 _____

1. The PTC will send an IAM with foreign CC RgNb.

Case c)

SPC                   SPA                   SPB

 --------IAM-------> --------IAM------->

:
 _____

1. The PTC will send an IAM with RgNb.
```

TSS CDIV/	TP ISS_V_12_16	ISUP '97 reference 2.5.2.4/ITU-T Recommendation Q.732 [37]	Selection expression InclE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Redirection number in the incoming international gateway.
To verify that the incoming international gateway checks and manipulates the **redirection numbe**r according to the procedures defined for COLP.
Tests applicable:
    Discarding the **redirection number** in case of bilateral agreements (PICS A.15/13).
    Converting the **redirection number** to international format.
Case a)
 	
`` SPC   SPA   SPB   SPD

 --------IAM------>   --------IAM-------> (--------IAM------>)

 <-------ACM-------   <-------ACM-------- RnReas, number

 <-------CPG-------   <-------CPG-------- (<------ACM--------) RnNbRes

         ... ringing tone ...

 <------ANM--------   <-------ANM-------- (<-------ANM------->)

   :
_____

1. The PTC will provide the necessary stimulus.

2. ACM with CDInf, GenNot = "call is diverting" and an national RnNb.

3. CPG (alerting) with RnNbRes - coded as if it has been mapped from ACM including BCI.

Case b)

 SPC   SPA   SPB   SPD

 --------IAM------>   --------IAM-------> (--------IAM------>)

 <-------ACM-------   <-------ACM-------- RnReas, number

 <-------CPG-------   <-------CPG-------- (<------ACM--------) RnNbRes

         ... ringing tone ...

 <------ANM--------   <-------ANM-------- (<-------ANM------->)

   :
_____

1. The PTC will provide the necessary stimulus.

2. ACM with CDInf, GenNot = "call is diverting" and a national RnNb.

3. CPG (alerting) with RnNbRes - coded as if it has been mapped from ACM including BCI.
``` |

TSS CDIV/	TP ISS_V_12_17	ISUP '97 reference 2.5.2.4/ITU-T Recommendation Q.732 [37] 3.5.2.4/ITU-T Recommendation Q.731 [2]	Selection expression IncIE AND PICS A.15/13	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Redirection number restriction parameter in the incoming international gateway.
To verify that the incoming international gateway removes the **redirection number restriction parameter** if the
redirection number has been previously discarded in case of bilateral agreements.

```
SPC                     SPA                    SPB                    SPD

 --------IAM------>   --------IAM------->  (--------IAM------>)

 <-------ACM-------   <------ACM--------  RnReas, number

 <-------CPG-------   <------CPG--------  (<------ACM---------) RnNbRes

          ... ringing tone ...

 <------ANM--------   <------ANM-------  (<-------ANM-------)

   :

_____

1. The PTC will provide the necessary stimulus.

2. ACM with CDInf, GenNot = "call is diverting" and a national RnNb.

3. CPG (alerting) with RnNbRes - coded as if it has been mapped from ACM including BCI.
```

TSS CDIV/	TP ISS_V_12_18	ISUP '97 reference 2.5.2.5.1.1/ITU-T Recommendation Q.732 [37]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Completion of diverted call by the diverted-to exchange.
To verify that the IUT accepts and can successfully establish a diverted call.

```
SPC                     SPA                    SPB                    SPD

<------setup--------  <-------IAM-------  (<------IAM-------)

                         RnReas, number   (-------ACM------>)

-----alerting------>  -------ACM-------->  (-------CPG------>) RnNbRes

   :

_____

1. The PTC will provide the necessary stimulus.

2. Two diversions simulated in redirection counter; Numbers sent: are OriCdNb and RgNb.

3. ACM with CDInf, GenNot = "call is diverting" and a national RnNb.

4. CPG (alerting) with RnNbRes - coded as if it has been mapped from ACM including BCI.
```

TSS CDIV/	TP ISS_V_12_19	ISUP '97 reference 2.5.2.5.1.1/ITU-T Recommendation Q.732 [37]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Setting of redirection number restriction parameter at the diverted-to exchange (pres. allowed).
To verify that the IUT includes the **redirection number restriction** indicator in the **ACM**, **CPG**, **ANM** or **CON** set to
"presentation allowed" (COLR not activated).
<pre>SPC   SPA   SPB
 	
<------ setup -------- <------IAM--------- (Diverted call)
 	
 ------alerting------> -------ACM--------> RnNbRes (1)
 	
:
 	
or
 	
 ------alerting-----> -------ACM-------->
 	
:   -------CPG--------> RnNbRes (2)
 	
or
 	
 ------alerting-----> -------ACM-------->
 	
 -------connect------> -------ANM--------> RnNbRes (3)
 	
:
 	
or
 	
 -------connect------> -------CON--------> RnNbRes (4)
 	
 :
_____
 	
1.to 4. Pass when the redirection number restriction parameter with the coding
"00 - Presentation allowed" is received in one of the allowed messages.
 	
5. Check the ringing tone from SPA to SPB.</pre>				

TSS CDIV/	TP ISS_V_12_20	ISUP '97 reference 2.5.2.5.1.1/ITU-T Recommendation Q.732 [37]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Setting the redirection number restriction indicator at the diverted-to exchange (pres. restricted). To verify that the IUT includes the **redirection number restriction** indicator in the **ACM**, **CPG**, **ANM** or **CON** set to "presentation restricted" (COLR activated). Pre-test conditions. Arrange the data in the IUT so that the diverted-to user subscribes to the COLR supplementary service.				

```
access                  SPA                    SPB

<--------setup--------  <------IAM---------  (Diverted call)

-------alerting------>  -------ACM-------->  RnNbRes  (2.)

:

or

 ------alerting------>  -------ACM-------->

:                       -------CPG--------> RnNbRes  (3.)

or

 ------alerting------>  -------ACM-------->

 -------connect------>  -------ANM--------> RnNbRes  (4.)

:

or

 -------connect------>  -------CON--------> RnNbRes  (5.)
_____

1. The left access PTC will assist the call set-up with the expected parameters.

2.to 5. Pass when the redirection number restriction parameter with the coding
"01 - Presentation restricted" is received in one of the allowed messages.

6. Check the ringing tone from SPA to SPB.
```

TSS CDIV/	TP ISS_V_12_21	ISUP '97 reference 2.5.2.5.1.2 b) 1)/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.15/2	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Setting the redirection counter in the diverting exchange - first diversion.
To verify that the IUT can successfully divert a call which has not been diverted before and set the redirection counter to the correct value.
The call is diverted directly to another exchange; the redirection counter should be set to 1.
Pre-test conditions.
Arrange the data in the IUT so that called user has activated diversion to an external exchange.
```
SPC              SPA (IUT)          SPB

(No diversions)        (One diversion)

 --------IAM-------> --------IAM------->

:

_____

1. The PTC will send an IAM with a national (significant) OriCdNb.
```

TSS CDIV/	TP ISS_V_12_22	ISUP '97 reference 2.5.2.5.1.2 b) 1)/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.15/2	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Setting of redirection counter in the diverting exchange - multiple local diversions.
To verify that the IUT can successfully divert a call which has not been diverted before and set the redirection counter to the correct value.
The call is diverted N < = 5 times; the redirection counter should be set to N. (e.g. for the pre-test condition the call is diverted twice: once to the same exchange and then to an external exchange, N = 2).
```
SPC              SPA (IUT)          SPB

(No diversions)     (one local diversion) (Two diversions)

 --------IAM-------> --------IAM------->

:

_____

1. The PTC will send an IAM with a national (significant) OriCdNb.

2. RnCnt = 2 = "010"B expected.
```

TSS CDIV/	TP ISS_V_12_23	ISUP '97 reference 2.5.2.5.1.2 b) 1)/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.15/2	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Updating of redirection counter in the diverting exchange.
To verify that the IUT can successfully divert a call which has already been diverted and increment the redirection counter.
NOTE: The call has been diverted 1 to 4 times.
Pre-test conditions.
Arrange the data in the IUT so that called user has activated diversion to an external exchange.

TSS CDIV/	TP ISS_V_12_24	ISUP '97 reference 2.5.2.5.1.2 b) 2)/ITU-T Recommendation Q.732 [37]	Selection expression DLE	ITU-T Recommendatio n Q.788 [29] reference None

Test Purpose

Original called number generated by the diverting exchange.

Verify that the IUT sets the address presentation restricted indicator of the **original called number** according to the "served user releases his/her number to the diverted-to user" option.

The redirecting indicator in the **redirection information** shall be set to "011 Call diverted".

Pre-test conditions.

Arrange the data in the IUT so that called user has activated diversion to an external exchange.

```
SPC                SPA (IUT)            SPB

                   (Subscription option release information)

--------IAM-------> --------IAM-------> RnInf.RgInd = "011" & OriCdNb.APRI = "00"

:

  _____

1. The PTC will send an IAM with a national (significant) OriCdNb.
```

TSS CDIV/	TP ISS_V_12_25	ISUP '97 reference 2.5.2.5.1.2 b) 4)/ITU-T Recommendation Q.732 [37]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Redirecting number generated by the diverting exchange.

Verify that the IUT sets the address presentation restricted indicator of the **redirecting number** according to the "served user releases his/her number to the diverted-to user" option.

The redirecting indicator in the **redirection information** shall be set to "011 Call diverted".

Pre-test conditions.

Arrange the data in the IUT so that called user has activated diversion to an external exchange.

```
SPC                SPA (IUT)            SPB

                   (Subscription option = Do not release information)

--------IAM-------> --------IAM-------> RnInf.RgInd = "100" & RgNb.APRI = "00"

:

  _____

1. The PTC will send an IAM with a national (significant) OriCdNb.
```

TSS CDIV/	TP ISS_V_12_26	ISUP '97 reference 2.5.2.5.1.2 b) 5)/ITU-T Recommendation Q.732 [37]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose ISDN user part preference indicator in the diverting exchange. To verify that the IUT can successfully divert a call and that ISDN user part preference indicator received in the **forward call indicators** with the value "ISDN user part... ...not required all the way" shall be changed to "ISDN user part preferred all the way" . ...preferred all the way" shall be left unchanged. ...required all the way" shall be left unchanged. Pre-test conditions Arrange the data in the IUT so that called user has activated diversion. Case a) SPC SPA (IUT) SPB ISUP not required ISUP preferred --------IAM-------> --------IAM-------> : _____ 1. The PTC will send a call with the expected stimulus to the diverting exchange. 2. The ISUP preference indicator is checked. Case b) SPC SPA (IUT) SPB ISUP preferred ISUP preferred --------IAM-------> --------IAM-------> : _____ 1. The PTC will send a call with the expected stimulus to the diverting exchange. 2. The ISUP preference indicator is checked. Case c) SPC SPA (IUT) SPB ISUP required ISUP required --------IAM-------> --------IAM-------> : _____ 1. The PTC will send a call with the expected stimulus to the diverting exchange. 2. The ISUP preference indicator is checked.				

TSS CDIV/	TP ISS_V_12_27	ISUP '97 reference 2.5.2.5.1.2 c) ii), iii)/ITU-T Recommendation Q.732 [37]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Call diversion may occur in the diverting exchange.
To verify that the IUT includes an **optional backward call indicator** with the indication "call diversion may occur" in the **ACM** in case of CFNR, CD(a), CFB(u,e) and CD(i,e).
Pre-test conditions.
Arrange the data in the IUT so that called user has activated the appropriate diversion service to an external exchange.
 	
`SPC                    SPA                    SPB`
 	
`--------IAM------->`
 	
`<-------ACM-------   CDmo`
 	
`<-------CPG------- --------IAM------->`
 	
`<-------CPG------- <-------ACM--------`
 	
`          ... ringing tone ...`
 	
`<-------ANM------- <-------ANM--------`
 	
`   :`
 	
`_____`
 	
1. The stimulus ISUP will initiate a call set up to diverting user at IUT and expect to receive the indication "call diversion may occur".
 	
2. Verdict is set by checking status on left PTC.				

TSS CDIV/	TP ISS_V_12_28	ISUP '97 reference 2.5.2.5.1.2 c) ii), table 2-2/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.16/5	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Served user answers the call before T_{CFNR} expiry.
To verify that a call may be answered by the served user and that no signalling occurs on the diverted-to user leg if the call is answered before timeout of Timer T_{CFNR}, in case of CFNR.
Pre-test conditions.
Arrange the data in the IUT so that called user has activated the CFNR service.
Case a)

```
SPC                 SPA                 SPB

--------IAM------>

<-------ACM-------  CDmo

<-------ANM-------

  :

_____
```

1. The stimulus ISUP will initiate a call set up to diverting user at IUT and expect to receive the indication "call diversion may occur".

2. Pass if no signalling is observed on the AB link.

Case b)

```
SPC                 SPA                 SPB

--------IAM------>

<-------ACM-------  CDmo

                          TCFNR expiry

<-------CPG-------  --------IAM------->

<-------CPG-------  <-------ACM--------

        ... ringing tone ...

<------answer-----  <-------ANM--------

  :

_____
```

1. The stimulus ISUP will initiate a call set up to diverting user at IUT and expect to receive the indication "call diversion may occur".

2. Window for receiving the forwarding call is created.

3. Pass if IAM is received inside window.

TSS CDIV/	TP ISS_V_12_29	ISUP '97 reference 2.5.2.5.1.2 c) i), ii), iii)/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND NOT PICS A.16/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Immediate through-connection in the diverting exchange.
To verify that the IUT can successfully divert a call and that the incoming circuit is connected to the chosen outgoing circuit immediately, in case of CFU, CFB, CD(i), CFNR(B) and CD(a,B).
Pre-test conditions.
Arrange the data in the IUT so that called user has activated the appropriate diversion service to an external exchange.
<pre> SPC   SPA   SPB
 	
--------IAM------>
 	
<-ACM{CDmo/NoInd}- --------IAM-------> (with RnInf, OriCdNb, RgNb)
 	
     ... Check both way communication ...
 	
<-------CPG------- <-------ACM------- RnNbRes
 	
          ... ringing tone ...
 	
<-------ANM------- <-------ANM-------
 	
   :
_____
 	
1. The stimulus ISUP will initiate a call set up with the expected signalling information.
 	
2. The incoming circuit should be connected to outgoing circuit in both directions immediately.</pre>				

TSS CDIV/	TP ISS_V_12_30	ISUP '97 reference 2.5.2.5.1.2 c) ii)/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.16/1 (option A)	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Through-connection backwards upon alerting and forwards upon answer in the diverting exchange.
To verify that the IUT through-connects in the backward direction (incoming circuit) after receiving the alerting
indication and in the forward direction (outgoing circuit) after receiving the answer (connect) indication, in case of
CFNR(A) and CD(a,A).
NOTE: The IUT can through-connect in both directions after receiving the alerting indication.
Pre-test conditions.
Arrange the data in the IUT so that called user has activated the appropriate diversion service to an external exchange.

```
SPC                     SPA                 SPB

----------IAM------->

<--ACM {CDmo/NoInd}--  --------IAM------->

           Check that there is no through-connection

<-------CPG---------  <-------ACM-------- (RnNbRes)

           Check that there is through-connection backward direction

      (e.g. ringing tone...)

 <-------ANM---------  <-------ANM--------

           Check that there is through-connection in both directions

:
_____

1. The stimulus ISUP will initiate a call set up with the expected signalling
information.

2. Will disrupt the call handling and cause failure if received unexpectedly at left
PTC.

3. Steps checks backward through-connection in backward direction before ANM and
two-way communication after ANM.
```

TSS CDIV/	TP ISS_V_12_31	ISUP '97 reference 2.5.2.5.1.2 c), ii)/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.16/1 (option A)	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Served user answers before receipt of alerting indication from diverted-to exchange.
To verify that the IUT allows the served user to answer the call after the **IAM** has been sent to the diverted-to exchange, in case of CFNR(A) and CD(a,A). The served user shall be allowed to answer the call after **ACM** (no indication) has been received and the connection towards the diverted-to exchange shall be released.
Pre-test conditions.
Arrange the data in the IUT so that called user has activated CFNR(A) or CD(a,A) to an external exchange.

```
SPC                   SPA                   SPB

--------IAM------>

<-------ACM-------   CDmo

                     TCFNR expiry

                     --------IAM------->

                     <---ACM (NoInd)----

 Served user answers

<------ANM-------   -------REL------->

:                    <------ RLC--------
_____
```

1. The stimulus ISUP will initiate a call set up to diverting user at IUT.

2. The stimulus access will assist the call set up at the served user side.

3. ACM with no indication as if another diversion may occur in order to give time to the user at UNI at SPA to answer the call.

4. Call on forwarding leg is released.

5. Successful call set up carried out by the PTC.

TSS CDIV/	TP ISS_V_12_32	ISUP '97 reference 2.5.2.5.1.2 c), ii)/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.16/1 (option A)	ITU-T Recommendation Q.788 [29] references 2.7.4; 2.9.7

Test Purpose

Unsuccessful call setup to the diverted-to user, ringing tone applied by the diverting exchange.

To verify that, if the IUT receives a release indication with cause "user busy" from the diverted-to exchange, it continues to provide ringing tone to the calling user until he releases the connection (or timer T9 in the controlling exchange expires), in case of CFNR(A) and CD(a,A).

Pre-test conditions.

Arrange the data in the IUT so that called user has activated CFNR(A) or CD(a,A) to an external exchange.

```
SPC                     SPA                     SPB

--------IAM------>

<-------ACM-------   CDmo

|                                   TCFNR expiry

|                  --------IAM------->

|                  <------REL ------- busy

|                  --------RLC------->

|       ...ringing tone...

T9

--------REL------>

<-------RLC-------
```
_____

1. The stimulus ISUP will initiate a call set up to the diverting user at IUT and check ringing tone.

2. The stimulus access is mainly responsible for generating the ringing tone.

3. Release with cause #17.

TSS CDIV/	TP ISS_V_12_33	ISUP '97 reference 2.5.2.5.2.1 c) iii)/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND NOT PICS A.16/1	ITU-T Recommendation Q.788 [29] references 2.6.4 2.7.5 2.8.3 2.9.5 2.9.6

Test Purpose
Unsuccessful call setup to the diverted-to user, call released by the diverting exchange.
To verify that, if the IUT receives a release indication with cause "user busy" from the diverted-to exchange, it
releases the call (incoming circuit) and the resources, in case of CFU, CFB, CD(i), CFNR(B) and CD(a,B).
Pre-test conditions.
Arrange the data in the IUT so that called user has activated CFU, CFB, CD(i), CFNR(B) or CD(a,B) to an external
exchange.

```
SPC                     SPA                   SPB

 --------IAM------>

 <-------ACM-------   Diverting

                     --------IAM------->

(<-------CPG-------)  for CFB(u,e), CD(i,e)

                     --------IAM------->

 <-------REL-------  <-------REL -------  busy

 ------- RLC------>  ------- RLC------->

_____

1. The stimulus ISUP will initiate a call set up to the diverting user at IUT and check
the release of resources.

2. Release the call with cause #17, location "user".
```

TSS CDIV/	TP ISS_V_12_34	ISUP '97 reference 2.5.2.5.1.2 e) i-iv) 2)/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.16/1 (option A)	ITU-T Recommendation Q.788 [29] references 2.7.1 2.9.4

Test Purpose
Notification procedures in the diverting exchange- collecting information for the backward direction.
To verify that the IUT can successfully divert a call and store the diversion information parameters in the backward
direction until an alerting indication is received from the diverted-to exchanges, in case of CFNR(A) and CD(a,A). The
IUT receives several **CPG** messages with **call diversion information** and shall retain the most recent redirection
reason and the most severe notification subscription option.
Pre-test conditions.
Arrange the data in the IUT so that called user has activated CFNR(A) or CD(a,A) to an external exchange.

```
SPC                     SPA               SPB               SPD

                    CFNR (NSO = 010)  CFU (NSO = 011)   COLR activated

--------IAM------->

<-------ACM-------  -------IAM-------->

            CDmo  <------ACM-------- (-------IAM------->)

                   NoInd, RnReas = CFU, Nb_D

                  <------CPG--------

                                      progress, RnNbRes = 00

<-------CPG-------  <------CPG-------- (<------ACM-------)

                                      RnNbRes = 01, alerting RnNbRes = 01, subscriber
free

          ... ringing tone ...

<------ANM--------  <-------ANM------- (<------ANM-------)

   :

_____

1. The PTC will provide the necessary stimulus.

2. ACM with CDInf, GenNot = "call is diverting" and RnNb = TSP_Nb_D.

3. CPG (progress) with RnNbRes = 00 from user at UNI SPB (no COLR activated).

4. CPG (alerting) with RnNbRes = 01 from user at UNI SPD (COLR activated) - coded as if
it has been mapped from ACM including BCI.
```

TSS CDIV/	TP ISS_V_12_35	ISUP '97 reference 2.5.2.5.1.2 e) i-iv) 1)/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND NOT PICS A.16/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Notification procedures in the diverting exchange - passing on information in the backward direction.
To verify that the IUT can successfully divert a call and pass on in the backward direction the diversion information parameters received from the diverted-to exchanges, in case of CFU, CFB, CD(i), CFNR(B) and CD(a,B).
Pre-test conditions.
Arrange the data in the IUT so that called user has activated CFU, CFB, CD(i), CFNR(B) or CD(a,B) to an external exchange.

```
SPC                     SPA                  SPB                  SPD

                        CDIV (NSO=010)       CFU (NSO=011)        COLR activated

--------IAM------->

<-------ACM-------   -------IAM-------->

(<-------CPG------) CFB(u,e), CD(i,e)

<-------CPG-------   <------ACM-------- (--------IAM------->)

                                         NoInd, RnReas = CFU, TSP_Nb_D

<-------CPG-------   <------CPG--------

                                         progress, RnNbRes = 00

<-------CPG-------   <------CPG-------- (<------ACM-------->)

                                         RnNbRes = 01, alerting RnNbRes = 01, subscriber
free

           ... ringing tone ...

<------ANM--------   <-------ANM------- (<-------ANM------->)

   :

_____
```

1. The PTC will provide the necessary stimulus.

2. ACM with CDInf, GenNot = "call is diverting" and RnNb = TSP_Nb_D.

3. CPG (progress) with RnNbRes = 00 from user at UNI SPB (no COLR activated).

4. CPG (alerting) with RnNbRes = 01 from user at UNI SPD (COLR activated) - coded as if it has been mapped from ACM including BCI.

TSS CDIV/	TP ISS_V_12_36	ISUP '97 reference 2.5.2.5.1.2 e) i-iv)/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.16/1 (option A)	ITU-T Recommendation Q.788 [29] reference 2.7.1 case C 2.9.4 case C

Test Purpose
Mapping of CON to ANM in the diverting exchange - option A.
To verify that the IUT can successfully divert a call and map a received **CON** from the forwarding leg to a **CPG** (alerting), followed by an **ANM** on the preceding leg in case of CFNR(A) or CD(a,A).
Pre-test conditions.
Arrange the data in the IUT so that called user has activated CFNR(A) or CD(a,A), to an external exchange.
<pre>SPC   SPA   SPB
 	
--------IAM------->
 	
<-----ACM {CDmo} --
 	
<--CPG {diverting}- --------IAM-------> In case of CFNR(A), CD(a,A)
 	
<--CPG (alerting}-- <-------CON------- RnNbRes
 	
<-------ANM-------
 	
    :
_____
 	
1. The stimulus ISUP will initiate a call set up with the expected signalling
information.
 	
2. The incoming circuit should be connected to outgoing circuit in both directions
immediately.</pre>				

TSS CDIV/	TP ISS_V_12_37	ISUP '97 reference 2.5.2.5.1.2 e) i-iv)/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND NOT PICS A.16/1	ITU-T Recommendation Q.788 [29] references 2.6.1 case C 2.8.1 case C 2.9.1 case C
Test Purpose Mapping of CON to ANM in the diverting exchange - option B. To verify that the IUT can successfully divert a call and map a received **CON** from the forwarding leg to an **ANM** on the preceding leg, in case of CFU, CFB, CD(i), CFNR(B) or CD(a,B). Pre-test conditions. Arrange the data in the IUT so that called user has activated CFU, CFB, CD(i), CFNR(B) or CD(a,B) to an external exchange.				

```
SPC                      SPA                   SPB

 --------IAM------->



<--CPG{diverting}---  --------IAM------->

                           In case of CFB(n), CFB(u,l), CFU, CD(i,l)

or

<-----ACM {CDmo}----

<--CPG {diverting}--  --------IAM------->

                           In case of CFB(u,e), CFNR(B), CD(a,B), CD(i,e)



<-------ANM--------  <-------CON-------- RnNbRes

   :

_____

1. The stimulus ISUP will initiate a call set up with the expected signalling
information.

2. The incoming circuit should be connected to outgoing circuit in both directions
immediately.
```

TSS CDIV/	TP ISS_V_12_38	ISUP '97 references 2.1.1.1 e), table A1/ITU-T Recommendation Q.764 [22]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Timer T7 expiry in the diverting exchange. To verify that the IUT can divert a call and release the resources upon T7 timer expiry, if no **ACM** is received from the forwarded-to exchange. Pre-test conditions. Arrange the data in the IUT so that called user has activated diversion to an external exchange.				

```
SPC                     SPA                     SPB

--------IAM------->

<-------ACM-------   CDmo

<-------CPG-------   --------IAM------->

                                    |

                                    | T7

<-------REL-------   --------REL------->

-------RLC------>   <------RLC--------

_____

1. The stimulus ISUP will initiate a call set up to diverting user at IUT and expect to
receive the indication "call diversion may occur".

2. Verdict is set by checking status on left PTC together with the receipt of the REL
message.
```

TSS CDIV/	TP ISS_V_12_39	ISUP '97 references 2.1.4.6 b), table A1/ITU-T Recommendation Q.764 [22]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Timer T9 expiry in the diverting exchange. To verify that the IUT can divert a call and release the resources upon T9 timer expiry, if no **ANM** is received from the forwarded-to exchange. Pre-test conditions. Arrange the data in the IUT so that called user has activated diversion to an external exchange. <pre>SPC SPA SPB --------IAM------>`  <-------ACM-------   CDmo  <-------CPG------- --------IAM------->` <-------CPG------- <-------ACM-------- | 	T9 <------REL------- -------REL------->` --------RLC------> <-------RLC-------- _____ 1. The stimulus ISUP will initiate a call set up to diverting user at IUT and expect to receive the indication "call diversion may occur". 2. ACM subscriber free. 3. Verdict is set by checking status on left PTC together with the receipt of the REL message.</pre>				

TSS CDIV/	TP ISS_V_12_40	ISUP '97 reference 2.5.2.5.2.2/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.15/2 AND NOT PICS A.16/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Call clearing in the diverting exchange - redirection counter set to maximum value.
To verify that the IUT will refuse any further external diversions and clear the call, if it is received with the redirection counter in the **redirection information** set to the maximum value, in case of CFU, CFB, CD(i), CFNR(B) and CD(a,B).
The cause values shall be in case of:
CFU   "call rejected" (21).
CFB   "user busy" (17).
CFNR(B)   "no answer from user (user alerted)" (19).
CD(i), CD(a,B)   "no user responding" (18).
Pre-test conditions.
Arrange the data in the IUT so that called user has activated diversion to an external exchange.
```
Case a)

                    SPA                 SPB

                     <-------IAM--------

                     --------REL------->

                     <-------RLC--------

_____

1. IAM with Redirection counter set to 5 (or TSP_max_div if not equal 5).

2. Call rejected - Cause #21 for CFU.

Case b)

                    SPA                 SPB

                     <-------IAM--------

                     --------REL------->

                     <-------RLC--------

_____

1. IAM with Redirection counter set to 5 (or TSP_max_div if not equal 5).

2. User busy - Cause #17 for CFB.

Case c)

                    SPA                 SPB

                     <-------IAM--------

                     --------REL------->

                     <-------RLC--------

_____

1. IAM with Redirection counter set to 5 (or TSP_max_div if not equal 5).

2. No user responding - Cause #18 for CD(i).
```

TSS CDIV/	TP ISS_V_12_40	ISUP '97 reference 2.5.2.5.2.2/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.15/2 AND NOT PICS A.16/1	ITU-T Recommendation Q.788 [29] reference None

```
Case d)

                SPA                 SPB

                 <-------IAM--------

                 -------ACM------->

                 -------REL------->

                 <-------RLC--------

_____

1. IAM with Redirection counter set to 5 (or TSP_max_div if not equal 5).

2. No user responding - Cause #18 for CD(a,B).

Case e)

                SPA                 SPB

                 <-------IAM--------

                 -------ACM------->

                 -------REL------->

                 <-------RLC--------

_____

1. IAM with Redirection counter set to 5 (or TSP_max_div if not equal 5).

2. No answer from user (user alerted) - Cause #19 for CFNR(B).
```

TSS CDIV/	TP ISS_V_12_41	ISUP '97 reference 2.5.2.5.2.2/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.15/2 AND PICS A.16/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Continue providing ringing tone in the diverting exchange - redirection counter set to maximum value.
To verify that the IUT will refuse any further (external or internal) diversions and continue providing ringing tone until
the calling user clears the call (or timer T9 in OLE expires), if it is received with the redirection counter in the
redirection information set to the maximum value, in case of CFNR(A) and CD(a,A).
Pre-test conditions.
Arrange the data in the IUT so that called user has activated diversion to an exchange.

```
Case a)

access               SPA                SPB

<------setup-------- <-------IAM---------

 |                   -------ACM-------->

 |       ... ringing tone ...

 |

T9                   <-------REL---------

                     -------RLC-------->
_____

1. IAM with Redirection counter set to 5 (or TSP_max_div if not equal 5).

2. This timer simulates T9 at the controlling exchange.

3. Release the call with cause 16 - Normal call clearing (default).

Case b)

access               SPA                SPB

<------setup-------- <-------IAM---------

 |                   -------ACM-------->

 |       ... ringing tone ...

 |

T9                   <-------REL---------

                     -------RLC-------->
_____

1. IAM with Redirection counter set to 5 (or TSP_max_div if not equal 5).

2. Release the call with cause 16 - Normal call clearing (default).
```

TSS CDIV/	TP ISS_V_12_42	ISUP '97 reference 2.5.2.5.1.2 c)/ITU-T Recommendation Q.732 [37], 2.6/ITU-T Recommendation Q.764 [22]	Selection expression DLE AND BCall PICS A.13/11	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Interactions with the propagation delay determination procedure.
To verify that the IUT can successfully divert a call and set the required propagation delay value on the outgoing circuit correctly. The value should be set to the received value plus the propagation delay for the outgoing route, as if the IUT was an intermediate exchange.
Pre-test conditions.
Arrange the data in the IUT so that called user has activated diversion to an external exchange.

```
 SPC                    SPA                    SPB

 ----IAM(PDC=X)---->

 <-ACM {CDmo/NoInd}-  ----IAM(PDC=X+D)-->  (with RnInf, OriCdNb, RgNb)

 <-------CPG--------  <-------ACM------- RnNbRes

                      ... ringing tone ...

 <-------ANM--------  <--ANM(CHInf=X+D)--

   :

   :

_____

1. The stimulus IAM contains an initial propagation delay value of X ms.

2. The received IAM should contain a propagation delay value increased by D ms.

3. Send an ANM with Call history information.
```

TSS CDIV/	TP ISS_V_12_43	ISUP '97 reference 2.6.3/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.3/3	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Call diversion - interaction with COLP.

To verify that the **connected number** and the additional connected number in the **generic number** received in an **ANM** or **CON** message are passed on unmodified at a diverting exchange.

NOTE: The CON will be mapped to an ANM.

Pre-test conditions.

Arrange the data in the IUT so that called user has activated diversion to an external exchange.

Case a)

```
 SPC                    SPA                    SPB

 --------IAM------>

 <-ACM{CDmo/NoInd}-  --------IAM------->  (with RnInf, OriCdNb, RgNb)

 <-------CPG-------  <-------ACM-------   RnNbRes

          ... ringing tone ...

 <-------ANM-------  <-------ANM-------   ConNb, addConNb in GenNb

   :

_____
```

1. The stimulus ISUP will initiate a call set up with the expected signalling information.

2. Send the ConNb and addConNb in GenNb from user at SPB.

Case b)

```
 SPC                    SPA                    SPB

 --------IAM------>

 <-ACM{CDmo/NoInd}-  --------IAM------->  (with RnInf, OriCdNb, RgNb)

 <-------ANM-------  <-------CON-------   RnNbRes, ConNb, addConNb in GenNb

   :

_____
```

1. The stimulus ISUP will initiate a call set up with the expected signalling information.

2. Send the ConNb and addConNb in GenNb from user at SPB.

TSS CDIV/	TP ISS_V_12_44	ISUP '97 reference 2.6.5/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.3/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Call diversion - interaction with CLIP.
To verify that the diverting exchange diverts the **calling party number** and the additional calling number in the **generic number**.
Pre-test conditions.
Arrange the data in the IUT so that called user has activated diversion to an external exchange.

```
 SPC                    SPA                  SPB

 --------IAM------>

<-ACM{CDmo/NoInd}--  --------IAM------->  (with RnInf, OriCdNb, RgNb)

<-------CPG--------  <-------ACM-------- RnNbRes

        ... ringing tone ...

 <-------ANM-------  <-------ANM--------

   :

_____

1. The stimulus ISUP will initiate a call set up with CgPN and addCgPN in GenNb.

NOTE:   Called party has to subscribe to CLIP, although diverted-to user beneficiates
        of the information.
```

TSS CDIV/	TP ISS_V_12_45	ISUP '97 reference 2.6.7/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.3/7	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Call diversion - interaction with CUG - CUG call not diverted.
To verify that a CUG call with outgoing access not allowed to a non-CUG user who has activated diversion is not forwarded.

```
 access                 SPA                  SPB

                 <----IAM (CUG)---- (-OA)

                 -----REL(#87)---->

                 <-------RLC-------

_____

1. No call set up should be observed on the access side.

2. Send an IAM with ISUP preference indicator in the FCI set to "ISUP required all the
way" and CUG call indicator in the OFCI set to "CUG call, outgoing access not allowed".

3. REL with cause #87 "User not member of CUG". See also CUG test case ISS_V_7_14
```

TSS CDIV/	TP ISS_V_12_46	ISUP '97 reference 2.6.7/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.3/7	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Call diversion - interaction with CUG - CUG call diverted.
To verify that a CUG call with outgoing access not allowed to a CUG member who has activated diversion is successful and that the CUG restrictions are forwarded.
Pre-test conditions.
Arrange the data in the IUT so that called user has activated diversion to an external exchange and has subscribed to CUG.

```
SPC                     SPA                    SPB

 -----IAM (CUG)---->  -----IAM (CUG)----> (-OA)

   :

_____

1. Initiate a CUG call set up from SPC specifying a CUG interlock code. The CUG call is
with outgoing access not allowed.

2. CUG call indicator set to "CUG call, outgoing access not allowed".
```

TSS CDIV/	TP ISS_V_12_47	ISUP '97 reference 2.6.17/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.3/8	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Call diversion - interaction with SUB - old called party sub-address not diverted.
To verify that the IUT does not divert the called party sub-address.
Pre-test conditions.
Arrange the data in the IUT so that called user has activated diversion to an external exchange.

```
 SPC                     SPA                    SPB

 --------IAM------>

 <-ACM{CDmo/NoInd}- --------IAM------->with RnInf, OriCdNb, RgNb

 <-------CPG------- <-------ACM------- RnNbRes

         ... ringing tone ...

 <-------ANM------- <-------ANM-------

   :

_____

1. The stimulus ISUP will initiate a call set up with a called party sub-address.

2. If IUT diverts the called party sub-address it is a "fail".

3. If the IUT does not divert a sub-address in the ATP it is a "pass".

4. IF the IUT changed the called party sub-address from TSP_Sub_A to TSP_Sub_B it is a
"pass".
```

TSS CDIV/	TP ISS_V_12_48	ISUP '97 reference 2.6.17/ITU-T Recommendation Q.732 [37]	Selection expression DLE AND PICS A.3/8	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Call diversion - interaction with SUB - new called party sub-address included.
To verify that a new called party sub-address corresponding to the diverted-to user shall be provided by the served user at call diversion activation and shall be included in the **access transport** parameter in the **IAM** sent on the diverted leg.
Pre-test conditions.
Arrange the data in the IUT so that called user has activated diversion to an external exchange and has subscribed to SUB.

```
 SPC                 SPA                       SPB

 --------IAM------>

 <-ACM{CDmo/NoInd}-  --------IAM------->with RnInf, OriCdNb, RgNb

 <-------CPG-------  <-------ACM-------- RnNbRes

         ... ringing tone ...

 <-------ANM-------  <-------ANM-------

   :

_____

1. The stimulus ISUP will initiate a call set up with a called party sub-address.

2. The IUT changed the called party sub-address from TSP_Sub_A to TSP_Sub_B.
```

TSS CDIV/	TP ISS_V_12_49	ISUP '97 reference 2.7/ITU-T Recommendation Q.732 [37], 2.1.1.1/ITU-T Recommendation Q.764 [22]	Selection expression DLE AND IWorkE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Call diversion - interworking with other networks.
To verify that the IUT is able to handle the call to other signalling systems according to the basic call procedures. If the ISDN user part preference indicator in the **forward call indicators** is set to "ISDN user part...:
...not required all the way" (01) then the call should be diverted.
...preferred all the way" (00) then the call should be diverted.
...required all the way" (10) then the call should be rejected/released.
Pre-test conditions.
Arrange the data in the IUT so that the called user has activated diversion with a diverted-to number which is to be routed to another signalling system.

```
Case a)

SPC    non-ISUP   SPA                    SPB

 <-------IAI-------  <-------IAM--------

 --------ACM------>  ------ACM------->

 --------ANC------>  -------ANM------->

   :

_____

1. Assist a call set up from the UNI at SPB on a non-ISUP route.

2. Initiate a call set up specifying "ISDN user part not required all the way" in the
FCI of the IAM.

3. The call should complete. For the non-ISUP side TUP messages have been chosen as an
example.

Case b)

 SPC    non-ISUP   SPA                    SPB

 <-------IAI-------  <-------IAM--------

 --------ACM------>  -------ACM------->

 --------ANC------>  -------ANM------->

   :

_____

1. Assist a call set up from the UNI at SPB on a non-ISUP route.

2. Initiate a call set up specifying "ISDN user part preferred all the way" in the FCI
of the IAM.

3. The call should complete.
```

TSS CDIV/	TP ISS_V_12_49	ISUP '97 reference 2.7/ITU-T Recommendation Q.732 [37], 2.1.1.1/ITU-T Recommendation Q.764 [22]	Selection expression DLE AND IWorkE	ITU-T Recommendation Q.788 [29] reference None

```
Case c)

SPC      non-ISUP   SPA                    SPB

                    <-------IAM---------

                    -------REL------->

                    <-------RLC---------

   :

_____

1. Assist a call set up from the UNI at SPB on a non-ISUP route.

2. Initiate a call set up specifying "ISDN user part required all the way" in the FCI
of the IAM.

3. The call should be released.
```

7.3.13 Call HOLD (HOLD)

TSS HOLD/	TP ISS_V_13_1	ISUP '97 references 2.5.2.1.1.1, 2.5.2.1.1.2/ITU-T Recommendation Q.733 [33]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference 2.11.3

Test Purpose
Call hold after answer, requested by the local user.
To verify that a call can be placed on hold and can be retrieved again by the local user and that notifications are sent
with **CPG** messages having the **event indicator** set to "progress".
Pre-test conditions.
Arrange the data in the IUT so that the local user subscribes to the Call hold service.

```
 access              SPA                    SPB

 <------setup------- <-------IAM--------

 -------alert------> --------ACM------->

         ... ringing tone ...

 ------connect-----> --------ANM------->

       ... check communication ...

 -------hold-------> --------CPG------->

 ------retrieve----> --------CPG--------

       ... check communication ...

 :

_____

1. The call is put on HOLD by the called party.

2. The call is retrieved by the called party.
```

TSS HOLD/	TP ISS_V_13_2	ISUP '97 references 2.5.2.1.1.1, 2.5.2.1.1.2/ITU-T Recommendation Q.733 [33]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference 2.11.3

Test Purpose
Call hold after answer, requested by the remote user.
To verify that a call can be placed on hold and can be retrieved again by the remote user and that notifications are sent with **CPG** messages.

```
 access              SPA                  SPB

 <------setup------- <-------IAM--------

 -------alert------> --------ACM------->

          ... ringing tone ...

 ------connect-----> --------ANM------->

        .. check communication ...

 <------hold-------- <-------CPG--------

 <-----retrieve----- <-------CPG--------

        ... check communication ...

:

_____

 1. The call is put on HOLD by the remote user.

 2. The call is retrieved by the remote user.
```

TSS HOLD/	TP ISS_V_13_3	ISUP '97 references 2.2.1, 2.5.2.1.1.1, 2.5.2.1.1.2/ITU-T Recommendation Q.733 [33]	Selection expression OLE and PICS A.17/2	ITU-T Recommendation Q.788 [29] reference 2.11.1

Test Purpose
Call hold after alerting, requested by the local user.
To verify that an outgoing call can be placed on HOLD after alerting has commenced and can be retrieved afterwards by the local user and that notifications are sent with **CPG** messages.
Pre-test conditions.
Arrange the data in the IUT so that the local user subscribes to the Call hold service.

```
 access              SPA                  SPB

 -------setup------> --------IAM------>

 <------alert------- <-------ACM-------

         ... ringing tone ...

 -------hold-------> -------CPG------>

 <------answer------ <-------ANM-------

 ------retrieve----> --------CPG------>

     ... check communication ...

:
```

TSS HOLD/	TP ISS_V_13_4	ISUP '97 references 2.2.1, 2.9/ITU-T Recommendation Q.733 [33]	Selection expression OLE and PICS A.17/2	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Call hold after alerting, expiry of T9 while the call is on hold.
To verify that a held call is released if it is not answered before expiry of T9 (waiting for **ANM**).
Pre-test conditions.
Arrange the data in the IUT so that the local user subscribes to the Call hold service.

```
 access              SPA                   SPB

 -------setup------>  --------IAM------->

 <------alert-------  <-------ACM--------

         ... ringing tone ...

 -------hold------->  --------CPG------->

 <------disc--------  -------REL------->

                      <-------RLC--------

:
_____

1. Call HOLD received.

2. Cause #19: No answer from user (user alerted).
```

TSS HOLD/	TP ISS_V_13_5	ISUP '97 references 2.2.1, 2.5.2.1.1.1, 2.5.2.1.1.2/ITU-T Recommendation Q.733 [33]	Selection expression OLE and PICS A.17/1	ITU-T Recommendation Q.788 [29] reference 2.11.1

Test Purpose
Call hold after IAM, local user requests HOLD for outgoing call.
To verify that an outgoing call can be placed on hold and can be retrieved afterwards by the local user and that notifications are sent with **CPG** messages.
Pre-test conditions.
Arrange the data in the IUT so that the local user subscribes to the Call hold service.

```
 access              SPA                   SPB

 ------setup------->  -------IAM-------->

 ------hold------->  -------CPG-------->

             .

 ------retrieve---->  -------CPG-------->

      ... check communication ...

 <-----alert-------  <-------ACM--------

         ... ringing tone ...

 <-----connect-----  <-------ANM--------

      ... check communication ...

:
```

ETSI

TSS HOLD/	TP ISS_V_13_6	ISUP '97 references 2.5.2.2.1, 2.5.2.3.1, 2.5.2.4.1/ITU-T Recommendation Q.733 [33]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference 2.11.3

Test Purpose
Call hold after answer (transit call).
To verify that a transit call can be placed on hold and can be retrieved again by the served user (called or calling party) and that the indications are passed on transparently.

```
Case a)

 SPC                SPA                 SPB

--------IAM-------> -------IAM------->

<-------ACM-------  <------ACM--------

          ... ringing tone ...

<-------ANM-------  <------ANM--------

      ... check communication ...

--------CPG------> -------CPG-------> hold

--------CPG------> -------CPG-------> retrieve

        ... check communication ...

:

 _____

 1. The call is put on HOLD by the calling user.

 2. The call is retrieved by the calling user.

Case b)

 SPC              SPA                 SPB

-------IAM------->  -------IAM------->

<------ACM--------  <------ACM--------

          ... ringing tone ...

<------ANM--------  <------ANM--------

      ... check communication ...

<------CPG--------  <-------CPG------- hold

<------CPG--------  <-------CPG------- retrieve

        ... check communication ...

:

 _____

 1. The call is put on HOLD by the called party.

 2. The call is retrieved by the called party.
```

TSS HOLD/	TP ISS_V_13_7	ISUP '97 references 2.2.2, 2.5.2.2.1, 2.5.2.3.1, 2.5.2.4.1/ITU-T Recommendation Q.733 [33]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference 2.11.1

Test Purpose
Call hold after alerting (transit call).
To verify that a transit call can be placed on hold after alerting has commenced at the called party and can be retrieved afterwards and that the indications are passed on transparently by the IUT.
Case a)
 	
``
 SPC   SPA   SPB
 	
 -------IAM------> -------IAM------>
 	
 <------ACM------- <------ACM--------
 	
        ... ringing tone ...
 	
 -------CPG------> ------CPG-------> hold
 	
 <------ANM------- <------ANM--------
 	
        ... check communication ...
 	
 -------CPG------> ------CPG--------> retrieve
 	
        ... check communication ...
 	
:
_____
 	
 1. The call is put on HOLD by the calling party.
 	
 2. The call is retrieved by the calling party.
 	
Case b)
 SPC   SPA   SPB
 	
 -------IAM-------> --------IAM------>
 	
 <------ACM------- <-------ACM-------
 	
          ... ringing tone ...
 	
 <------CPG-------- <------CPG-------- hold
 	
 <------ANM-------- <------ANM--------
 	
        ... check communication ...
 	
 <------CPG-------- <------CPG-------- retrieve
 	
        ... check communication ...
 	
:
_____
 	
 1. The call is put on HOLD by the called party.
 	
 2. The call is retrieved by the called party.
``				

TSS HOLD/	TP ISS_V_13_8	ISUP '97 reference 2.7/ITU-T Recommendation Q.733 [33]	Selection expression IWorkE and PICS A.17/3	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Call hold after answer, interworking with PSTN.
To verify that an in-band indication is sent to the PSTN subscriber if a call is placed on hold by the ISDN subscriber.

```
PSTN                  SPA                 SPB

---------------->  -------IAM------>

<----------------  <------ACM-------

          ... ringing tone ...

<----------------  <------ANM-------

      ... check communication ...

<--in-band indic-- <-----CPG--------

:

_____

1. Continue if an indication of in-band information is received.
```

TSS HOLD/	TP ISS_V_13_9	ISUP '97 reference 2.3/ITU-T Recommendation Q.764 [22]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference 2.11.4

Test Purpose
Call hold after answer, release of the call by the local served user.
To verify that a call in the held state can be released by the user who activated the Call hold service.
Pre-test conditions.
Arrange the data in the IUT so that the local user subscribes to the Call hold service.

```
access                SPA                 SPB

 <------setup------- <-------IAM--------

 -------alert-------> -------ACM------->

            ... ringing tone ...

 ------connect------> -------ANM------->

          ... check communication ...

 ------hold---------> -------CPG------->

     ... check no through-connection ...

 -------disc--------> -------REL------->

_____

 1. The call is put on HOLD by the called party.
```

TSS HOLD/	TP ISS_V_13_10	ISUP '97 reference 2.3/ITU-T Recommendation Q.764 [22]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference 2.11.5

Test Purpose
Call hold after answer, release of the call by the non-served user.
To verify that a call in the held state can be released by the user who did not activate the Call hold service.
```
 access              SPA                SPB

 <-------setup------- <-------IAM-------

 --------alert------> -------ACM------->

           ... ringing tone ...

 -------connect----> --------ANM------>

        ... check communication ...

 <-------hold-------- <------CPG-------

 -------disc------> -------REL------>
_____

1. The call is put on HOLD by the called party.
```

TSS HOLD/	TP ISS_V_13_11	ISUP '97 reference 2.3/ITU-T Recommendation Q.764 [22]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference 2.11.2

Test Purpose
Call hold after alerting, release of the call by the local served user.
To verify that a held call can be released by the user who activated the Call hold service without retrieving the call.
Pre-test conditions.
Arrange the data in the IUT so that the local user subscribes to the Call hold service.
```
 access              SPA                SPB

 <------setup------- <------IAM--------

 -------alert------> -------ACM------->

           ... ringing tone ...

-------hold--------> -------CPG------->

-------disc--------> -------REL------->
```

TSS HOLD/	TP ISS_V_13_12	ISUP '97 references 2.2.1, 2.5.2.5.1/ITU-T Recommendation Q.733 [33]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.11.1
Test Purpose Call hold after alerting, requested by the remote user. To verify that an incoming call can be placed on hold and can be retrieved afterwards by the remote user. <pre>access   SPA   SPB

<------setup------- <-------IAM-------

-------alert------> -------ACM------->

         ... ringing tone ...

<------hold-------- <-------CPG--------

<-----retrieve----- <-------RES--------</pre> | | | | |

7.3.14   Call Waiting (CW)

TSS CW/	TP ISS_V_14_1	ISUP '97 reference 1.5.2.1.1/ITU-T Recommendation Q.733 [33]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference 2.10.1
Test Purpose Call waiting indication in ACM. To verify that a call can be successfully established if the **ACM** indicates that it is a waiting call. <pre>access   SPA   SPB

------setup-------> --------IAM------->

<------alert------- <-------ACM--------

            ... call waiting ...

:</pre> | | | | |

TSS CW/	TP ISS_V_14_2	ISUP '97 reference 1.5.2.1.1/ITU-T Recommendation Q.733 [33]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference 2.10.1
Test Purpose Call waiting indication in CPG. To verify that a call can be successfully established if the **CPG** indicates that it is a waiting call. <pre>access   SPA   SPB

------setup-------> --------IAM------->

<------alert------- <-------ACM--------

                 <-------CPG--------

        ... call waiting ...

:</pre> | | | | |

TSS CW/	TP ISS_V_14_3	ISUP '97 references 1.5.2.2.1, 1.5.2.3.1, 1.5.2.4.1/ITU-T Recommendation Q.733 [33]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference 2.10.1
Test Purpose Call waiting indication in ACM (transit). To verify that a call can be successfully established if the **ACM** indicates that it is a waiting call. <pre>SPC   SPA   SPB

 -------IAM-----> --------IAM------->

 <------ACM------ <-------ACM-------

         ... call waiting ...

:
_____

1. Call waiting indication is sent in ACM.</pre> | | | | |

TSS CW/	TP ISS_V_14_4	ISUP '97 references 1.5.2.2.1, 1.5.2.3.1, 1.5.2.4.1/ITU-T Recommendation Q.733 [33]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference 2.10.1
Test Purpose Call Waiting indication in CPG (transit). To verify that a call can be successfully established if the **CPG** indicates that it is a waiting call. <pre>SPC   SPA   SPB

 -------IAM-----> --------IAM------>

 <------ACM------ <-------ACM------- (NoInd)

 <------CPG------ <-------CPG------- (Call waiting)

:
_____

1. Call waiting indication is sent in CPG.</pre> | | | | |

TSS CW/	TP ISS_V_14_5	ISUP '97 reference 1.5.2.5.1/ITU-T Recommendation Q.733 [33]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.10.1

Test Purpose

Call waiting indication in ACM or CPG.

To verify that a call can be successfully established if the user has subscribed to the call waiting service (with notification) and if he is currently busy, but answers the waiting call. The indication shall be sent either in an **ACM** or a **CPG**.

Pre-test conditions.

Arrange the data in the IUT so that the called user subscribes to the call waiting service with the notification option.

```
 access              SPA                     SPB

<------setup------  <-------IAM------- ]

-------alert----->  --------ACM------> ]    repeat in order to

------connect---->  --------ANM------> ]    keep all B-channels busy

     ... check communication ...

<------setup------  <-------IAM-------

       (no channel)

-------alert----->  --------ACM------> ... call waiting ...

                (--------CPG------> ... call waiting ...)

------connect---->  --------ANM------>

    ... check communication ...

<------disc-------  <-------REL-------

                    -------RLC------>

:
_____

1. Set up calls on every B-channel busy.

2. Call waiting indication in ACM.

3. Call waiting indication in CPG.

4. Release the calls in order to get an idle state.
```

TSS CW/	TP ISS_V_14_6	ISUP '97 reference 1.5.2.5.1/ITU-T Recommendation Q.733 [33]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.10.1

Test Purpose
Call waiting without notification.
To verify that a call can be successfully established if the user has subscribed to the call waiting service (without notification) and if he is currently busy, but answers the waiting call. No indication shall be sent to the calling user.
Pre-test conditions.
Arrange the data in the IUT so that the called user subscribes to the call waiting service without the notification option.

```
 access              SPA              SPB

 <------setup------ <------IAM-------- ]

 -------alert-----> -------ACM-------> ]    repeat in order to

 ------connect----> -------ANM-------> ]    keep all B-channels busy

        ... check communication ...

 <------setup------ <------IAM--------

        (no channel)

 -------alert-----> -------ACM------->

 -------conn------> -------ANM------->

        ... check communication ...

 <------disc------- <------REL--------

                    -------RLC------->

 :
```
_____

1. Set up calls on every B-channel busy.

2. No call waiting indication in ACM.

3. Release the calls in order to get an idle state.

TSS CW/	TP ISS_V_14_7	ISUP '97 reference 1.5.2.5.2/ITU-T Recommendation Q.733 [33]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.10.2

Test Purpose
Call waiting rejected.
To verify that the IUT sends a **REL** with cause #21 (call rejected) if a busy user rejects the waiting call.
Pre-test conditions.
Arrange the data in the IUT so that the called user subscribes to the call waiting service with the notification option.

```
 access                 SPA                    SPB

 <------setup-------  <-------IAM-------- ]

 -------alert------>  -------ACM------->  ]    repeat in order to

 ------connect----->  --------ANM------->  ]    keep all B-channels busy

           ... check communication ...

 <------setup-------  <-------IAM--------

        (no channel)

 -------alert------>  -------ACM------->  ... call waiting ...

                     (-------CPG------->  ... call waiting ...)

 --------disc------>  --------REL------->

 <------release----  <-------RLC--------

 :
_____

1. Set up calls on all B-channels.

2. Call waiting indication in ACM.

3. Call waiting indication in CPG.

4. Release the calls in order to get an idle state.
```

TSS CW/	TP ISS_V_14_8	ISUP '97 reference 1.5.2.5.2/ITU-T Recommendation Q.733 [33]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.10.3
Test Purpose Call waiting ignored (expiry of call waiting supervision timer). To verify that the IUT sends a **REL** with cause #19 (no answer from user, user alerted) if a busy user does not answer the waiting call. Pre-test conditions. Arrange the data in the IUT so that the called user subscribes to the call waiting service with the notification option.				

```
access              SPA                SPB

 <------setup------  <-------IAM------- ]

 -------alert----->  --------ACM------> ]    repeat in order to

 ------connect---->  --------ANM------> ]    keep all B-channels busy

              ... check communication ...

 <-----setup-------  <-------IAM-------

                     --------ACM------> call waiting

              | (-------CPG------> call waiting)

              |

              T9

 <---disconnect----  -------REL------->

:

_____

1. Call waiting indication in ACM.

2. Call waiting indication in CPG.
```

7.3.15   Completion of Calls to Busy Subscribers (CCBS)

TSS CCBS-ISUP/	TP ISS_V_15_1	ISUP '97 references 3.4.2.1.1, 3.5.3.1.1/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
ISUP Preference Indicator in the CCBS call.
To verify that for the CCBS call, the IUT sets the ISUP preference indicator in the **forward call indicator** parameter in the **IAM** to "ISDN User Part required all the way".
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.
 	
`access                SPA                SPB`
 	
`------setup--------->  -------IAM------->`
 	
`<----disconnect-----  <------REL--------`
 	
`                      -------RLC------->`
 	
`                    ... TCAP transaction ...`
 	
`<------recall-------`
 	
`--setup CCBS call-->  -------IAM------->   ISUP required all the way`
 	
`:`
 	
`<------disconnect---  <------REL--------`
 	
`:`
 	
_____
 	
1. Set up a call to busy user at SPB.
 	
2. User at SPB is found busy.
 	
3. Check that user at SPB becomes free by using the RemoteUserFree CCBS ASE operation.
 	
4. CCBS call with "ISDN User Part required all the way" in the FCI of the IAM.				

TSS CCBS-ISUP/	TP ISS_V_15_2	ISUP '97 reference 3.4.2.1.3/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

CCBS parameter in the CCBS call.

To verify that for the CCBS call, the IUT includes in the **IAM** the CCBS call indicator in the **CCBS parameter** coded as "CCBS call".

Pre-test conditions.

Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.

```
 access             SPA                SPB

 ------setup-------> -------IAM-------->

 <---disconnect----- <------REL---------

                     -------RLC------->

          ... TCAP transaction ...

 ----CCBS recall---> -------IAM-------->

:                                 CCBS call

 <----disconnect---- <------REL---------

:

_____
```

1. Set up a call to busy user at SPB.

2. User at SPB is found busy.

3. Check that user at SPB becomes free by using the RemoteUserFree CCBS ASE operation.

4. Check Indication "CCBS call" in the IAM.

TSS CCBS-ISUP/	TP ISS_V_15_3	ISUP '97 reference 3.5.1.1.1.1/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

CCBS call with retained basic call information.

To verify that for the CCBS call, the IUT includes the retained call information in the **IAM**:

- **User service information;**
- **User service information prime;**
- **Access transport** (e.g. called party sub-address);
- **Called party number.**

Pre-test conditions.

Arrange the data in the IUT such that the calling user subscribes to the CCBS and such that the relevant call information that is to be tested may be provided by the calling user.

```
 access              SPA                SPB

 ------setup------> --------IAM-------->

 <---disconnect---- <-------REL---------

                    -------RLC------->

           ... TCAP transaction ...

 <-----recall-------

 --setup CCBS call-> -------IAM-------->    ISUP required all the way

:

 <---disconnect----- <------REL---------

:

_____
```

1. Set up a call with USI, USIp, ATP and/or CdPN, which encounters user at SPB busy, activates TCAP and terminates the call.

2. User at SPB is found busy.

3. Check that user at SPB becomes free by using the RemoteUserFree CCBS ASE operation.

4. CCBS call with "ISDN User Part required all the way" in the FCI of the IAM. The retained call information about ATP, USI, USIp and CdPN shall be checked too.

TSS CCBS-ISUP/	TP ISS_V_15_4	ISUP '97 references 3.5.1.1.1.1, 3.6.13/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE AND PICS A.18/3	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
CCBS call with retained call information and interactions with other supplementary services.
To verify that for the CCBS call, the IUT includes the retained call information in the IAM:
- **Calling party number** (if supported);
- **Access transport** (e.g. calling party sub-address if supported);
- **UUS1,2,3** (retained request if supported);
- **UUS1** (information given by user in response to CCBS recall, if supported);
- **Optional forward call indicator** (with COLP request).

Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCBS and such that the relevant call
information for the applicable supplementary services may be provided by the calling user (e.g. SUB, COLP).

```
 access                 SPA                    SPB

 -------setup-------> -------IAM-------->

 <----disconnect----- <------REL---------

                      -------RLC-------->

         ... TCAP transaction ...

 <-------recall------

 --setup CCBS call--> --------IAM------->    ISUP required all the way

:

 <------disconnect--- <------REL---------

:
```
_____

1. Set up a call with Calling party number (if supported) ATP (e.g. calling party
sub-address if supported); UUS1, 2, 3 (retained request if supported) UUS1 (information
given by user in response to CCBS recall, if supported) OFCI (with COLP request) which
encounters user at SPB busy, activates TCAP and terminate the call.

2. User at SPB is found busy.

3. Check that user at SPB becomes free by using the RemoteUserFree CCBS ASE operation.

4. CCBS call with "ISDN User Part required all the way" in the FCI of the IAM. The
retained call information. about ATP, UUS1,2,3 request, UUI in CCBS recall and CdPN
shall be checked too.

TSS CCBS-ISUP/	TP ISS_V_15_5	ISUP '97 references 3.5.3.2.1, 3.5.3.3.1, 3.5.3.4.1/ITU-T Recommendation Q.733.3 [12]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Transit support of diagnostics field in REL. To verify that the IUT is able to pass the diagnostics field including the CCBS indicator transparently to the preceding exchange.				

```
 SPC                    SPA                    SPB

 <------IAM------- <-------IAM--------

 -------REL------> -------REL------->

 <------RLC------- <-------RLC--------

_____

1. Check diagnostics field in the REL.
```

TSS CCBS-ISUP/	TP ISS_V_15_6	ISUP '97 references 3.5.3.2.1, 3.5.3.3.1, 3.5.3.4.1/ITU-T Recommendation Q.733.3 [12]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Transit support of CCBS parameter in IAM. To verify that the IUT is able to pass CCBS parameter transparently to the succeeding exchange.				

```
 SPC                SPA                    SPB

-------IAM-------> -------IAM--------> CCBS parameter

:

_____

1. Set up a CCBS call to user at SPB.

2. Check that CCBSpar is received.
```

TSS CCBS-ISUP/	TP ISS_V_15_7	ISUP '97 reference 3.4.2.1.2/ITU-T Recommendation Q.733.3 [12]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
CCBS possible to destination B.
To verify that the IUT is able to generate in a **REL** message with cause # 17 "User busy" or # 34 "No circuit available" the diagnostics field containing a CCBS indicator with a "CCBS possible" indication.

```
 access             SPA              SPB

 set the destination

 B busy

 user busy          <------IAM--------

                    -------REL------->

                    <------RLC--------

  <---disconnect---- <------REL--------

                    -------RLC------->

:
_____

1. UNI at SPA becomes busy.

2. Check that "CCBS possible" is received in the release message with cause value #17
or #34.

3. Release the busy call.
```

TSS CCBS-ISUP/	TP ISS_V_15_8	ISUP '97 reference 3.4.2.1.3/ITU-T Recommendation Q.733.3 [12]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
CCBS parameter in the CCBS call.
To verify that the IUT is able to terminate the CCBS call, with the CCBS call indicator in the **CCBS parameter** in the
IAM coded as "CCBS call".

```
 access                 SPA                 SPB

 set the destination B busy

                      <------IAM--------  normal call

                      -------REL------->  CCBS possible

                      <------RLC--------

                      ... TCAP transaction ...

user frees resources

                       RemoteUserFree to CCBS call (& reserve resource)

                      resource(s) still available

 <-----setup---------  <-----IAM---------  CCBS call

 ------alert-------->  ------ACM-------->

 -----connect------->  ------ANM-------->

 <-----disc----------  <-----REL---------

 :
```
_____

1. UNI at SPA becomes busy.

2. Check that remote user is free by using the RemoteUserFree CCBS ASE operation.

3. Process a CCBS call specified in the IAM.

4. Check that the call is terminated (ANM, CON, ...).

TSS CCBS-ISUP/	TP ISS_V_15_9	ISUP '97 reference 3.5/ITU-T Recommendation Q.733.3 [12]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
CCBS not possible to destination B.
To verify that the IUT is able to generate in a REL message with cause #17 "User busy" or cause #34 "No circuit available" the diagnostics field containing a CCBS indicator with a "CCBS not possible" indication.
NOTE: CCBS is not possible because e.g. the queue is set to zero or filled up or due to maintenance reasons.
Pre-test conditions.
Arrange the data in the IUT such that CCBS for destination B is not possible.
 	
<pre> access   SPA   SPB
 	
 set the destination
 	
 B busy
 	
 user busy   <------IAM-------
 	
                     -------REL------>
 	
                     <------RLC-------
 	
<----disconnect---   <------REL-------
 	
                     -------RLC------>
 	
 :
</pre>_____
 	
1. Set up a call to busy user at SPA.
 	
2. Check that "CCBS not possible" is received in the release message with cause value #17 or #34.
 	
3. Release the busy call.				

TSS CCBS-ISUP/	TP ISS_V_15_10	ISUP '97 references 3.6.10.2.2 c), 3.5.3.5.2 c)/ITU-T Recommendation Q.733.3 [12]	Selection expression DLE and PICS A.18/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Destination busy upon arrival of CCBS call -Interaction with CFB and retention option supported.
To verify that the IUT sends a **REL** with cause #17 or #34 and diagnostics "CCBS possible".
The DLE should retain the original request in the queue.
 	
``
 access   SPA   SPB
 	
 set the destination
 	
 B busy
 	
 user busy   <------IAM--------
 	
                        -------REL------->
 	
                        <------RLC--------
 	
 <------disconnect--   <------REL-------
 	
                        -------RLC------>
 	
:
``
_____
 	
1. Set up a call to busy user at access.
 	
2. Check that "CCBS possible" is received in the release message with cause value #17 or #34.
 	
3. Release the busy call.				

TSS CCBS-ISUP/	TP ISS_V_15_11	ISUP '97 references 3.6.10.2.2 c), 3.5.3.5.2 c)/ITU-T Recommendation Q.733.3 [12]	Selection expression DLE AND NOT PICS A.18/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Destination busy upon arrival of CCBS call - Interaction with CFB and no retention option supported.

To verify that the IUT sends a **REL** with cause #17 or #34 with diagnostics "CCBS possible" when the terminals are compatible.

The DLE releases all its resources for the original request and waits for new CCBS request.

```
 access              SPA                 SPB

 set the destination

 B busy

 user busy          <------IAM--------

                    -------REL-------->  CCBS possible

                    <------RLC--------

          ... TCAP transaction ..

                         RemoteUserFree

 user busy again    <------IAM--------  CCBS call

                    -------REL-------->  CCBS possible

                    <------RLC--------

 <--disconnect---   <------REL--------

                    -------RLC------->
```
_____

1. Set up a call to busy user at access.

2. CCBS call.

3. Check that "CCBS possible" is received in the release message with cause value # 17 or #34.

TSS CCBS-ISUP/	TP ISS_V_15_12	ISUP '97 references 3.7.10.2.2 c)/ITU-T Recommendation Q.733.3 [12]	Selection expression DLE AND PICS A.18/9	ITU-T Recommendation Q.788 [29] reference None
Test Purpose CCBS call as a normal call - Interaction with CFB. To verify that the IUT deletes the CCBS parameter in the **IAM** if the CCBS call is forwarded by the initially busy user. Pre-test conditions. User at destination B must subscribe to and activate CFB to an external user while the recall timer is running (CCBS-T9).				

```
 SPC                SPA                SPB

 ------IAM------->  (busy)

 <-----REL--------

 ------RLC------->

   (user at SPA activates CDIV while CCBS-T9 runs)

 -----IAM-------->  -------IAM-----> CFB

   with CCBSpar       no CCBSpar

:

_____

1. Set up a call to busy user at SPA.

2. Check that no CCBSpar is received in the IAM.
```

TSS CCBS-ISUP/	TP ISS_V_15_13	ISUP '97 reference 3.5.3.5.1/ITU-T Recommendation Q.733.3 [12]	Selection expression DLE AND PICS A.18/6	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Maximum number of CCBS request queue entries of destination B.

To verify that the IUT supports the maximum number of up to 5 queue entries.

```
 access             SPA                 SPB

 set the destination

 B busy

 user busy          <-----IAM--------

                    ------REL------->

                    <-----RLC--------

                    ...TCAP transaction ...

      Repeat more than 5 set up to busy user at SPA

:

<----disconnect---  <-----REL--------

                    ------RLC------->
```
_____

1. Set up a call to busy user at access.

2. Send maximum number of CCBS requests and check that user at SPA becomes free by using the RemoteUserFree CCBS ASE operation.

3. One more IAM after the maximum number of calls is reached at SPA.

4. Check that "not CCBS possible" is received in the REL with cause value # 17 or #34.

5. Release the busy call.

6. Set up calls (maximum 5 different) from SPB to SPA which encounters user at SPA busy. Activate CCBS for the different calls.

7. User at SPB requests maximum allowed CCBS request.

8. Received REL with cause value #17 or #34.

TSS CCBS-ISUP/	TP ISS_V_15_14	ISUP '97 reference 3.5.3.5.1/ITU-T Recommendation Q.733.3 [12]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Incoming non-CCBS call with identical service requirements released.

To verify that the IUT, having an entry in the CCBS queue, releases a second incoming call if the service requirements of the second call are identical to the entry being processed and resources are available.

NOTE: The original request remains in the queue.

Pre-test conditions.

Arrange the data in the IUT so that there are free resources in addition to the resource reserved for the first CCBS request.

```
 access              SPA              SPB

set the destination

B busy

user busy            <-----IAM-------- 1st call

                     ------REL-------> CCBS possible

                     <-----RLC--------

          ... TCAP transaction ..

user frees resources

         RemoteUserFree to 1st call (& reserve resource)

        resource(s) still available for potential 2nd call

                     <-----IAM-------- 2nd. independent call

                     ------REL-------> released because identical requirements

                     <-----RLC--------

        ... check TCAP transaction ...


                     <-----IAM-------- 1st. CCBS call (empty queue)

                     ...continue CCBS call  1st call.

:
```
_____

1. Set up a 1st call to busy user at access.

2. Check release message with cause value # 17 or # 34 (1st call).

3. Check that remote user is free by using the RemoteUserFree CCBS ASE operation.

4. Process a second identical (with the same requirement to the one being processed) set up to the same remote user.

5. Check that the call is released with cause #17 or # 34 (2nd call).

6. Continue the 1st CCBS call in order to get an idle state.

7. Continue the 2nd CCBS call in order to get an idle state.

TSS CCBS-ISUP/	TP ISS_V_15_15	ISUP '97 reference 3.5.3.5.1/ITU-T Recommendation Q.733.3 [12]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Incoming non-CCBS call with not identical service requirements accepted.

To verify that the IUT, having a queue entry in the CCBS queue, accepts a second incoming call if the service requirements of the second call are not identical to the entry being processed and resources are available.

NOTE: The original request remains in the queue.

Pre-test conditions.

Arrange the data in the IUT so that there are free resources in addition to the resource reserved for the first CCBS request.

```
access                 SPA                 SPB

set the destination

B busy

user busy              <------IAM-------- 1st call

                       -------REL-------> CCBS possible

                       <------RLC--------

                       ... TCAP transaction ..

user frees resources

               RemoteUserFree to 1st call (& reserve resource)

               resource(s) still available for potential 2nd call

 <-----setup--------- <-----IAM--------  2nd. independent call

 ------alert--------> ------ACM------->

 -----connect-------> ------ANM------->

 <-----disc---------- <-----REL--------

               ...continue with the 1st CCBS call...

:
_____
```

1. Set up a call to busy user at access.

2. Check release message with cause value #17 or # 34 (1st call).

3. Check that remote user is free by using the RemoteUserFree CCBS ASE operation.

4. Process a second non-identical (without the same requirement to the one being processed) set up.

5. Check that the call is accepted (ANM, CON, ...).

6. End the TCAP dialogue for the 1st call.

CCBS Application Service Element (ASE)

TSS CCBS-ASE/	TP ISS_TC_V_15_1	ISUP '97 reference 3.5.1.1.1.1/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Ability to perform a CCBS REQUEST class 1 operation - successful. To verify that the IUT can successfully perform a CCBS REQUEST operation if required by the calling user: NOTE 1: Send a **CcbsRequest invoke** to the DLE by using the TCAP primitive **TC-BEGIN request**(TC-INVOKE request). NOTE 2: Receive a **CcbsRequest return result** from the DLE in a **TC-CONTINUE indication**(TC-INVOKE indication). Pre-test conditions. Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.				

```
 access              SPA                 SPB

 ------setup------->  -------IAM-------->

 <----disconnect----  <------REL---------

                      -------RLC-------->   (normal call, user at SPB busy)

              ... TCAP transaction ...

start CCBS-T1    --

<--CCBS Act request---

--CCBS Act response-->

stop CCBS-T1

start CCBS-T2        xxxxTC_BEGIN_REQ-->

stop CCBS-T2         <--TC_CONTINUE_INDx

start CCBS-T3

:

 ----CCBS recall--->  -------IAM--------->    CCBS call

 :

 <----disconnect----  <-------REL---------

:
```
_____

1. The access side activates CCBS.

2. The CcbsRequest invocation is received.

3. The user at SPB is now free for a CCBS call.

4. CCBS call set up with "ISDN User Part required all the way" in the FCI of the IAM.

TSS CCBS-ASE/	TP ISS_TC_I_15_2	ISUP '97 reference 3.5.1.1.1.2/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Ability to perform a CCBS REQUEST class 1 operation - unsuccessful.

To verify that if a failure occurs (short or long term denial) while invoking a CCBS REQUEST operation, the IUT is able to indicate the result to the calling user.

NOTE 1: Send a **CcbsRequest invoke** to the DLE by using the TCAP primitive **TC-BEGIN request**(TC-INVOKE request).

NOTE 2: Receive a **CcbsRequest return error** from the DLE in a **TC-END indication**(TC-U-ERROR indication).

Pre-test conditions.

Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.

```
 access              SPA                 SPB

 ------setup--------> ------IAM--------->

 <----disconnect----- <------REL---------

                      -------RLC-------->   (normal call, user at SPB busy)

                       ... TCAP transaction ...

start CCBS-T1    --

<--CCBS Act request---

--CCBS Act response-->

stop CCBS-T1

start CCBS-T2         xxxxxTC_BEGIN_REQxxxx->

stop CCBS-T2          <---TC_END_INDxxxxxxxxx
_____

1. The access side activates CCBS.

2. The CcbsRequest invocation is received.
```

TSS CCBS-ASE/	TP ISS_TC_V_15_3	ISUP '97 reference 3.5.1.2.1.1/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Ability to perform a CCBS CANCEL class 4 operation.
To verify that the IUT can successfully perform a deactivation request if required by the calling user.
NOTE: Send a **CcbsCancel invoke** without cancelCause to the DLE by using the TCAP primitive **TC-END**
request(TC-INVOKE request).
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.

```
 access                  SPA                     SPB

 ------setup------->  -------IAM-------->

 <----disconnect----  <------REL---------

                      -------RLC------->   (normal call, user at SPB busy)

                   ... TCAP transaction ...

start CCBS-T1     --

<-CCBS Act request----

--CCBS Act response-->

stop CCBS-T1

start CCBS-T2        xxxxTC_BEGIN_REQxx->

stop CCBS-T2         <--TC_CONTINUE_INDxx

start CCBS-T3

<--CCBS Deact request—

--CCBS Deact response->

                     xxTC_END REQxxxx--->

stop CCBS-T3
```
_____

1. The access side activates and deactivates CCBS.

2. Check that the CcbsRequest invocation is received.

TSS CCBS-ASE/	TP ISS_TC_V_15_4	ISUP '97 reference 3.5.3.1.1/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Ability to indicate a CCBS recall to the calling user.
To verify that the IUT can successfully initiate a CCBS recall to the calling user.
NOTE: Receive a **RemoteUserFree invoke** from the DLE in a **TC-CONTINUE indication**(TC-INVOKE indication).
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.

```
 access              SPA                  SPB

 -------setup------->   --------IAM-------->

 <-----disconnect----   <------REL---------

                        -------RLC-------->   (normal call, user at SPB busy)

                        ... TCAP transaction ...

start CCBS-T1    --

<--CCBS Act request---

--CCBS Act response-->

stop CCBS-T1

start CCBS-T2          xxxxTC_BEGIN_REQxxxx-->

stop CCBS-T2           <--TC_CONTINUE_INDxxxx

start CCBS-T3

:

 <---CCBS recall act---

 -----CCBS recall----->   -------IAM------->  CCBS call

 :

 <----disconnect-------   <------REL--------

:

:

_____

1. The access side activates CCBS request and CCBS recall.

2. Check that the CcbsRequest invocation is received.

3. The user at SPB is now free for a CCBS call.

4. Check that CCBS call with "ISDN User Part required all the way" in the FCI of the
IAM.
```

TSS CCBS-ASE/	TP ISS_TC_I_15_5	ISUP '97 reference 3.5.3.1.1/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Calling user busy when destination B becomes free.

To verify that the IUT can act correctly after receipt of the indication that destination B is free but calling user A is still busy:

NOTE 1: Receive a **RemoteUserFree invoke** from the DLE in a **TC-CONTINUE indication**(TC-INVOKE indication).

NOTE 2: Notify the calling user A.

NOTE 3: Send **CcbsSuspend invoke** in a **TC-CONTINUE request**(TC-INVOKE request) to the DLE.

NOTE 4 eventually send **CcbsResume invoke** in **TC-CONTINUE request**(TC-INVOKE request) to the DLE if the calling user becomes free.

Pre-test conditions.

Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.

```
 access               SPA                 SPB

 -------setup-------> -------IAM-------->

 <----disconnect----- <------REL---------

                      -------RLC-------->   (normal call, user at SPB busy)

                      ... TCAP transaction ...

start CCBS-T1     --

<--CCBS Act request---

--CCBS Act response-->

stop CCBS-T1

start CCBS-T2           xxxxTC_BEGIN_REQxxxx->

stop CCBS-T2            <--TC_CONTINUE_INDxxxx    CcbsRequest return result

start CCBS-T3

                       <--TC_CONTINUE_INDxxxx    RemoteUserFree

stop CCBS-T3

arrange user to be

found busy              xxxxTC_CONTINUE_REQ-->   CcbsSuspend

or CCBS busy

--Receive notification that

the user at SPB is now free,

--Send no response for that

--User A is now free

                        xxxTC_CONTINUE_REQ-->    CcbsResume
_____
```

1. The access side activates CCBS.

2. Check that the CcbsRequest invocation is received.

3. The user at SPB is now free for a CCBS call.

4. End the TCAP dialogue in order to get an initial state.

TSS CCBS-ASE/	TP ISS_TC_V_15_6	ISUP '97 reference 3.1.3 m)/ITU-T Recommendation Q.733.3 [12]	Selection expression Local AND PICS A.18/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Support of the retain option.
To verify that the IUT performs the retain option by setting the **retainSupported** parameter to TRUE or FALSE in the **CcbsRequest** or in the **CcbsRequest return result**.
Pre-test conditions for OLE.
Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.

```
Case a)

 access              SPA                  SPB

 ------setup------->  -------IAM-------->

 <-----disconnect---  <------REL---------

                      -------RLC-------->   (normal call, user at SPB busy)

                       ... TCAP transaction ...

start CCBS-T1    --

<--CCBS Act request---

--CCBS Act response-->

stop CCBS-T1

start CCBS-T2          xxxxTC_BEGIN_REQxxxx->  retainSupported = TRUE

stop CCBS-T2           <--TC_CONTINUE_INDxxxx  retainSupported = TRUE

start CCBS-T3

_____

1. The access side activates CCBS.

2. Check that the CcbsRequest invocation is received with "RetainSupported = TRUE".

3. End the TCAP dialogue in order to get an initial state.

Case b)

 access              SPA                  SPB

    set the destination

    B busy

                     <-------IAM--------

    user busy        -------REL------->

                     <-------RLC--------

                  ... TCAP transaction ...


                     <--TC_BEGIN_REQxxxx  retainSupported = TRUE

                     xxxTC_CONTINUE_IND-> retainSupported = TRUE

    user free        <-------REL--------

                     --------RLC------->

_____
```

TSS CCBS-ASE/	TP ISS_TC_V_15_6	ISUP '97 reference 3.1.3 m)/ITU-T Recommendation Q.733.3 [12]	Selection expression Local AND PICS A.18/1	ITU-T Recommendation Q.788 [29] reference None
1. UNI at SPA becomes busy. 2. Check that the CcbsRequest invocation is received with "RetainSupported = TRUE". 3. Free destination B.				

TSS CCBS-ASE/	TP ISS_TC_V_15_7	ISUP '97 reference 3.5.1.1.1.1/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE AND PICS A.18/2	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Maximum number of outstanding CCBS requests of a user. To verify that the IUT does not send any **CcbsRequest** to the DLE if the maximum number of outstanding requests is reached. Pre-test conditions. Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.				

```
 access                 SPA                 SPB

 ------setup-------->  -------IAM-------->

 <-----disconnect---   <------REL---------

                       -------RLC-------->   (normal call, user at SPB busy)

                  ... TCAP transaction ...

start CCBS-T1    --

<--CCBS Act request---

--CCBS Act response-->

stop CCBS-T1

start CCBS-T2         xxxxTC_BEGIN_REQxxxx-->

stop CCBS-T2          <--TC_CONTINUE_INDxxxx    CcbsRequest return result

start CCBS-T3

     repeat activate CCBS request until the maximum

     number of CCBS request supported by SPA

     check that no CCBS request is send after the specified number of entries

_____
```

1. The access side activates CCBS.

2. Check that no TC_BEGIN_REQ is sent after the maximum number of CCBS request is reached at SPA.

3. The test case fails if the maximum number of outstanding requests is reached and CcbsRequest is received.

4. End the TCAP dialogue in order to get an initial state.

TSS CCBS-ASE/	TP ISS_TC_I_15_8	ISUP '97 reference 3.5.1.1.2.2, 3.5.3.5.1, 3.5.5.4/ITU-T Recommendation Q.733.3 [12]	Selection expression DLE AND PICS A.18/6	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Maximum number of queue entries CCBS requests.
To verify that the IUT sends a **CcbsRequest return error** to the OLE if the maximum number of queue entries is reached.
NOTE: Send CcbsRequest return error in TC-END request(TC-INVOKE request).

```
 access                 SPA                 SPB

  set the destination

  B busy

                    <-----IAM----------

 User busy          ------REL--------->

                    <-----RLC----------

                ... TCAP transaction ...

                    <---xxTC_BEGIN_REQx

                    xxTC_CONTINUE_IND-->    CcbsRequest return result

                        ... repeat activate CCBS request

                            until the maximum number of CCBS

                            request supported by the IUT

                            is reached (fill up the queue)

                    <-----IAM----------

 User busy          ------REL--------->

                    <-----RLC----------

                    <---xxTC_BEGIN_REQx

                    xxxxTC_END_IND----->    CcbsRequest return error

                                        (short or long term denial)

 User free          <-------REL--------

                    --------RLC------->
```
_____

1. UNI at SPA becomes busy.

2. Call to get the destination B busy.

3. Check that "CCBS possible" is received in the release message with cause value # 17 or #34.

4. Check that CcbsRequest return error is received in TC_END_IND.

5. Free destination B.

TSS CCBS-ASE/	TP ISS_TC_V_15_9	ISUP '97 reference 3.5.5.4/ITU-T Recommendation Q.733.3 [12]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Ability to end a dialogue.
To verify that the IUT can end a TCAP dialogue after a successful CCBS call.
NOTE: Send a **TC-END request** without component primitive upon sending of the **ACM**, **CPG** or **CON.**
Pre-test conditions for OLE.
Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.

```
 access                SPA                   SPB

 set the destination

 B busy

                      <-------IAM---------

 User A busy          --------REL-------->

                      <-------RLC---------

                  ... TCAP transaction ...

                   <---xxTC_BEGIN_REQx

                   xxTC_CONTINUE_IND-->  CcbsRequest return result

 :

                   xxTC_CONTINUE_IND-->  RemoteUserFree

:

 <-----set up-------   <-------IAM---------    CCBS call

                      --------ACM------->

                      xxxxTC_END_IND----->

 :

 <----disconnect----   <-------REL---------
```
_____

1. UNI at SPA becomes busy.

2. Check that a TC_END_IND primitive without component is received in order to end the
CCBS operation.

TSS CCBS-ASE/	TP ISS_TC_V_15_10	ISUP '97 reference 3.7.1/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE AND PICS A.18/7	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Initiate the CCBS supplementary service even if no diagnostics is received in the release message.
To verify that the IUT sends a **CcbsRequest invoke** if the calling user activates the CCBS.
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.

```
 access              SPA                    SPB

 ------setup------->  -------IAM-------->

 <-----disconnect---  <------REL---------

                      -------RLC-------->   (normal call, user at SPB busy)

                ... TCAP transaction ...

start CCBS-T1    --

<--CCBS Act request---

--CCBS Act response-->

stop CCBS-T1

start CCBS-T2          xxxxTC_BEGIN_REQxxxx-->

stop CCBS-T2           <--TC_CONTINUE_INDxxxx

start CCBS-T3

:

 ----CCBS recall--->  -------IAM------->    CCBS call

 :

 <----disconnect----  <-------REL-------

:
_____

1. The access side activates CCBS.

2. Send a REL without diagnostics "CCBS is possible".

3. Check that the CcbsRequest invocation is received.

4. The user at SPB is now free for a CCBS call.

5. CCBS call set up with "ISDN User Part required all the way" in the FCI oh the IAM.
```
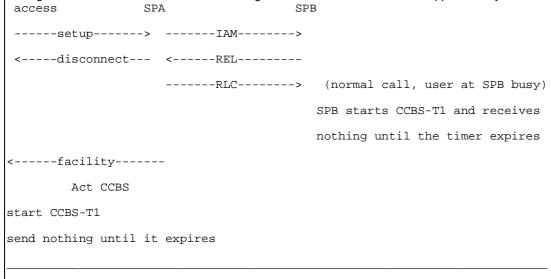
TSS CCBS-ASE/	TP ISS_TC_V_15_11	ISUP '97 reference 3.9.1/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Support of the retention timer CCBS-T1.
To verify that the retention timer CCBS-T1 can be started after receive of a **release message** with cause value # 17 or # 34 from the DLE and stopped normally after activation of the CCBS supplementary service by the calling user.
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.
<pre> access   SPA   SPB
 	
 ------setup-------> -------IAM-------->
 	
 <-----disconnect--- <------REL---------
 	
                     -------RLC--------> (normal call, user at SPB busy)
 	
                                         SPB starts CCBS-T1 and receives
 	
                                         nothing until the timer expires
 	
<------facility-------
 	
        Act CCBS
 	
start CCBS-T1
 	
send nothing until it expires
 	
_____
 	
1. The access side activates CCBS after CCBS-T1 runs out.
 	
2. Check that no CCBS request is stored in the queue.</pre>				

TSS CCBS-ASE/	TP ISS_TC_V_15_12	ISUP '97 reference 3.5.5.4.1 c), 3.9.1/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Support of the CCBS request operation timer CCBS-T2.
To verify that the timer CCBS-T2 can be started after sending of a **CcbsRequest** to the DLE and stopped normally
after receipt of **CcbsRequest return result** from the DLE.
NOTE: If the timer expires a **TC-END** with **TC-L-CANCEL** indication primitive is received from the DLE and the
          service request is rejected.
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.

```
 access                          SPA                          SPB

 ------setup------->  -------IAM-------->

 <----disconnect----  <------REL--------

                      -------RLC------->   (normal call, user at SPB busy)

                ... TCAP transaction ...

start CCBS-T2        xxxTC_BEGIN_REQ-->    SPB starts CCBS-T2 and sends

                     <--TC_ENDxxxxxxxxxx    TC_END_IND if the timer expires
_____

1. The access side activates CCBS.

2. End the TCAP dialogue in order to get an initial state.
```

TSS CCBS-ASE/	TP ISS_TC_I_15_13	ISUP '97 reference 3.5.1.2.1.2/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Support of the CCBS service duration timer CCBS-T3.
To verify that the IUT can successfully deactivate a CCBS request if the CCBS service duration timer CCBS-T3 expires.
NOTE: Send a **CcbsCancel invoke** with cancelCause to the DLE by using the TCAP primitive **TC-END request**(TC-INVOKE request) with cancelCause "CCBS-T3 Timeout".
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.

```
 access              SPA                            SPB

 ------setup-------> -------IAM-------->

 <-----disconnect--- <------REL---------

                     -------RLC-------->   (normal call, user at SPB busy)

                     ... TCAP transaction ...

start CCBS-T2        xxxxTC_BEGIN_REQ-->    CcbsRequest invoke

stop CCBS-T2         <---TC_CONT_INDxxxx    CcbsRequest return result

start CCBS-T3

starts CCBS-T3 and sends TC_CONTINUE_IND with RemoteUserFree if it expires

                     <---TC_CONT_INDxxxxx    RemoteUserFree

                     xxxxxTC_END_REQ---->   TC_END_IND with CancelCause

"timeout CCBS-T3"
_____

1. The access side activates CCBS.

2. After CCBS-T3 timer expiry the IUT shall send the CancelCause "CCBS-T3 timeout" in a
TC_END.
```

TSS CCBS-ASE/	TP ISS_TC_I_15_14	ISUP '97 references 3.5.1.2.1.2 ii), 3.9.1/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Support of the CCBS recall timer CCBS-T4.
To verify that the timer CCBS-T4 can be stopped after receiving an indication from the user for a CCBS recall.
NOTE: CCBS-T4 contains the maximum time the network will wait for the calling user A to respond to a CCBS recall. The OLE sends a **CcbsCancel invoke** in **TC-END request** to the DLE in case of CCBS-T4 expiry.
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.

```
 access              SPA                   SPB

 ------setup------->  -------IAM-------->

 <-----disconnect---  <------REL---------

                      -------RLC-------->   (normal call, user at SPB busy)

                      ... TCAP transaction ...

start CCBS-T2        xxxxTC_BEGIN_REQ-->    CcbsRequest invoke

start CCBS-T3        <---TC_CONT_INDxxxx     CcbsRequest return result

:

                     <---TC_CONT_INDxxxxx    RemoteUserFree


SPB starts CCBS-T4 and receives TC_END_IND with CancelCause if it expires

                     xxxxxTC_END_REQ---->   TC_END_IND with CancelCause

"timeout CCBS-T3"
_____

1. The access side activates CCBS and does not accept the CCBS recall within CCBS-T4.

2. Check that the CancelCause "CCBS-T4 timeout" is received in a TC_END.
```

TSS CCBS-ASE/	TP ISS_TC_I_15_15	ISUP '97 reference 3.5.3.1.2 b) i)/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE AND PICS A.18/5	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Reject a second identical activation of CCBS.
To verify that the IUT does not send any CcbsRequest to the DLE if a second identical activation of CCBS is done.
Pre-test conditions.
Arrange the data in the IUT so that the calling user subscribes to CCBS supplementary service.

```
 access              SPA                 SPB

 ------setup------->  -------IAM-------->

 <----disconnect----  <------REL---------

                      -------RLC-------->  (1st normal call, user at SPB busy)

                     ... TCAP transaction ...

start CCBS-T1     --

<--CCBS Act request---

--CCBS Act response-->

stop CCBS-T1

start CCBS-T2        xxxxTC_BEGIN_REQ-->

stop CCBS-T2         <--TC_CONTINUE_INDx

start CCBS-T3

:

 ------setup------->  -------IAM-------->

 <----disconnect----  <------REL---------

                      -------RLC-------->  (2nd normal call, user at SPB busy)

:
_____

1. The access side activates CCBS.

2. First call to busy user at SPB.

3. Check that the CcbsRequest invocation is received.

4. Second identical call from the IUT to the same SPB.

5. End the TCAP dialogue.
```

TSS CCBS-ASE/	TP ISS_TC_I_15_16	ISUP '97 reference 3.5.3.1.2 b) ii)/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE AND PICS A.18/4	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Treat a second identical activation of CCBS as a new request.
To verify that the IUT treats a second identical activation of CCBS as a new request.
Pre-test conditions.
Arrange the data in the IUT so that the calling user subscribes to CCBS supplementary service.

```
 access                 SPA                              SPB

 ------setup------->  -------IAM-------->

 <----disconnect----  <------REL---------

                      -------RLC-------->  (1st normal call, user at SPB busy)

                      ... TCAP transaction ...

start CCBS-T1    --

<--CCBS Act request---

--CCBS Act response-->

stop CCBS-T1

start CCBS-T2         xxxxTC_BEGIN_REQ-->

stop CCBS-T2          <--TC_CONTINUE_INDx

start CCBS-T3

:
 -------setup------>  -------IAM-------->

 <----disconnect----  <------REL---------

                      -------RLC-------->  (2nd normal call, user at SPB busy)

                      ... TCAP transaction ...

start CCBS-T1    --

<--CCBS Act request---

--CCBS Act response-->

stop CCBS-T1

start CCBS-T2         xxxxTC_BEGIN_REQ-->

stop CCBS-T2          <--TC_CONTINUE_INDx

start CCBS-T3

:
```
_____

1. The access side activates CCBS.

2. First call to busy user at SPB.

3. Check that the CcbsRequest invocation is received.

4. Second identical call from the IUT to the same SPB.

5. Second identical activation of the CCBS request.

TSS CCBS-ASE/	TP ISS_TC_I_15_16	ISUP '97 reference 3.5.3.1.2 b) ii)/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE AND PICS A.18/4	ITU-T Recommendation Q.788 [29] reference None
6. End the TCAP dialogue.				

TSS CCBS-ASE/	TP ISS_TC_I_15_17	ISUP '97 reference 3.5.1.2.2.2/ITU-T Recommendation Q.733.3 [12]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Support of the CCBS service supervision timer CCBS-T7. To verify that the IUT deactivates the CCBS-request if CCBS-T7 expires. NOTE 1: CCBS-T7 is started after sending a **CcbsRequest return result** to the OLE. NOTE 2: CCBS-T7 is stopped after the destination B becomes not busy, before sending **RemoteUserFree** to the OLE. NOTE 3: Send a **CcbsCancel invoke** in a **TC-END request**(TC-INVOKE request) with cancelCause "CCBS-T7 Timeout". <pre>access   SPA   SPB

set the destination

B busy

                  <-----IAM----------
user busy   ------REL--------->

                  <-----RLC----------

                  ... TCAP transaction ...

                  <---xxTC_BEGIN_REQx

                  xxTC_CONTINUE_IND--> CcbsRequest return result

SPB starts CCBS-T7 and receives TC_END_IND with CancelCause

"CCBS-T7 Timeout" if it expires

                  xxxxxTC_END_IND--->
    user free   <-------REL--------

                  --------RLC------->
</pre> | | | | |

TSS CCBS-ASE/	TP ISS_TC_I_15_18	ISUP '97 reference 3.5.3.1.5 a), 3.9.1/ITU-T Recommendation Q.733.3 [12]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Support of the destination B idle guard timer CCBS-T8.
To verify that no resources are available at the destination B side until timer CCBS-T8 expires.

```
 access              SPA                      SPB

 set the destination

 B busy

                     <--------IAM----------

 user busy           --------REL--------->

                     <-------RLC----------

                 ... TCAP transaction ...

                  <---xxTC_BEGIN_REQx     CcbsRequest

                 xxTC_CONTINUE_IND-->   CcbsRequest return result

:

User is now free      SPB starts timers CCBS-T8

                      SPB checks every second that no resources

                      are available by using T_LOCAL timer

                     <--------IAM----------

                     --------REL--------->

                     <-------RLC----------

:

<-------setup-------   <--------IAM----------   CCBS-T8 expires

--------alert------>   --------ACM--------->

-------connect----->   --------ANM--------->

:

_____

1. Check that no resources are available within CCBS-T8, e.g., send an IAM and
receiving a REL.

2. Check that resources are now available by sending an IAM and receiving an ACM, etc.
```

TSS CCBS-ASE/	TP ISS_TC_V_15_19	ISUP '97 reference 3.5.3.5.2 d), 3.9.1/ITU-T Recommendation Q.733.3 [12]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Support of the DLE recall timer CCBS-T9.
To verify that the timer CCBS-T9 can be started after sending of a **TC-CONTINUE** with **RemoteUserFree** from the DLE and stopped after CCBS call is received from the OLE.
NOTE: Send a **CcbsCancel invoke** in a **TC-END request**(TC-INVOKE request) with cancelCause "CCBS-T9 Timeout".

```
 access              SPA              SPB

  set the destination

 B busy

                     <-----IAM----------

 user busy           ------REL--------->

                     <-----RLC----------

                     ... TCAP transaction ...

                     <---xxTC_BEGIN_REQx

                     xxTC_CONTINUE_IND-->  CcbsRequest return result

:

                     xxTC_CONTINUE_IND-->  RemoteUserFree


                     SPB starts CCBS-T9 and receives

                     TC_END_IND with CancelCause

                     "CCBS-T9 Timeout" if it expires

                     xxxxxTC_END_IND--->

 user free           <-------REL--------

                     --------RLC------->
```
_____

1. Check that the CancelCause "CCBS-T9 timeout" is received in a TC_END.

2. Free destination B.

TSS CCBS-ASE/	TP ISS_TC_I_15_20	ISUP '97 references 3.7.7.3.3.1, 3.7.7.3.3.2, 3.9.3/ITU-T Recommendation Q.733.3 [12]	Selection expression Local AND PICS A.18/19	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Support of the interworking supervision timer T_{SUP}. To verify that the timer T_{SUP} is used correctly in case of interworking with a private network. NOTE 1: The DLE sends a **CcbsCancel invoke** in **TC-END request** to the OLE without cancelCause in case of T_{SUP} timer expiry. NOTE 2: The OLE sends a **CcbsCancel invoke** in **TC-END request** to the DLE without cancelCause in case of T_{SUP} timer expiry. Pre-test conditions for OLE. Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.				

```
 SPC              SPA              SPB (private network)

 -------IAM------->   -------IAM------>

 <------REL--------   <------REL-------

 -------RLC------->   -------RLC------>   (normal call, user at SPB busy)

                ... TCAP transaction ...

 xxxTC_BEGIN_REQ-->   xxTC_BEGIN_REQ-->

                     SPB starts T_SUP and sends no

                     CcbsRequest return result within T_SUP

                     xxxTC_END_REQ--->  TC_END_IND without CancelCause
_____

1. Check that a TC_END without CancelCause is received.
```

TSS CCBS-ASE/	TP ISS_TC_I_15_21	ISUP '97 reference 3.5.1.1.1.1/ITU-T Recommendation Q.733.3 [12]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose CCBS REQUEST not invoked. To verify that if a call is released with a cause other than #17 or #34, then no CCBS REQUEST shall be sent from the OLE to the DLE. Pre-test conditions. Arrange the data in the IUT such that the calling user subscribes to the CCBS supplementary service.				

```
 access           SPA              SPB

 ------setup-------> -------IAM--------->

 <-----disconnect--- <------REL----------

                     -------RLC--------->
_____

1. The access side shouldn't activate CCBS.

2. Release call with a cause other than #17 or #34.
```

7.3.16   Three party service (3PTY)

TSS THREE_PTY/	TP ISS_V_16_1	ISUP '97 references 2.4, 2.2.1/ITU-T Recommendation Q.734.2 [16]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference 2.14.1
Test Purpose Served user initiates 3PTY. To verify that the IUT, where the served user with two active calls is located, can successfully join these calls to form a three-way conversation, and notify the implied remote parties accordingly. The IUT should send **CPG** messages with the **generic notification indicator** set to "conference established" to both implied parties. The **event indicator** in the **CPG** should be set to "progress". The notification should be independent of the call set up direction of the two calls; i.e. it should apply to all of the following scenarios: A -->B ; A<-- B ; A -->B ; A<-- B. A -->C ; A -->C ; A<--C ; A<-- C. Pre-test conditions. Arrange the data in the IUT such that the served user subscribes to the 3PTY and HOLD supplementary services.					

```
 SPC                 SPA                 SPB

                     -------IAM------>

                     <------ACM-------

                     <------ANM-------

                     -------CPG------>  check held state

 <-----IAM-------

 ------ACM------>

 ------ANM------>

 <-----CPG-------    -------CPG------>

     conf est            conf est

       ... 3PTY communication ...

 <-----CPG-------    <------REL-------

       conf disc    -------RLC------>

 <-----REL-------

 ------RLC------>
```
_____

```
1. Set up a first call from SPA to SPB and put it on hold.

2. Set up a second call from SPA to SPC.

3. Join the two calls into a 3PTY communication and check "conference established" in
the CPG.

4. Check the 3PTY communication through the three-party bridge between users from UNI
at SPB and SPC.

5. Release the call from UNI at SPB.
```

TSS THREE_PTY/	TP ISS_V_16_2	ISUP '97 reference 2.5.2.1.1.3 a)/ITU-T Recommendation Q.734.2 [16]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference 2.14.1

Test Purpose
Served user creates a private communication with a remote user.
To verify that the IUT (controlling the conference) on a 3PTY call can successfully create private communication with
one of the remote users. The appropriate notification (depending on A-B active-held or A-C active-idle connection) is
sent in **CPG** messages to the two users.
Pre-test conditions.
Arrange the data in the IUT such that the served user subscribes to the 3PTY and HOLD supplementary services.

```
Case a)

 SPC                   SPA                    SPB

                       -------IAM------>

                       <------ACM-------

                       ... ringing tone ...

                       <------ANM-------

                       check communication

                       -------CPG------>  check held state

 <------IAM-------

 -------ACM------>

 -------ANM------>

 <------CPG-------   -------CPG------>

     conf est           conf est

        ... 3PTY communication ...

 <------CPG-------   -------CPG------>

     conf disc          conf disc

                       -------CPG------>  check remote hold

                       <------REL-------

                       -------RLC------>

 <------REL-------

 -------RLC------>
```
_____

```
1. Set up a first call from SPA to SPB and put it on hold.

2. Set up a second call from SPA to SPC.

3. Join the two calls into a 3PTY communication and check "conference established" in
the CPG.

4. Check the 3PTY communication towards each party.

5. Disconnect the 3PTY call.

6. Check the held state at SPB.

7. Release the held call.
```

TSS THREE_PTY/	TP ISS_V_16_2	ISUP '97 reference 2.5.2.1.1.3 a)/ITU-T Recommendation Q.734.2 [16]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference 2.14.1

Case b)
 	
  SPC   SPA   SPB
 	
       -------IAM------>
 	
       <------ACM-------
 	
       ... ringing tone ...
 	
       <------ANM-------
 	
        check communication
 	
       -------CPG------> check held state
 	
 <------IAM-------
 	
 -------ACM------>
 	
 -------ANM------>
 	
 <------CPG-------   -------CPG------>
 	
    conf est   conf est
 	
     ... 3PTY communication ...
 	
 <------CPG-------   -------CPG------>
 	
    conf disc   remote hold
 	
 <------CPG-------   -------CPG------>
 	
   remote hold   conf disc
 	
       <------REL-------
 	
       -------RLC------>
 	
 <------REL-------
 	
 -------RLC------>
 	
 _____
 	
 1. Set up a first call from SPA to SPB and put it on hold.
 	
 2. Set up a second call from SPA to SPC.
 	
 3. Join the two calls into a 3PTY communication and check "conference established" in the CPG.
 	
 4. Check the 3PTY communication towards each party.
 	
 5. Check "Remote hold" at SPB with which private communication is required.
 	
 6. Check "conference disconnected" after retrieving the held call.
 	
 7. Release the retrieved call.				

TSS THREE_PTY/	TP ISS_V_16_3	ISUP '97 reference 2.5.2.1.1.3 b)/ITU-T Recommendation Q.734.2 [16]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference 2.14.2

Test Purpose

Served user disconnects one remote user and retains the other.

To verify that the IUT (controlling the conference) on a 3PTY call can successfully disconnect one remote user and retain and notify the other user appropriately using **CPG** messages.

The IUT should send to the appropriate remote users **CPG** messages with a **generic notification indicator** (depending on A-B active-held or A-C active-idle connection). The **event indicator** in the **CPG** should be set to "progress".

NOTE: The "remote hold" notification should be sent in a **CPG** to the remaining remote user, followed by the "conference disconnected" notification in a separate **CPG**.

Pre-test conditions.

Arrange the data in the IUT such that the served user has activated 3PTY and HOLD supplementary services.

```
Case a)

 SPC                  SPA                 SPB

                       ------IAM------>

                       <-----ACM-------

                       <-----ANM-------

                       ------CPG------>  check held state

 <-----IAM--------

 ------ACM------->

 ------ANM------->

 <-----CPG--------   ------CPG------>

     conf est           conf est

         ... 3PTY communication ...

 <------REL-------   ------CPG------>

 -------RLC------>       remote hold

                        ------CPG------>

                     conference disconnected

                       <-----REL-------

                       ------RLC------>
```
_____

```
1. Set up a first call from SPA to SPB and put it on hold.

2. Set up a second call from SPA to SPC.

3. Join the two calls into a 3PTY communication and check "conference established" in
the CPG.

4. Check the 3PTY communication towards each party.

5. Check "Remote hold" at SPB after.

6. Check "conference disconnected" after retrieving the held call.
```

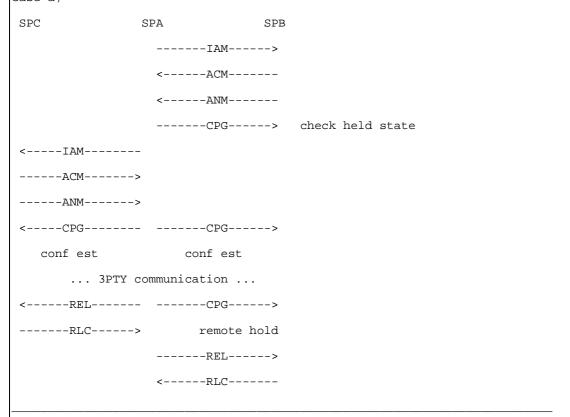| TSS THREE_PTY/	TP ISS_V_16_3	ISUP '97 reference 2.5.2.1.1.3 b)/ITU-T Recommendation Q.734.2 [16]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference 2.14.2

Case b)
 	
 SPC   SPA   SPB
 	
              ------IAM------>
 	
              <-----ACM-------
 	
              <-----ANM-------
 	
              ------CPG------>   check held state
 	
 <-----IAM--------
 	
 ------ACM------->
 	
 ------ANM------->
 	
 <-----CPG--------   ------CPG------>
 	
     conf est   conf est
 	
    ... 3PTY communication ...
 	
 <-----CPG-------   ------REL------>
 	
    conf disc   <-----RLC-------
 	
 <------REL------
 	
 -------RLC----->_____
 	
1. Set up a first call from SPA to SPB and put it on hold.
 	
2. Set up a second call from SPA to SPC.
 	
3. Join the two calls into a 3PTY communication and check "conference established" in the CPG.
 	
4. Check the 3PTY communication towards each party.
 	
5. The user at SPB is released with Cause #16 - Normal call clearing.				

TSS THREE_PTY/	TP ISS_V_16_4	ISUP '97 reference 2.5.2.1.1.3/ITU-T Recommendation Q.734.2 [16]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference 2.14.4

Test Purpose
Served user disconnects both remote users and terminates the call.
To verify that the IUT (controlling the conference) can send the appropriate notification to the two remote users when disconnecting both remote users on the 3PTY call.
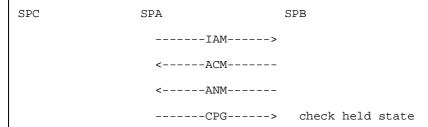The IUT should send to the appropriate remote users a **CPG** with a **generic notification indicator** (depending on A-B active-held or A-C active-idle connection). The **event indicator** in the **CPG** is set to "progress".
Pre-test conditions.
Arrange the data in the IUT such that the served user has activated 3PTY and HOLD supplementary services.
Case a)

```
 SPC                  SPA                 SPB

                      -------IAM------>

                      <------ACM-------

                      <------ANM-------

                      -------CPG------>   check held state

 <-----IAM--------

 ------ACM------->

 ------ANM------->

 <-----CPG--------   -------CPG------>

    conf est            conf est

       ... 3PTY communication ...

 <------REL-------   -------CPG------>

 -------RLC------>       remote hold

                      -------REL------>

                      <------RLC-------
```

_____

1. Set up a first call from SPA to SPB and put it on hold.

2. Set up a second call from SPA to SPC.

3. Join the two calls into a 3PTY communication and check "conference established" in the CPG.

4. Check the 3PTY communication towards each party.

5. Check "Remote hold" as a reaction to first releasing user at SPC.

6. Check that Release is received at SPB with Cause #16 - Normal call clearing.

Case b)

```
 SPC                  SPA                   SPB

                      -------IAM------>

                      <------ACM-------

                      <------ANM-------

                      -------CPG------>   check held state
```

TSS THREE_PTY/	TP ISS_V_16_4	ISUP '97 reference 2.5.2.1.1.3/ITU-T Recommendation Q.734.2 [16]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference 2.14.4

```
<-----IAM--------

------ACM------->

------ANM------->

<-----CPG--------   -------CPG------>

    conf est        conf est

    ... 3PTY communication ...

<-----CPG--------   -------REL------>

    conf disc     <------RLC-------

<------REL-------

-------RLC------>
```
_____

1. Set up a first call from SPA to SPB and put it on hold.

2. Set up a second call from SPA to SPC.

3. Join the two calls into a 3PTY communication and check "conference established" in the CPG.

4. Check the 3PTY communication towards each party.

5. Check that Release is received at SPB with Cause #16 - Normal call clearing.

TSS THREE_PTY/	TP ISS_V_16_5	ISUP '97 reference 2.2.1/ITU-T Recommendation Q.734.2 [16]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference 2.14.3

Test Purpose

Remote user disconnects 3PTY call.

To verify that the IUT (controlling the conference) can successfully continue the 3PTY call after receiving disconnection by one of the remote users, and send the appropriate notification to the remaining party.

The IUT should send to the other remote user **CPG** with a **generic notification indicator** (depending on A-B active-held or A-C active-idle connection). The **event indicator** in the **CPG** is set to "progress".

NOTE: The "remote hold" notification should be sent in a **CPG** to the other remote user, followed by the "conference disconnected" notification in a separate **CPG**.

Pre-test conditions.

Arrange the data in the IUT such that the served user has activated 3PTY and HOLD supplementary services.

Case a)

```
 SPC                   SPA            SPB

                    -------IAM------>

                    <------ACM-------

                    <------ANM-------

                    -------CPG------>    check held state

 <-----IAM-------

 ------ACM------>

 ------ANM------>

 <-----CPG-------    -------CPG------>

     conf est          conf est

       ... 3PTY communication ...

 ------REL------>    -------CPG------>

 <-----RLC-------         remote hold

                    -------CPG------>

                         conf disc

                    -------REL------>

                    <------RLC-------
```

_____

1. Set up a first call from SPA to SPB and put it on hold.

2. Set up a second call from SPA to SPC.

3. Join the two calls into a 3PTY communication and check "conference established" in the CPG.

4. Check the 3PTY communication towards each party.

5. Check "Remote hold" indication at SPB.

6. Check "conference disconnected" after retrieving the held call.

7. Check that Release is received at SPB with Cause #16 - Normal call clearing.

Case b)

```
 SPC              SPA              SPB
```

TSS THREE_PTY/	TP ISS_V_16_5	ISUP '97 reference 2.2.1/ITU-T Recommendation Q.734.2 [16]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference 2.14.3
	------IAM------>			
	<-----ACM-------			
	<-----ANM-------			
	------CPG------>	check held state		
<-----IAM-------				
------ACM------>				
------ANM-------				
<-----CPG-------	------CPG------>			
conf est	conf est			
... 3PTY communication ...				
<-----CPG-------	<-----REL-------			
conf disc	------RLC------>			
<------REL------				
-------RLC----->				

_____

1. Set up a first call from SPA to SPB and put it on hold.

2. Set up a second call from SPA to SPC.

3. Join the two calls into a 3PTY communication and check "conference established" in the CPG.

4. Check the 3PTY communication towards each party.

5. User at SPB disconnects with Cause #16 Normal call clearing.

ETSI

TSS THREE_PTY/	TP ISS_V_16_6	ISUP '97 references 2.5.2.2-4.1; table 2-1/ITU-T Recommendation Q.734.2 [16]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference 2.14.1
Test Purpose				

Test Purpose
Transit support of 3PTY.
To verify that the IUT can transparently transfer all information related to 3PTY.
The IUT should be able to transparently transfer the **CPG** message with the following notifications in the **generic notification indicator** in both the forward and the backward direction:
1) "Conference established".
2) "Conference disconnected".
3) "Remote hold".
Case a)

```
 SPC                 SPA                 SPB

  ------IAM------>    ------IAM------>

  <-----ACM-------    <-----ACM-------

  <-----ANM-------    <-----ANM-------

  ------CPG------>    ------CPG------>   check held state

  ------CPG------>    ------CPG------>

     conf est            conf est

        ... 3PTY communication ...

  ------CPG------>    ------CPG------>

    remote hold         remote hold

  ------CPG------>    ------CPG------>

     conf disc           conf disc

  ------REL------>    ------REL------>

  <-----RLC-------    <-----RLC-------
```
_____

1. Set up a call from SPB to SPC and put it on hold.

2. Check "conference established" indication in the CPG.

3. Check through-connection of the speech path.

4. Check "remote hold" indication at SPB.

5. Check "conference disconnected" indication.

Case b)

```
 SPC                 SPA                 SPB

  <-----IAM-------    <-----IAM-------

  ------ACM------>    ------ACM------>

  ------ANM------>    ------ANM------>

  <-----CPG-------    <-----CPG-------   check held state

  <-----CPG-------    <-----CPG-------

      conf est            conf est

         ... 3PTY communication ...
```

ETSI

TSS THREE_PTY/	TP ISS_V_16_6	ISUP '97 references 2.5.2.2-4.1; table 2-1/ITU-T Recommendation Q.734.2 [16]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference 2.14.1

<-----CPG-------
 	
    remote hold
 	
<-----CPG-------
 	
    conf disc
 	
<-----REL-------
 	
------RLC------>
	<-----CPG-------
	
	    remote hold
	
	<-----CPG-------
	
	    conf disc
	
	<-----REL-------
	
	------RLC------>			

_____

1. Set up a call from SPB to SPC and put it on hold.

2. Send "conference established" indication in the CPG.

3. Check through-connection of the speech path.

4. Send "remote hold" indication from SPB.

5. Send "conference disconnected" indication.

TSS THREE_PTY/	TP ISS_V_16_7	ISUP '97 references 2.5.2.5.1, table 2-1/ITU-T Recommendation Q.734.2 [16]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference 2.14.1
Test Purpose				

Test Purpose

Remote user included in 3PTY.

To verify that the IUT can receive the notification information related to 3PTY, and pass it on to the access signalling system.

The IUT should be able to transparently transfer the **CPG** message with the following notifications in the **generic notification indicator** in both the forward and the backward direction:

1) "Conference established".
2) "Conference disconnected".
3) "Remote hold".

```
access              SPA              SPB(MTC)              SPD (controlling 3PTY)

<-----setup------   <-----IAM-------   <-----IAM-------

-----alerting--->   ------ACM------>   ------ACM------>

-----connect---->   ------ANM------>   ------ANM------>

<--remote hold---   <-----CPG-------   <-----CPG-------

                      remote hold        remote hold

<----conf est----   <-----CPG-------   <-----CPG-------

                       conf est           conf est

      ... 3PTY communication ...

<---remote hold--   <-----CPG-------   <-----CPG-------

                      remote hold        remote hold

<----conf disc---   <-----CPG-------   <-----CPG-------

                       conf disc          conf disc

<---disconnect---   <-----REL-------   <-----REL-------

                    ------RLC------>   ------RLC------>
```
_____

```
1. Set up a call to a UNI at SPA and put it on hold.

2. Assist call set up to the access observe the indications: "conference established",
"conference disconnected and "remote hold".

3. The 3PTY served user starts the 3PTY conversation.

4. Check the 3PTY communication towards the remote party.

5. Send "remote hold" indication to the remote party, sign that the other party has
been disconnected.

6. Send "conference disconnected", sign that the remote user has been retrieved.

7. Check that communication is possible and release the call.
```

TSS THREE_PTY/	TP ISS_V_16_8	ISUP '97 reference 2.6.15/ITU-T Recommendation Q.734.2 [16]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Served user initiates 3PTY; interaction with HOLD. To verify that the IUT does not send any notifications to the remote users by request of HOLD by the served user during the 3PTY conversation active phase. Pre-test conditions. Arrange the data in the IUT such that the served user has activated 3PTY and HOLD supplementary services.				

```
 SPC                  SPA                  SPB

                      ------IAM------->

                      <-----ACM--------

                      <-----ANM--------

                      ------CPG------->     check held state

 <-----IAM-------

 ------ACM------>

 ------ANM------>

 <-----CPG-------   -------CPG------>

     conf est          conf est

     ... 3PTY communication ...

                            Served user at SPA activates hold

                              --> nothing is observed at SPB

 <-----CPG-------   ------REL------>

    conf disc       <-----RLC-------

 <-----REL-------

 ------RLC------>
```

_____

1. Set up a first call from SPA to SPB and put it on hold.

2. Set up a second call from SPA to SPC.

3. Join the two calls into a 3PTY communication and check "conference established" in the CPG.

4. Check the 3PTY communication towards each party.

5. Check that no notification of call Hold is received at SPC.

TSS THREE_PTY/	TP ISS_V_16_9	ISUP '97 reference 2.7/ITU-T Recommendation Q.734.2 [16]	Selection expression IWorkE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose 3PTY; interaction with other networks. To verify that the IUT will discard the call progress information in case of interaction with network which does not provide it. The 3PTY should be completed.				

```
 SP(non-ISUP)    SPA              SPB(MTC)          SPD (controlling 3PTY)

 <-----IAI------   <-----IAM-------

 ------ACM----->   ------ACM------>

 ------ANC----->   ------ANM------>

                   <-----CPG-------

                      remote hold

                   <-----CPG-------

                        conf est

        ... 3PTY communication ...

                   <-----CPG-------

                      remote hold

                   <-----CPG-------

                        conf disc

 <-----CCL------   <-----REL-------

                   ------RLC------>
```
_____

1. Set up a call from SPB to a non-ISUP destination at SPC and put it on hold.

2. Send "conference established" indication in the CPG.

3. Check through-connection of the speech path.

4. Send "remote hold" indication from SPB.

5. Send "conference disconnected" indication.

7.3.17 Completion of Calls on No Reply (CCNR)

TSS CCNR-ISUP/	TP ISS_V_17_1_1	ISUP '97 references 4.2.1.1, 5.3.1.1/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
ISUP Preference Indicator in the CCNR call.
To verify that for the CCNR call, the IUT sets the ISUP preference indicator in the **forward call indicator** parameter in the **IAM** to "ISDN User Part required all the way".
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.

```
 access               SPA              SPB

 ------setup--------> -------IAM------->

                      <------ACM--------

          No reply

 ----disconnect---> ------REL-------->

                      <-------RLC-------

                      ...  TCAP transaction ...

 <------recall-------

 --setup CCNR call--> -------IAM------->    ISUP required all the way
:

 <------disconnect--- <------REL--------
:
_____

1. Set up a call to free user at SPB.

2. User at SPB has no reply.

3. Check that user at SPB becomes free by using the RemoteUserFree CCNR ASE operation.

4. CCNR call with "ISDN User Part required all the way" in the FCI of the IAM.
```

TSS CCNR-ISUP/	TP ISS_V_17_1_2	ISUP '97 reference 4.2.1.3/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
CCNR parameter in the CCNR call.
To verify that for the CCNR call, the IUT includes in the **IAM** the CCNR call indicator in the **CCSS parameter** coded as "CCSS call".
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.

```
 access              SPA                  SPB

 ------setup-------> -------IAM-------->

                     <------ACM--------

          No reply

 ----disconnect---> -------REL-------->

                     <------RLC-------

         ... TCAP transaction ...

 ----CCNR recall---> -------IAM-------->

:                                 CCNR call

 <----disconnect---- <------REL---------

:
_____
```

1. Set up a call to free user at SPB.

2. User at SPB has no reply.

3. Check that user at SPB becomes free by using the RemoteUserFree CCNR ASE operation.

4. Check Indication "CCSS call" in the IAM.

TSS CCNR-ISUP/	TP ISS_V_17_1_3	ISUP '97 reference 5.1.1.1.1/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None
<td colspan="5">Test Purpose CCNR call with retained basic call information. To verify that for the CCNR call, the IUT includes the retaine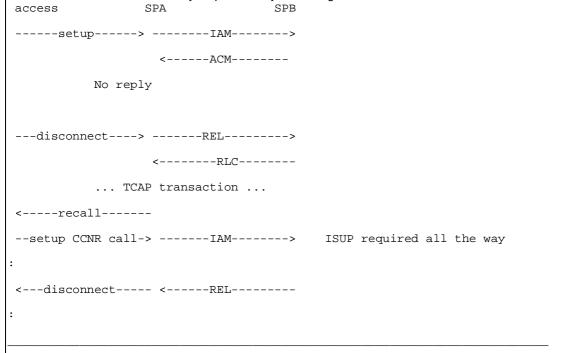d call information in the **IAM**: **User service information;** **User service information prime;** **Access transport** (e.g. called party sub-address); **Called party number.** Pre-test conditions. Arrange the data in the IUT such that the calling user subscribes to the CCNR and such that the relevant call information that is to be tested may be provided by the calling user. <pre> access   SPA   SPB

 ------setup------> --------IAM-------->

                   <------ACM--------

          No reply

 ---disconnect----> -------REL--------->

                   <--------RLC--------

          ... TCAP transaction ...

 <-----recall-------

 --setup CCNR call-> -------IAM-------->   ISUP required all the way

:

 <---disconnect----- <------REL---------

:
</pre><hr>1. Set up a call with USI, USIp, ATP and/or CdPN, which encounters user at SPB no answer, activates TCAP and terminates the call.

2. User at SPB is free.

3. Check that user at SPB becomes free by using the RemoteUserFree CCNR ASE operation.

4. CCNR call with "ISDN User Part required all the way" in the FCI of the IAM. The retained call information about ATP, USI, USIp and CdPN shall be checked too.</td> |

TSS CCNR-ISUP/	TP ISS_V_17_1_4	ISUP '97 reference 5.1.1.1.1/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE AND PICS A.19/3	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
CCNR call with retained call information & interactions with other supplementary services.
To verify that for the CCNR call, the IUT includes the retained call information in the IAM:
Calling party number (if supported);
Access transport (e.g. calling party sub-address if supported);
UUS1,2,3 (retained request if supported);
UUS1 (information given by user in response to CCNR recall, if supported);
Optional forward call indicator (with COLP request).
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCNR and such that the relevant call
information for the applicable supplementary services may be provided by the calling user (e.g. SUB, COLP).

```
 access               SPA                  SPB

 -------setup-------> -------IAM-------->

                       <------ACM--------

           No reply



 ---disconnect----> -------REL--------->

                       <--------RLC--------

         ... TCAP transaction ...

 <-------recall------

 --setup CCNR call--> --------IAM------->    ISUP required all the way

:

 <------disconnect--- <------REL---------

:

_____
```

1. Set up a call with Calling party number (if supported) ATP (e.g. calling party
sub-address if supported); UUS1, 2, 3 (retained request if supported) UUS1 (information
given by user in response to CCNR recall, if supported) OFCI (with COLP request) which
encounters user at SPB with no answer, activates TCAP and terminate the call.

2. User at SPB is free.

3. Check that user at SPB becomes free by using the RemoteUserFree CCNR ASE operation.

4. CCNR call with "ISDN User Part required all the way" in the FCI of the IAM. The
retained call information. about ATP, UUS1,2,3 request, UUI in CCNR recall and CdPN
shall be checked too.

TSS CCNR-ISUP/	TP ISS_V_17_1_5	ISUP '97 reference 5.3.2.1, 5.3.3.1, 5.3.4.1/ITU-T Recommendation Q.733.5 [14]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Transit support of CCNR Possible Indicator parameter. To verify that the IUT is able to pass the CCNR Possible Indicator parameter in the ACM/CPG transparently to the preceding exchange.				

```
 SPC                   SPA                   SPB

 <------IAM------- <-------IAM-------

 -------ACM------> -------ACM------>

 <------REL------- <-------REL-------

 -------RLC------> -------RLC------>

_____

1. Check CCNR Possible Indicator parameter in the ACM/CPG.
```

TSS CCNR-ISUP/	TP ISS_V_17_1_6	ISUP '97 references 5.3.2.1, 5.3.3.1, 5.3.4.1/ITU-T Recommendation Q.733.5 [14]	Selection expression IntermE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Transit support of CCSS parameter in IAM. To verify that the IUT is able to pass CCSS parameter transparently to the succeeding exchange.				

```
 SPC                   SPA                   SPB

-------IAM------> -------IAM--------> CCSS parameter

:

_____

1. Set up a CCNR call to user at SPB.

2. Check that CCSSpar is received.
```

TSS CCNR-ISUP/	TP ISS_V_17_1_7	ISUP '97 reference 4.2.1.2/ITU-T Recommendation Q.733.5 [14]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
CCNR possible to destination B.
To verify that the IUT is able to generate in an **ACM/CPG** message the field containing a CCNR possible indicator with a "CCNR possible" indication.
 	
`access          SPA              SPB`
 	
` set the destination`
 	
` B user free`
 	
`               <------IAM--------`
 	
`               -------ACM------->`
 	
`No reply`
 	
`               <------REL--------`
 	
`               -------RLC------->`
 	
` <---disconnect----`
 	
`:`
_____
 	
1. UNI at SPA no answer.
 	
2. Check that "CCNR possible" is received in the ACM/CPG message.
 	
3. Release the call.				

TSS CCNR-ISUP/	TP ISS_V_17_1_8	ISUP '97 reference 4.2.1.3/ITU-T Recommendation Q.733.5 [14]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
CCNR parameter in the CCNR call.
To verify that the IUT is able to terminate the CCNR call, with the CCNR call indicator in the **CCNR parameter** in the **IAM** coded as "CCNR call".
<pre> access   SPA   SPB
 	
 set the destination B no answer
 	
                   <------IAM-------- normal call
 	
                   -------ACM-------> CCNR possible
 	
          No reply
 	
 <---disconnect----   <------REL---------
 	
                   -------RLC------->
 	
                   ... TCAP transaction ...
 	
user frees resources
 	
                    RemoteUserFree to CCNR call (& reserve resource)
 	
                   resource(s) still available
 	
 <-----setup--------- <-----IAM--------- CCNR call
 	
 ------alert--------> ------ACM------->
 	
 -----connect-------> ------ANM------->
 	
 <-----disc---------- <-----REL---------
 	
 :</pre>_____
1. UNI at SPA no answer.
2. Check that remote user is free by using the RemoteUserFree CCNR ASE operation.
3. Process a CCNR call specified in the IAM.
4. Check that the call is terminated (ANM, CON, ...).				

TSS CCNR-ISUP/	TP ISS_V_17_1_9	ISUP '97 reference 5/ITU-T Recommendation Q.733.5 [14]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose CCNR not possible to destination B. To verify that the IUT is able to generate in an **ACM/CPG** the CCNR possible indicator parameter with a "CCNR not possible" indication. NOTE: CCNR is not possible. Possible reasons include the queue is set to zero or filled up or due to maintenance reasons. Pre-test conditions. Arrange the data in the IUT such that CCNR for destination B is not possible.				

```
 access              SPA             SPB

 set the destination

 B user free

                    <------IAM--------  normal call

                    -------ACM-------> CCNR not possible

          No reply


 <---disconnect----   <------REL---------

                    -------RLC-------->


:
_____

1. Set up a call to free user at SPA.

2. Check that "CCNR not possible" is received in the ACM or CPG message.

3. Release the call.
```

TSS CCNR-ISUP/	TP ISS_V_17_1_10	ISUP '97 reference 6.10.2.2 c)/ITU-T Recommendation Q.733.5 [14]	Selection expression DLE AND PICS A.19/9	ITU-T Recommendation Q.788 [29] reference None
Test Purpose CCNR call as a normal call - Interaction with CFB. To verify that the IUT deletes the CCNR parameter in the **IAM** if the CCNR call is forwarded by the initially busy user. Pre-test conditions. User at destination B must subscribe to and activate CFB to an external user while the recall timer is running (CCNR-T9).				

```
 SPC                SPA                SPB

 ------IAM------->  (free)

 <-----ACM-------- CCNR possible

    No Reply

 ------REL------->

 ------RLC------->

   (user at SPA activates CDIV while CCNR-T9 runs)

 -----IAM-------->  -------IAM-----> CFB

   with CCNRpar       no CCNRpar

:

_____

1. Set up a call to free user at SPA.

2. Check that no CCNRpar is received in the IAM.
```

TSS CCNR-ISUP/	TP ISS_V_17_1_11	ISUP '97 reference 5.3.5.1/ITU-T Recommendation Q.733.5 [14]	Selection expression DLE AND PICS A.19/6	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Maximum number of CCNR request queue entries of destination B.
To verify that the IUT supports the maximum number of up to 5 queue entries.

```
 access               SPA                     SPB

 set the destination

 B Free

 user no reply       <-----IAM--------

                     ------ACM-------> CCNR possible


                     ------REL------->

                     <-----RLC--------

                     ...TCAP transaction ...

      Repeat more than 5 set up to no reply user at SPA

:

<----disconnect---   <-----REL--------

                     ------RLC------->
```
_____

1. Set up a call to free user at access.

2. Send maximum number of CCNR requests and check that user at SPA becomes free by using the RemoteUserFree CCNR ASE operation.

3. One more IAM after the maximum number of calls is reached at SPA.

4. Check that "CCNR not possible" is received in the ACM/CPG.

5. Release the call.

6. Set up calls (maximum 5 different) from SPB to SPA which encounters user at SPA no answer. Activate CCNR for the different calls.

7. User at SPB requests maximum allowed CCNR request.

8. Received ACM/CPG with "CCNR not possible".

TSS CCNR-ISUP/	TP ISS_V_17_1_12	ISUP '97 reference 5.3.5.1/ITU-T Recommendation Q.733.5 [14]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Incoming non-CCNR call with identical service requirements released.
To verify that the IUT, having an entry in the CCNR queue, releases a second incoming call if the service requirements of the second call are identical to the entry being processed and resources are available.
NOTE: The original request remains in the queue.
Pre-test conditions.
Arrange the data in the IUT so that there are free resources in addition to the resource reserved for the first CCNR request.

```
 access              SPA                 SPB

set the destination

B free

user no reply        <-----IAM-------- 1st call

                     ------ACM-------> CCNR possible

                     <-----REL--------

                     ------RLC------->

           ... TCAP transaction ..

user frees resources

        RemoteUserFree to 1st call (& reserve resource)

      resource(s) still available for potential 2nd call

                  <-----IAM-------- 2nd independent call

                  ------REL-------> released because identical requirements

                  <-----RLC--------

       ... check TCAP transaction ...


                  <-----IAM-------- 1st. CCNR call (empty queue)

                  ...continue CCNR call 1st call.

:
```
_____

1. Set up a 1st call to free user at access.

2. Check address complete message with CCNR possible(1st call).

3. Check that remote user is free by using the RemoteUserFree CCNR ASE operation.

4. Process a second identical (with the same requirement to the one being processed) set up to the same remote user.

5. Check that the call is released with cause XXXXXXXX (2nd call).

6. Continue the 1st CCNR call in order to get an idle state.

7. Continue the 2nd CCNR call in order to get an idle state.

TSS CCNR-ISUP/	TP ISS_V_17_1_13	ISUP '97 reference 5.3.5.1/ITU-T Recommendation Q.733.5 [14]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Incoming non-CCNR call with not identical service requirements accepted.
To verify that the IUT, having a queue entry in the CCNR queue, accepts a second incoming call if the service requirements of the second call are not identical to the entry being processed and resources are available.
NOTE: The original request remains in the queue.
Pre-test conditions.
Arrange the data in the IUT so that there are free resources in addition to the resource reserved for the first CCNR request.

```
access                 SPA                 SPB

set the destination

B free

user no reply          <-----IAM-------- 1st call

                       ------ACM------> CCNR possible

                       <-----REL--------

                       ------RLC------->

                       ... TCAP transaction ..

user frees resources

                  RemoteUserFree to 1st call (& reserve resource)

                  resource(s) still available for potential 2nd call

 <-----setup--------- <-----IAM--------  2nd. independent call

 ------alert--------> ------ACM------>

 -----connect-------> ------ANM------>

 <-----disc---------- <-----REL--------

              ...continue with the 1st CCNR call...

:
```
_____

1. Set up a call to free user at access.

2. Check address complete message with CCNR possible(1st call).

3. Check that remote user is free by using the RemoteUserFree CCNR ASE operation.

4. Process a second non-identical (without the same requirement to the one being processed) set up.

5. Check that the call is accepted (ANM, CON, ...).

6. End the TCAP dialogue for the 1st call.

CCNR Application Service Element (ASE)

TSS CCNR-ASE/	TP ISS_TC_V_17_2_1	ISUP '97 reference 5.1.1.1.1/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Ability to perform a CCNR REQUEST class 1 operation - successful. To verify that the IUT can successfully perform a CCNR REQUEST operation if required by the calling user: NOTE 1: Send a **CCNRRequest invoke** to the DLE by using the TCAP primitive **TC-BEGIN request**(TC-INVOKE request). NOTE 2: Receive a **CCNRRequest return result** from the DLE in a **TC-CONTINUE indication**(TC-INVOKE indication). Pre-test conditions. Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.				

```
 access              SPA               SPB

 ------setup-------> -------IAM-------->

                     <------ACM------- CCNR possible

        (normal call, user at SPB no answer)

                     -------REL-------->

                     <------RLC---------

            ... TCAP transaction ...

start CCNR-T1    --

<--CCNR Act request---

--CCNR Act response-->

stop CCNR-T1

start CCNR-T2       xxxxTC_BEGIN_REQ-->

stop CCNR-T2        <--TC_CONTINUE_INDx

start CCNR-T3

:

 ----CCNR recall---> -------IAM--------->   CCNR call

 :

 <----disconnect---- <-------REL---------

:
_____

1. The access side activates CCNR.

2. The CCNRRequest invocation is received.

3. The user at SPB is now free for a CCNR call.

4. CCNR call set up with "ISDN User Part required all the way" in the FCI of the IAM.
```

TSS CCNR-ASE/	TP ISS_TC_V_17_2_2	ISUP '97 reference 5.1.1.1.2/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Ability to perform a CCNR REQUEST class 1 operation - unsuccessful.
To verify that if a failure occurs (short or long term denial) while invoking a CCNR REQUEST operation, the IUT is able to indicate the result to the calling user.
NOTE 1:   Send a **CCNRRequest invoke** to the DLE by using the TCAP primitive **TC-BEGIN request**(TC-INVOKE request).
NOTE 2   Receive a **CCNRRequest return error** from the DLE in a **TC-END indication**(TC-U-ERROR indication).
Pre-test conditions
Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.

```
 access                 SPA                 SPB

  -----setup------->  -------IAM-------->

                      <------ACM------- CCNR possible

        (normal call, user at SPB no answer)

                      -------REL-------->

                      <------RLC---------

                       ... TCAP transaction ...

start CCNR-T1    --

<--CCNR Act request---

--CCNR Act response-->

stop CCNR-T1

start CCNR-T2         xxxxxTC_BEGIN_REQxxxx->

stop CCNR-T2          <---TC_END_INDxxxxxxxxx

_____

1. The access side activates CCNR.

2. The CCNRRequest invocation is received.
```

TSS CCNR-ASE/	TP ISS_TC_V_17_2_4	ISUP '97 reference 5.3.1.1/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Ability to indicate a CCNR recall to the calling user.
To verify that the IUT can successfully initiate a CCNR recall to the calling user:
NOTE: Receive a **RemoteUserFree invoke** from the DLE in a **TC-CONTINUE indication**(TC-INVOKE indication).
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.

```
 access                SPA                   SPB

  -----setup------->  -------IAM-------->

                      <------ACM-------- CCNR possible

        (normal call, user at SPB no answer)

                      -------REL-------->

                      <------RLC---------

                        ... TCAP transaction ...

start CCNR-T1    --

<--CCNR Act request---

--CCNR Act response-->

stop CCNR-T1

start CCNR-T2          xxxxTC_BEGIN_REQxxxx-->

stop CCNR-T2          <--TC_CONTINUE_INDxxxx

start CCNR-T3

:

 <---CCNR recall act---

 -----CCNR recall----->  -------IAM------->  CCNR call

 :

 <----disconnect-------  <------REL--------

:
_____
```

1. The access side activates CCNR request and CCNR recall.

2. Check that the CCNRRequest invocation is received.

3. The user at SPB is now free for a CCNR call.

4. Check that CCNR call with "ISDN User Part required all the way" in the FCI of the
IAM.

TSS CCNR-ASE/	TP ISS_TC_V_17_2_5	ISUP '97 reference 5.3.1.1/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Calling user busy when destination B becomes free.
To verify that the IUT can act correctly after receipt of the indication that destination B is free but calling user A is still busy:
NOTE 1: Receive a **RemoteUserFree invoke** from the DLE in a **TC-CONTINUE indication**(TC-INVOKE indication).
NOTE 2: Notify the calling user A.
NOTE 3: Send **CCNRSuspend invoke** in a **TC-CONTINUE request**(TC-INVOKE request) to the DLE.
NOTE 4: Eventually send **CCNRResume invoke** in **TC-CONTINUE request**(TC-INVOKE request) to the DLE if the calling user becomes free.
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.

```
 access              SPA                 SPB

  -----setup------->  -------IAM-------->

                      <------ACM------- CCNR possible

        (normal call, user at SPB no answer)

                      -------REL-------->

                      <------RLC---------

                      ... TCAP transaction ...

start CCNR-T1    --

<--CCNR Act request---

--CCNR Act response-->

stop CCNR-T1

start CCNR-T2         xxxxTC_BEGIN_REQxxxx->

stop CCNR-T2          <--TC_CONTINUE_INDxxxx    CCNRRequest return result

start CCNR-T3

                      <--TC_CONTINUE_INDxxxx    RemoteUserFree

stop CCNR-T3

arrange user to be

found busy            xxxxTC_CONTINUE_REQ-->   CCNRSuspend

or CCNR busy

--Receive notification that

the user at SPB is now free,

--Send no response for that

--User A is now free

                      xxxTC_CONTINUE_REQ-->    CCNRResume
```
_____

1. The access side activates CCNR.

2. Check that the CCNRRequest invocation is received.

3. The user at SPB is now free for a CCNR call.

TSS CCNR-ASE/	TP ISS_TC_V_17_2_5	ISUP '97 reference 5.3.1.1/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None
4. End the TCAP dialogue in order to get an initial state.				

TSS CCNR-ASE/	TP ISS_TC_V_17_2_6	ISUP '97 reference 1.3/ITU-T Recommendation Q.733.5 [14]	Selection expression Local AND PICS A.19/1	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Support of the retain option.
To verify that the IUT performs the retain option by setting the **retainSupported** parameter to TRUE or FALSE in the
CCNRRequest or in the **CCNRRequest return result**.
Pre-test conditions for OLE.
Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.

```
Case a)

 access              SPA                 SPB

  -----setup------->  -------IAM-------->

                     <------ACM------- CCNR possible

        (normal call, user at SPB no answer)

                     -------REL-------->

                     <------RLC---------

                      ... TCAP transaction ...

start CCNR-T1    --

<--CCNR Act request---

--CCNR Act response-->

stop CCNR-T1

start CCNR-T2        xxxxTC_BEGIN_REQxxxx->  retainSupported = TRUE

stop CCNR-T2         <--TC_CONTINUE_INDxxxx  retainSupported = TRUE

start CCNR-T3

_____

1. The access side activates CCNR.

2. Check that the CCNRRequest invocation is received with "RetainSupported = TRUE".

3. End the TCAP dialogue in order to get an initial state.
```

TSS CCNR-ASE/	TP ISS_TC_V_17_2_6	ISUP '97 reference 1.3/ITU-T Recommendation Q.733.5 [14]	Selection expression Local AND PICS A.19/1	ITU-T Recommendation Q.788 [29] reference None

```
Case b)

 access            SPA                   SPB

    set the destination

    B free

                    <-------IAM--------

                     -------ACM------->CCNR possible

        (normal call, user at SPB no answer)

                    <------REL---------

                    -------RLC-------->
... TCAP transaction ...


                    <--TC_BEGIN_REQxxxx retainSupported = TRUE

                    xxxTC_CONTINUE_IND-> retainSupported = TRUE

    user free       <-------REL--------

                    -------RLC------->
_____

1. UNI at SPA free.

2. Check that the CCNRRequest invocation is received with "RetainSupported = TRUE".

3. Free destination B.
```

TSS CCNR-ASE/	TP ISS_TC_V_17_2_7	ISUP '97 reference 5.1.1.1.1/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE AND PICS A.19/2	ITU-T Recommendation Q.788 [29] reference None
Test Purpose Maximum number of outstanding CCNR requests of a user. To verify that the IUT does not send any **CCNRRequest** to the DLE if the maximum number of outstanding requests is reached. Pre-test conditions. Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.				

```
 access                 SPA                SPB

   -----setup-------->   -------IAM-------->

                         <------ACM-------- CCNR possible

         (normal call, user at SPB no answer)

                         -------REL-------->

                         <------RLC---------

                    ... TCAP transaction ...

start CCNR-T1     --

<--CCNR Act request---

--CCNR Act response-->

stop CCNR-T1

start CCNR-T2         xxxxTC_BEGIN_REQxxxx-->

stop CCNR-T2          <--TC_CONTINUE_INDxxxx    CCNRRequest return result

start CCNR-T3

      repeat activate CCNR request until the maximum

      number of CCNR request  supported by SPA

      check that no CCNR request is send after the specified number of entries
_____

1. The access side activates CCNR.

2. Check that no TC_BEGIN_REQ is sent after the maximum number of CCNR request is
reached at SPA.

3. The test case fails if the maximum number of outstanding requests is reached and
CCNRRequest is received.

4. End the TCAP dialogue in order to get an initial state.
```

TSS CCNR-ASE/	TP ISS_TC_V_17_2_8	ISUP '97 references 5.1.1.2.2, 5.3.5.1, 5.5.4/ITU-T Recommendation Q.733.5 [14]	Selection expression DLE AND PICS A.19/6	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Maximum number of queue entries CCNR requests.
To verify that the IUT sends a **CCNRRequest return error** to the OLE if the maximum number of queue entries is reached.
NOTE: Send CCNRRequest return error in TC-END request(TC-INVOKE request).

```
 access                   SPA                    SPB

  set the destination

  B free

                     <------IAM---------

                     -------ACM-------->CCNR possible

         (normal call, user at SPB no answer)

                     <------REL---------

                     -------RLC-------->

                     ... TCAP transaction ...

                       <---xxTC_BEGIN_REQx

                       xxTC_CONTINUE_IND-->    CCNRRequest return result

                          ... repeat activate CCNR request

                               until the maximum number of CCNR

                               request  supported by the IUT

                               is reached (fill up the queue)

                     <-----IAM---------

                     ------ACM-------->

 User no answer      ------REL-------->

                     <-----RLC---------

                     <---xxTC_BEGIN_REQx

                     xxxxTC_END_IND----->    CCNRRequest return error

                                         (short or long term denial)

 User free           <-------REL--------

                     --------RLC------->
```
_____

1. UNI at SPA becomes free.

2. Call to the destination B.

3. Check that "CCNR possible" is received in the address complete message.

4. Check that CCNRRequest return error is received in TC_END_IND.

5. Free destination B

TSS CCNR-ASE/	TP ISS_TC_V_17_2_9	ISUP '97 reference 5.5.4/ITU-T Recommendation Q.733.5 [14]	Selection expression Local	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Ability to end a dialogue.
To verify that the IUT can end a TCAP dialogue after a successful CCNR call.
NOTE: Send a **TC-END request** without component primitive upon sending of the **ACM**, **CPG** or **CON.**
Pre-test conditions for OLE.
Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.

```
 access                 SPA                 SPB

 set the destination

 B free

                       <-----IAM---------

                       ------ACM-------->

 User no answer        ------REL-------->

                       <-----RLC---------

                  ... TCAP transaction ...

                   <---xxTC_BEGIN_REQx

                   xxTC_CONTINUE_IND-->  CCNRRequest return result
 :

                   xxTC_CONTINUE_IND-->  RemoteUserFree
:

 <-----set up------- <-------IAM---------   CCNR call

                     --------ACM-------->

                     xxxxTC_END_IND----->
 :

 <----disconnect---- <-------REL---------
```
_____

1. UNI at SPA free.

2. Check that a TC_END_IND primitive without component is received in order to end the CCNR operation.

TSS CCNR-ASE/	TP ISS_TC_V_17_2_10	ISUP '97 reference 7.1/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE AND PICS A.19/7	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Initiate the CCNR supplementary service **even if no CCNR possible indicator is received in the ACM/CPG.**
To verify that the IUT sends a **CCNRRequest invoke** if the calling user activates the CCNR.
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.

```
 access              SPA                  SPB

 ------setup-------> -------IAM-------->

                     <-----ACM---------

(normal call, user at SPB no answer)

                     -------REL-------->

                     <------RLC---------

               ... TCAP transaction ...

start CCNR-T1    --

<--CCNR Act request---

--CCNR Act response-->

stop CCNR-T1

start CCNR-T2        xxxxTC_BEGIN_REQxxxx-->

stop CCNR-T2         <--TC_CONTINUE_INDxxxx

start CCNR-T3

:

 ----CCNR recall---> -------IAM------->    CCNR call

 :

 <----disconnect---- <-------REL-------

:
```
_____

1. The access side activates CCNR.

2. Check that the CCNRRequest invocation is received.

3. The user at SPB is now free for a CCNR call.

4. CCNR call set up with "ISDN User Part required all the way" in the FCI of the IAM.

TSS CCNR-ASE/	TP ISS_TC_V_17_2_11	ISUP '97 reference 9.1/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Support of the retention timer CCNR-T1.

To verify that the retention timer CCNR-T1 can be started after receive of a **address complete message** with CCNR possible from the DLE and stopped normally after activation of the CCNR supplementary service by the calling user.

Pre-test conditions.

Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.

```
 access              SPA                  SPB

 ------setup------->  -------IAM-------->

                      <------ACM---------

(normal call, user at SPB no answer)

 <-----disconnect---  <------REL---------

                      -------RLC-------->

                                     SPB starts CCNR-T1 and receives

                                     nothing until the timer expires

<------facility-------

        Act CCNR

start CCNR-T1

send nothing until it expires

_____

1. The access side activates CCNR after CCNR-T1 runs out.

2. Check that no CCNR request is stored in the queue.
```

TSS CCNR-ASE/	TP ISS_TC_V_17_2_12	ISUP '97 reference 5.5.4.1 c), 9.1/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Support of the CCNR request operation timer CCNR-T2.
To verify that the timer CCNR-T2 can be started after sending of a **CCNRRequest** to the DLE and stopped normally after receipt of **CCNRRequest return result** from the DLE.
NOTE: If the timer expires a **TC-END** with **TC-L-CANCEL** indication primitive is received from the DLE and the service request is rejected.
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.

```
 access                        SPA                          SPB

 ------setup-------> -------IAM-------->

                     <------ACM---------

(normal call, user at SPB no answer)

 <----disconnect---- <------REL---------

                     -------RLC------->

                  ... TCAP transaction ...

start CCNR-T2        xxxTC_BEGIN_REQ-->    SPB starts CCNR-T2 and sends

                     <--TC_ENDxxxxxxxxxx    TC_END_IND if the timer expires
_____

1. The access side activates CCNR.

2. End the TCAP dialogue in order to get an initial state.
```

TSS CCNR-ASE/	TP ISS_TC_V_17_2_13	ISUP '97 reference 5.1.2.1.2/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Support of the CCNR service duration timer CCNR-T3.
To verify that the IUT can successfully deactivate a CCNR request if the CCNR service duration timer CCNR-T3 expires.
NOTE: Send a **CCNRCancel invoke** with cancelCause to the DLE by using the TCAP primitive **TC-END request**(TC-INVOKE request) with cancelCause "CCNR-T3 Timeout".
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.

```
 access                SPA                              SPB

 ------setup------->  -------IAM-------->

                      <------ACM---------

(normal call, user at SPB no answer)

 <-----disconnect---  <------REL---------

                      -------RLC------->

                      ... TCAP transaction ...

start CCNR-T2         xxxxTC_BEGIN_REQ-->    CCNRRequest invoke

stop CCNR-T2          <---TC_CONT_INDxxxx    CCNRRequest return result

start CCNR-T3

starts CCNR-T3 and sends TC_CONTINUE_IND with RemoteUserFree if it expires

                      <---TC_CONT_INDxxxxx     RemoteUserFree

                      xxxxxTC_END_REQ---->   TC_END_IND with CancelCause

"timeout CCNR-T3"

_____

1. The access side activates CCNR.

2. After CCNR-T3 timer expiry the IUT shall send the CancelCause "CCNR-T3 timeout" in a
TC_END.
```

TSS CCNR-ASE/	TP ISS_TC_V_17_2_14	ISUP '97 references 5.1.2.1.2 ii), 9.1/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Support of the CCNR recall timer CCNR-T4.
To verify that the timer CCNR-T4 can be stopped after receiving an indication from the user for a CCNR recall.
NOTE: CCNR-T4 contains the maximum time the network will wait for the calling user A to respond to a CCNR
          recall. The OLE sends a **CCNRCancel invoke** in **TC-END request** to the DLE in case of CCNR-T4 expiry.
Pre-test conditions.
Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.

```
 access              SPA                 SPB

 ------setup------->  -------IAM-------->

                      <------ACM---------

(normal call, user at SPB no answer)

 <-----disconnect---  <------REL---------

                      -------RLC-------->

                      ... TCAP transaction ...

start CCNR-T2        xxxxTC_BEGIN_REQ-->      CCNRRequest invoke

start CCNR-T3        <---TC_CONT_INDxxxx       CCNRRequest return result

:

                     <---TC_CONT_INDxxxxx     RemoteUserFree


SPB starts CCNR-T4 and receives TC_END_IND with CancelCause if it expires

                     xxxxxTC_END_REQ---->    TC_END_IND with CancelCause

"timeout CCNR-T3"
_____

1. The access side activates CCNR and does not accept the CCNR recall within CCNR-T4.

2. Check that the CancelCause "CCNR-T4 timeout" is received in a TC_END.
```

TSS CCNR-ASE/	TP ISS_TC_V_17_2_15	ISUP '97 references 5.3.1.2 b) i)/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE AND PICS A.19/5	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Reject a second identical activation of CCNR.
To verify that the IUT does not send any CCNRRequest to the DLE if a second identical activation of CCNR is done.
Pre-test conditions.
Arrange the data in the IUT so that the calling user subscribes to CCNR supplementary service.

```
 access              SPA                     SPB

 ------setup------->  -------IAM-------->

                      <------ACM---------

(normal call, user at SPB no answer)

 <----disconnect----  <------REL---------

                      -------RLC-------->  (1st normal call)

                      ... TCAP transaction ...

start CCNR-T1    --

<--CCNR Act request---

--CCNR Act response-->

stop CCNR-T1

start CCNR-T2        xxxxTC_BEGIN_REQ-->

stop CCNR-T2         <--TC_CONTINUE_INDx

start CCNR-T3

:

 ------setup------->  -------IAM-------->

                      <------ACM---------

(normal call, user at SPB no answer)

 <----disconnect----  <------REL---------

                      -------RLC-------->  (2nd normal call)

:
```
_____

1. The access side activates CCNR.

2. First call to no answer user at SPB.

3. Check that the CCNRRequest invocation is received.

4. Second identical call from the IUT to the same SPB.

5. End the TCAP dialogue.

TSS CCNR-ASE/	TP ISS_TC_V_17_2_16	ISUP '97 references 5.3.1.2 b) ii)/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE AND PICS A.19/4	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Treat a second identical activation of CCNR as a new request.
To verify that the IUT treats a second identical activation of CCNR as a new request.
Pre-test conditions.
Arrange the data in the IUT so that the calling user subscribes to CCNR supplementary service.

```
 access                SPA                              SPB

 ------setup------->  -------IAM-------->

                      <------ACM---------
(normal call, user at SPB no answer)

 <----disconnect----  <------REL---------

                      -------RLC-------->  (1st normal call)

                      ... TCAP transaction ...

start CCNR-T1    --

<--CCNR Act request---

--CCNR Act response-->

stop CCNR-T1

start CCNR-T2         xxxxTC_BEGIN_REQ-->

stop CCNR-T2          <--TC_CONTINUE_INDx

start CCNR-T3

:

 -------setup------>  -------IAM-------->

                      <------ACM---------
(normal call, user at SPB no answer)

 <----disconnect----  <------REL---------

                      -------RLC-------->  (2nd normal call)

                      ... TCAP transaction ...

start CCNR-T1    --

<--CCNR Act request---

--CCNR Act response-->

stop CCNR-T1

start CCNR-T2         xxxxTC_BEGIN_REQ-->

stop CCNR-T2          <--TC_CONTINUE_INDx

start CCNR-T3

:
```
_____
1. The access side activates CCNR.

ETSI

TSS CCNR-ASE/	TP ISS_TC_V_17_2_16	ISUP '97 references 5.3.1.2 b) ii)/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE AND PICS A.19/4	ITU-T Recommendation Q.788 [29] reference None

2. First call to no answer user at SPB.

3. Check that the CCNRRequest invocation is received.

4. Second identical call from the IUT to the same SPB.

5. Second identical activation of the CCNR request.

6. End the TCAP dialogue.

TSS CCNR-ASE/	TP ISS_TC_V_17_2_17	ISUP '97 reference 5.1.2.2.2/ITU-T Recommendation Q.733.5 [14]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Support of the CCNR service supervision timer CCNR-T7.
To verify that the IUT deactivates the CCNR-request if CCNR-T7 expires.
NOTE 1: CCNR-T7 is started after sending a **CCNRRequest return result** to the OLE.
NOTE 2: CCNR-T7 is stopped after the destination B becomes not busy, before sending **RemoteUserFree** to the
         OLE.
NOTE 3: Send a **CCNRCancel invoke** in a **TC-END request**(TC-INVOKE request) with cancelCause "CCNR-T7
         Timeout".

```
 access                 SPA                SPB

 set the destination

 B free

                        <-----IAM----------

                        ------ACM--------->

(user at SPB no answer)

                        ------REL--------->

                        <-----RLC----------

                        ... TCAP transaction ...

                        <---xxTC_BEGIN_REQx

                        xxTC_CONTINUE_IND-->  CCNRRequest return result


SPB starts CCNR-T7 and receives TC_END_IND with CancelCause

"CCNR-T7 Timeout" if it expires

                        xxxxxTC_END_IND--->

    user free          <-------REL--------

                        --------RLC------->

:
```

TSS CCNR-ASE/	TP ISS_TC_V_17_2_18	ISUP '97 references 5.3.1.5 a), 9.1/ITU-T Recommendation Q.733.5 [14]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Support of the destination B idle guard timer CCNR-T8.
To verify that no resources are available at the destination B side until timer CCNR-T8 expires.

```
 access                SPA                      SPB

 set the destination

 B free

                      <--------IAM----------

                      ---------ACM--------->

(user at SPB no answer)

                      ---------REL--------->

                      <--------RLC----------

                  ... TCAP transaction ...

                   <---xxTC_BEGIN_REQx     CCNRRequest

                  xxTC_CONTINUE_IND-->   CCNRRequest return result

:

User is now free      SPB starts timers CCNR-T8

                      SPB checks every second that no resources

                      are available by using T_LOCAL timer

                      <--------IAM----------

                      ---------REL--------->

                      <--------RLC----------

:

<-------setup-------   <--------IAM---------   CCNR-T8 expires

--------alert------>   ---------ACM--------->

-------connect----->   ---------ANM--------->

:
```
_____

1. Check that no resources are available within CCNR-T8, e.g., send an IAM and receiving a REL.

2. Check that resources are now available by sending an IAM and receiving an ACM, etc.

TSS CCNR-ASE/	TP ISS_TC_V_17_2_19	ISUP '97 references 5.3.5.2 d), 9.1/ITU-T Recommendation Q.733.5 [14]	Selection expression DLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose
Support of the DLE recall timer CCNR-T9.
To verify that the timer CCNR-T9 can be started after sending of a **TC-CONTINUE** with **RemoteUserFree** from the DLE and stopped after CCNR call is received from the OLE.
NOTE: Send a **CCNRCancel invoke** in a **TC-END request**(TC-INVOKE request) with cancelCause "CCNR-T9 Timeout".

```
 access                   SPA                   SPB

  set the destination

 B free

                         <-----IAM----------

                         ------ACM--------->

(user at SPB no answer)

                         ------REL--------->

                         <-----RLC----------

                         ... TCAP transaction ...

                         <---xxTC_BEGIN_REQx

                         xxTC_CONTINUE_IND-->  CCNRRequest return result

:

                         xxTC_CONTINUE_IND-->  RemoteUserFree


                         SPB starts CCNR-T9 and receives

                         TC_END_IND with CancelCause

                         "CCNR-T9 Timeout" if it expires

                         xxxxxTC_END_IND--->

 user free               <-------REL--------

                         --------RLC------->
```
_____

1. Check that the CancelCause "CCNR-T9 timeout" is received in a TC_END.

2. Free destination B.

TSS CCNR-ASE/	TP ISS_TC_V_17_2_20	ISUP '97 references 7.7.3.3.1, 7.7.3.3.2, 9.3/ITU-T Recommendation Q.733.5 [14]	Selection expression Local AND PICS A.19/19	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

Support of the interworking supervision timer T_{SUP}.

To verify that the timer T_{SUP} is used correctly in case of interworking with a private network.

NOTE 1:   The DLE sends a **CCNRCancel invoke** in **TC-END request** to the OLE without cancelCause in case of T_{SUP} timer expiry.

NOTE 2:   The OLE sends a **CCNRCancel invoke** in **TC-END request** to the DLE without cancelCause in case of T_{SUP} timer expiry.

Pre-test conditions for OLE.

Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.

```
 SPC              SPA                 SPB (private network)

 -------IAM------->   -------IAM------>

 <------ACM-------   <------ACM-------

(user at SPB no answer)

 <------REL-------   <------REL-------

 -------RLC------->   -------RLC------>

                 ... TCAP transaction ...

 xxxTC_BEGIN_REQ-->   xxTC_BEGIN_REQ-->

                  SPB starts T_SUP and sends no

                  CCNRRequest return result within T_SUP

                  xxxTC_END_REQ--->  TC_END_IND without CancelCause
_____

1. Check that a TC_END without CancelCause is received.
```

TSS CCNR-ASE/	TP ISS_TC_V_17_2_21	ISUP '97 reference 5.1.1.1.1/ITU-T Recommendation Q.733.5 [14]	Selection expression OLE	ITU-T Recommendation Q.788 [29] reference None

Test Purpose

CCNR REQUEST not invoked.

To verify that if a call is attempted with an ACM without CCNR possible indicator, then no CCNR REQUEST shall be sent from the OLE to the DLE.

Pre-test conditions.

Arrange the data in the IUT such that the calling user subscribes to the CCNR supplementary service.

```
 access              SPA                  SPB

 ------setup-------> -------IAM--------->

                 <------ACM---------- (no CCNR possible indicator)

     (no answer from SP B)

 <-----disconnect--- <------REL----------

                 -------RLC--------->
_____

1. The access side shouldn't activate CCNR.

2. Do not answer the call and do not include CCNR possible indicator.
```

8   Test Coverage

The Test Purposes defined in the present document cover most main capabilities of the ISUP '97 reference specification for supplementary services. A list containing the number of Test Purposes for each supplementary service is provided in table 3.

Whenever it was possible, the Test Purposes have been described such that they bundle related requirements of the standard. Due to this fact a Test Purpose may lead to implementing several test cases for the ATS.

The majority of Test Purposes (over 80 %) concentrate on valid behaviour. The number of invalid behaviour Test Purposes is limited. An expansion of the invalid behaviour Test Purposes is left for further study.

Table 3: Number of tests for the ISUP '97 supplementary services

Item	Supplementary service	Group	Number of Test Purposes
1	Calling Line Identification Presentation	CLIP	19
2	Calling Line Identification Restriction	CLIR	11
3	Connected Line Identification Presentation	COLP	18
4	Connected Line Identification Restriction	COLR	12
5	Terminal portability	TP	10
6	User-to-user signalling service 1 implicit	UUS1_I	6
	User-to-user signalling service 1 explicit	UUS1_E	18
	User-to-user signalling service 2	UUS2	16
	User-to-user signalling service 3	UUS3	17
7	Closed User Group	CUG	23
8	Sub-addressing	SUB	5
9	Malicious Call Identification	MCID	16
10	Conference call, add-on	CONF	16
11	Explicit Call Transfer	ECT	30
12	Call diversion services	CDIV	49
13	Call Hold	HOLD	12
14	Call Waiting	CW	8
15	Completion of Calls to Busy Subscriber (ISUP)	CCBS_ISUP	15
	Completion of Calls to Busy Subscriber (ASE)	CCBS_ASE	21
16	Three Party service	THREE_PTY	9
17	Completion of Calls on No Reply	CCNR	34
	Grand total		365

9   Conformance to the PICS proforma specification

A PICS proforma that conforms to this PICS proforma specification shall be technically equivalent to annex A, and shall preserve the numbering and ordering of the items in annex A.

A PICS that conforms to this PICS proforma specification shall:

  a) describe an implementation which is claimed to conform to ISDN User part (ISUP) '97 reference specification ITU-T Recommendation Q.730 [1];

  b) be a conforming PICS proforma which has been completed in accordance with the instructions for completion given in clause A.1;

  c) include the information necessary to uniquely identify both the supplier and the implementation.

Annex A (normative):
PICS proforma for ISDN User Part
(ISUP) '97 - supplementary services

(This annex forms an integral part of the present document.)

A.1   Instructions for completing the PICS proforma

The supplier of the implementation shall complete the PICS proforma in each of the spaces provided. If necessary, the supplier may provide additional comments separately.

More detailed instructions are given at the beginning of the different clauses of the PICS proforma.

A.1.1   Purposes and structure

The purpose of this PICS proforma is to provide a mechanism whereby a supplier of an implementation of the requirements defined in ISDN User Part (ISUP) '97 reference specification ITU-T Recommendation Q.730 may provide information about the implementation in a standardized manner.

The PICS proforma is subdivided into clauses for the following categories of information:

- instructions for completing the PICS proforma;

- identification of the implementation;

- identification of the reference protocol specification;

- PICS proforma tables (containing the global statement of conformance).

A.1.2   Abbreviations and conventions

The PICS proforma contained in this annex is composed of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7.

Item column

It contains a number that identifies the item in the table.

Item description column

It describes each respective item (e.g. parameters, timers, etc.).

Reference column

It gives reference to the ISUP '97 specification for the supplementary services ITU-T Recommendation Q.730, except where explicitly stated otherwise.

Status column

The following notations, defined in ISO/IEC 9646-7, are used for the status column:

m   mandatory - the capability is required to be supported;

n/a   not applicable - in the given context, it is impossible to use the capability. No answer in the support column
     is   required;

•   optional - the capability may be supported or not;

o.i   qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies a
           unique group of related optional items and the logic of their selection which is defined immediately following
           the table;

ci   conditional - the requirement on the capability ("m", "o" or "n/a") depends on the support of other optional or
           conditional items. "i" is an integer identifying a unique conditional status expression that is defined
           immediately following the table. For nested conditional expressions, the syntax "IF ... THEN (IF ... THEN ...
           ELSE...) ELSE ..." shall be used to avoid ambiguities. If an ELSE clause is omitted, "ELSE n/a" shall be
           implied.

NOTE: Support of a capability means that the capability is implemented in conformance to the ISUP '97
           specification ITU-T Recommendation Q.730.

Support column

The support column shall be filled in by the supplier of the implementation. The following common notations, defined
in ISO/IEC 9646-7, are used for the support column:

Y or y   supported by the implementation;

N or n   not supported by the implementation;

N/A or   no answer required (allowed only if the status is N/A, directly or after evaluation of a conditional status).

Values allowed column

This column contains the values or the ranges of values allowed.

Values supported column

The support column shall be filled in by the supplier of the implementation. In this column the values or the ranges of
values supported by the implementation shall be indicated.

References to items

For each possible item answer (answer in the support column) within the PICS proforma a unique reference exists. It is
defined as the table identifier, followed by a slash character "/", followed by the item number in the table. If there is
more than one support column in a table, the columns shall be discriminated by letters (a, b, etc.) respectively.

EXAMPLE 1:   A.5/4 is the reference to the answer of item 4 in table A.5 of annex A.

EXAMPLE 2:   A.6/3b is the reference to the second answer (i.e. in the second support column) of item 3 in
              table A.6 of annex A.

A.2   Identification of the implementation

Identification of the Implementation Under Test (IUT) and the system in which it resides - the System Under Test (SUT) should be filled in so as to provide as much detail as possible regarding version numbers and configuration options.

The product supplier information and client information should both be filled in if they are different.

A person who can answer queries regarding information supplied in the ICS should be named as the contact person.

A.2.1   Date of the statement

Date of the statement:	

A.2.2   Implementation Under Test (IUT) identification

IUT name:	
IUT version:	

A.2.3   System Under Test (SUT) identification

SUT name:	
Hardware configuration:	
Operating system:	

A.2.4   Product supplier

Name:	
Address:	
Telephone number:	
Facsimile number:	
Additional information:	

A.2.5   Client

Name:	
Address:	
Telephone number:	
Facsimile number:	
Additional information:	

A.2.6   ICS contact person

Name:	
Telephone number:	
Facsimile number:	
Additional information:	

A.3   Identification of the reference specification

This PICS proforma applies to the following standard: ITU-T Recommendation Q.730.

Note that as prerequisite it is necessary to support the basic services described in ITU-T Recommendation Q.761. A separate PICS proforma has been specified for ISUP'97 basic services ITU-T Recommendation Q.788.

A.4   PICS proforma tables

A.4.1   Global statement of conformance

	(Yes/No)
Are all mandatory capabilities implemented?	
NOTE: Answering "No" to this question indicates non-conformance to the reference protocol specification. Non-supported mandatory capabilities are to be identified in the PICS, with an explanation of why the implementation is non-conforming.	

A.4.2   Roles

Table A.1: Roles

Item	Is the implementation an ...	Reference	Status	Support
1	OLE - Originating local exchange	2.1.1.1/ITU-T Recommendation Q.764	o.1	
2	NTE - National transit exchange	2.1.1.2/ITU-T Recommendation Q.764	o.1	
3	OutIE - Outgoing international exchange	2.1.1.3/ITU-T Recommendation Q.764	o.1	
4	ITE - International transit exchange	2.1.1.4/ITU-T Recommendation Q.764	o.1	
5	IncIE - Incoming international exchange	2.1.1.5/ITU-T Recommendation Q.764	o.1	
6	DLE - Destination local exchange	2.1.1.6/ITU-T Recommendation Q.764	o.1	
NOTE: o.1: It is mandatory to support at least one of these items.				

A.4.3   Capabilities

The following matrix is an abbreviation guide for roles:

OLE	NTE	OutIE	ITE	IncIE	DLE
Local	Transit	Gateway	Transit	Gateway	Local
	IntermE	IntermE	IntermE	IntermE	
CntrlE	CntrlE	CntrlE			
	IWorkE	IWorkE	IworkE	IWorkE	

Table A.2: Generic signalling procedures for supplementary services

Item	Is the exchange able to ...	Reference	Status	Support
1	End-to-end signalling - Pass along method?	Table 1/ITU-T Recommendation Q.761	o	
2	End-to-end signalling - SCCP connection oriented?	Table 1/ITU-T Recommendation Q.761	o	
3	End-to-end signalling - SCCP connectionless?	Table 1/ITU-T Recommendation Q.761	o	
4	Generic number transfer?	Table 1/ITU-T Recommendation Q.761	o	
5	Generic digit transfer?	Table 1/ITU-T Recommendation Q.761	o	
6	Generic notification procedure?	Table 1/ITU-T Recommendation Q.761	o	
7	Simple service activation procedure?	Table 1/ITU-T Recommendation Q.761	o	
8	Remote operations procedure?	Table 1/ITU-T Recommendation Q.761]	o	
9	Network specific procedures?	Table 1/ITU-T Recommendation Q.761	o	

Table A.3: Supplementary Services Major Capabilities

Item	Is the exchange able to ...	Reference	Status	Support
1	Support the service Calling Line Identification Presentation (CLIP)?	ITU-T Recommendation Q.731.3	o	
2	Support the service Calling Line Identification Restriction (CLIR)?	ITU-T Recommendation Q.731.4	o	
3	Support the service COnnected Line Identification Presentation (COLP)?	ITU-T Recommendation Q.731.5	o	
4	Support the service COnnected Line Identification Restriction (COLR)?	ITU-T Recommendation Q.731.6	o	
5	Support the service Terminal Portability (TP)?	ITU-T Recommendation Q.733.4	o	
6	Support at least one User-to-User Signalling service (UUS)?	ITU-T Recommendation Q.737.1	o	
7	Support the service Closed User Group (CUG)?	ITU-T Recommendation Q.735.1	o	
8	Support the service Sub-addressing (SUB)?	ITU-T Recommendation Q.731.8	o	
9	Support the service Malicious Call Identification (MCID)?	ITU-T Recommendation Q.731.7	o	
10	Support the service Conference Call, add-on (CONF)?	ITU-T Recommendation Q.734.1	o	

Item	Is the exchange able to ...	Reference	Status	Support
11	Support the service Explicit Call Transfer (ECT)?	ITU-T Recommendation Q.732.7	o	
12	Support the service Call Forwarding Busy (CFB)?	ITU-T Recommendation Q.732.2	o	
13	Support the service Call Forwarding No Reply (CFNR)?	ITU-T Recommendation Q.732.3	o	
14	Support the service Call Forwarding Unconditional (CFU)?	ITU-T Recommendation Q.732.4	o	
15	Support the service Call Deflection (CD)?	ITU-T Recommendation Q.732.5	o	
16	Support the service Call Hold (HOLD)?	ITU-T Recommendation Q.733.2	o	
17	Support the service Call Waiting (CW)?	ITU-T Recommendation Q.732.1	o	
18	Support the service Completion of Calls to Busy Subscribers (CCBS)?	ITU-T Recommendation Q.733.3	o	
19	Support the Three Party service (3PTY)?	ITU-T Recommendation Q.734.2	o	
20	Support the service Completion of Calls on No Reply (CCNR)?	ITU-T Recommendation Q.733.5	o	

Table A.4: CLIP

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	[OutIE] omit the **calling party number** in case of bilateral agreements?	3.5.2.3.1/ITU-T Recommendation Q.731	o	
2	[OutIE] omit the additional calling party number in the **generic number** in case of bilateral agreements?	3.5.2.3.1/ITU-T Recommendation Q.731	o	
3	[OutIE] omit the calling sub-address in the **access transport** parameter in case of bilateral agreements?	3.2.1/ITU-T Recommendation Q.731	c31	
4	@[IncIE] add a prefix to the **calling party number** and set its nature of address indicator to "unknown"?	3.5.2.4.1/ITU-T Recommendation Q.731	o	
5	@[IncIE] support the coding "address not available" in the address presentation restricted indicator of the **calling party number**?	3.10/ITU-T Recommendation Q.763; 3.5.2.4.2/ITU-T Recommendation Q.731	o	
NOTE:	c51: IF A.5/1 THEN m ELSE n/a. @: national use.			

Table A.5: CLIR

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	[OutIE] discard the **calling party number** if it is received with the address presentation restricted indicator set to "presentation restricted"?	4.5.2.3.2/ITU-T Recommendation Q.731	o	
2	[OutIE] discard the additional calling party number in the **generic number** if it is received with the address presentation restricted indicator set to "presentation restricted"?	4.5.2.3.2/ITU-T Recommendation Q.731	o	
3	[OutIE] discard the calling sub-address in the **access transport** parameter if the **calling party number** is received with the address presentation restricted indicator set to "presentation restricted"?	4.2.1/ITU-T Recommendation Q.731	c31	
NOTE:	c31: IF A.3/1 THEN m ELSE n/a.			

Table A.6: COLP

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	@[OutIE] add a prefix to the **connected number** and set its nature of address indicator to "unknown".	5.5.2.3.1/ITU-T Recommendation Q.731	o	
2	[IncIE] omit the **connected number** in case of bilateral agreements?	5.5.2.4.1/ITU-T Recommendation Q.731	o	
3	[IncIE] omit the additional connected number in the **generic number** in case of bilateral agreements?	5.5.2.4.1/ITU-T Recommendation Q.731	o	
4	[IncIE] remove the COL (zero the address signals of the **connected number**) and set the address presentation restriction indicator to "address not available?	5.5.2.4.1/ITU-T Recommendation Q.731	o	
5	[DLE] deliver the COL?	5.5.2.5.1/ITU-T Recommendation Q.731	m	
6	[DLE] include, if provided by the user, the connected sub-address in the **access transport** parameter?	5.5.2.5.1/ITU-T Recommendation Q.731	o	
NOTE:	@: national use.			

Table A.7: COLR

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	[IncIE] discard the **connected number** if it is received with the presentation restriction indicator set to "presentation restricted"?	6.5.2.4.1/ITU-T Recommendation Q.731	o	
2	[IncIE] discard the additional connected number in the **generic number** if it is received with the presentation restriction indicator set to "presentation restricted"?	6.5.2.4.1/ITU-T Recommendation Q.731	o	
3	[IncIE] remove the COL (zero the address signals of the **connected number**) and change the presentation restriction indicator from "presentation restricted" to "address not available?	6.5.2.4.1/ITU-T Recommendation Q.731	o	

Table A.8: Service not supported

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	[Gateway] support discarding of Suspend and Resume messages, if the network does not support the TP service?	4.5.2.3.2; 4.5.2.4.2/ITU-T Recommendation Q.733	c11	
2	[IncIE] support correct rejection or processing of CUG calls in case of interworking with networks not supporting CUG?	1.5.2.4.2; Table 1-1/ITU-T Recommendation Q.735	c22	
3	[OutIE] return an **IRS** with bit A of the MCID response indicator set to 0 "MCID not included", if the national network does not support the MCID service?	7.5.2.3.2/ITU-T Recommendation Q.731	c33	
NOTE:	c31: IF NOT A.3/5 THEN o ELSE n/a. c32: IF NOT A.3/7 THEN m ELSE n/a. c33: IF NOT A.3/9 THEN o ELSE n/a.			

Table A.9: UUS

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	Support the **user-to-user information** parameter with at least 32 octets as user information?	1.1.2.1; 1.2.2.1; 1.3.2.1/ITU-T Recommendation Q.737	m	
2	Support the maximum number of up to 128 octets as user information in the **user-to-user information** parameter? If not 128, specify maximum allowed number.	1.1.2.1; 1.2.2.1; 1.3.2.1/ITU-T Recommendation Q.737	o	
3	Support implicit request of service UUS1?	1.1/ITU-T Recommendation Q.737	o	
4	Support explicit request of service UUS1?	1.1/ITU-T Recommendation Q.737	o	
5	[IntermE] support the rejection procedure of an explicit service request or discarding of user-to-user information as described in 1.1.5.2.5.2/ITU-T Recommendation Q.737.	1.1.5.2.2.2/ITU-T Recommendation Q.737	c51	
6	Support service UUS2?	1.2/ITU-T Recommendation Q.737	o	
7	[DLE] deliver user-to-user information after the user has answered the call?	1.2.2.1/ITU-T Recommendation Q.737	c72	
8	Support service UUS3?	1.3/ITU-T Recommendation Q.737	o	
NOTE:	c81: IF A.8/4 THEN o ELSE n/a. c82: IF A.8/6 THEN o ELSE n/a.			

Table A.10: CUG

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	Support Closed User Group with decentralized administration?	1/ITU-T Recommendation Q.735	m	
2	Support Closed User Group with centralized administration?	1/ITU-T Recommendation Q.735	n/a	
3	[Gateway] support conversion of national to international CUG codes?	1.5.2.3.1; 1.5.2.4.1/ITU-T Recommendation Q.735	o	
4	Support invocation of CLIR for CUG calls?	1.6.6/ITU-T Recommendation Q.735	o	

Table A.11: SUB

Item	Is the exchange able to ...	Reference	Status	Support
1	Support the maximum 23 octet length of the Sub-address parameter?	8.4; 8.7/ITU-T Recommendation Q.731	m	

Table A.12: MCID

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	[OLE] provide the calling party sub-address as part of the MCID service?	7.2.1/ITU-T Recommendation Q.731	o	
2	[DLE] store and process the calling party sub-address as part of the MCID service?	7.2.1/ITU-T Recommendation Q.731	o	
3	[DLE] support the registration of the original called number and the redirecting number for MCID when invoking CFB, CFNR, CFU, CD?	7.6.10/ITU-T Recommendation Q.731	o	
4	[OutIE] omit for MCID the **calling party number** in case of bilateral agreements?	7.5.2.3.1/ITU-T Recommendation Q.731	o	

Table A.13: CONF

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	Support the user notification procedures?	1.5/ITU-T Recommendation Q.734	c11	
2	[OLE] support *which* maximum number of conference participants?	1.5.2.1.1.2/ITU-T Recommendation Q.734	o	
NOTE:	c21 IF A.2/6 THEN o ELSE n/a.			

Table A.14: ECT

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	[Local] store remote user numbers (calling party number/connected number or additional calling party number/additional connected number) and send them in the **call transfer number** when call transfer is performed?	7.5.2.1.1.1/ITU-T Recommendation Q.732.7	m	
2	Support the loop prevention procedure?	7.2.1; 7.5.2.1.1.2/ITU-T Recommendation Q.732.7	o	
3	[Local] support the timer T_{ECT}? If yes, specify the timer value (2 s to 6 s).	7.5.2.1.1.2.1; 7.9/ITU-T Recommendation Q.732.7	c31	
4	[Local] reject the call transfer in case of T_{ECT} timer expiry?	7.5.2.1.1.2.1/ITU-T Recommendation Q.732.7	c42	
5	[Local] complete the call transfer in case of T_{ECT} timer expiry?	7.5.2.1.1.2.1/ITU-T Recommendation Q.732.7	c52	
6	[Gateway] omit the **call transfer number** if the address presentation restriction indicator indicates "presentation restricted"?	7.5.2.3.1; 7.5.2.4.1/ITU-T Recommendation Q.732.7	o	
7	[IWorkE] support call control interworking between ISUP'97 and protocols not supporting the loop prevention procedure, i.e. return a **LOP** (response) message with the indication "insufficient information"?	7.7/ITU-T Recommendation Q.732.7	c73	
8	[Local] reject the call transfer in case receipt of **LOP** messages with the response indicator set to "insufficient information"?	7.5.2.1.1.2.1/ITU-T Recommendation Q.732.7	c84	
9	[Local] complete the call transfer in case receipt of **LOP** messages with the response indicator set to "insufficient information"?	7.5.2.1.1.2.1/ITU-T Recommendation Q.732.7	c94	
NOTE:	c91: IF A.9/2 THEN m ELSE n/a. c92: IF A.9/2 THEN o.2 ELSE n/a. c93: IF A.9/2 THEN o ELSE n/a. c94: IF A.9/2 THEN o.3 ELSE n/a. o.2: It is mandatory to support exactly one of these options. o.3: It is mandatory to support exactly one of these options.			

Table A.15: CFB, CFNR, CFU, CD

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	Support the diversion notification procedures?	2.5.2.5.1.2/ITU-T Recommendation Q.732	m	
2	Support the maximum number of up to 5 diversions for each call? If not 5, specify the maximum allowed number.	Table 2-2/ITU-T Recommendation Q.732	o	
3	[DLE] omit octet 2 of the **redirection information** if the redirection counter equals 1?	3.45/ITU-T Recommendation Q.763	o	
4	[DLE] support the usage of the Original redirection reasons in the **redirection information** parameter with the encoding: 0001 user busy @. 0010 no reply @. 0011 unconditional @?	3.45/ITU-T Recommendation Q.763	o	
5	[DLE] include the **redirection number** in the ACM or CPG?	2.5.2.5.1.2d)/ITU-T Recommendation Q.732	m	
7	[IncIE] pass on the **redirection number** if received in an ACM or CPG?	2.5.2.4.1/ITU-T Recommendation Q.732	o	
9	[Local] support the usage of **event information** with the encoding: 0000100 CFB. 0000101 CFNR. 0000110 CFU?	2.4.2/ITU-T Recommendation Q.732	o	
10	[IntermE] support the transport of **event information** with the encoding: 0000100 CFB. 0000101 CFNR. 0000110 CFU?	2.4.2/ITU-T Recommendation Q.732	o	
11	[OutIE] omit the **original called number** in case of bilateral agreements?	2.5.2.3.1/ITU-T Recommendation Q.732 3.5.2.3.1/ITU-T Recommendation Q.731	o	
12	[OutIE] omit the **redirecting number** in case of bilateral agreements?	2.5.2.3.1/ITU-T Recommendation Q.732 3.5.2.3.1/ITU-T Recommendation Q.731	o	
13	[IncIE] omit the **redirection number** in case of bilateral agreements?	2.5.2.4.1/ITU-T Recommendation Q.732 5.5.2.4.1/ITU-T Recommendation Q.731	o	
14	@[OutIE] add a prefix to the **redirection number** and set its nature of address indicator to "unknown" (as for COLP A.6/1).	5.5.2.3.1/ITU-T Recommendation Q.731	o	
15	@[IncIE] add a prefix to the **original called number** and set its nature of address indicator to "unknown" (as for CLIP A.4/4).	3.5.2.4.1/ITU-T Recommendation Q.731	o	
16	@[IncIE] add a prefix to the **redirecting number** and set its nature of address indicator to "unknown" (as for CLIP A.4/4).	3.5.2.4.1/ITU-T Recommendation Q.731	o	
NOTE:	@: national use.			

Table A.16: CFNR, CD

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	[Local] retain call to the served user until alerting begins at the diverted-to user (late release - option A)?	2.5.2.5.2.2, table 2-2/ITU-T Recommendation Q.732	o.4	
2	[Local] clear call to the served user on invocation of call diversion (immediate release - option B)?	2.5.2.5.2.2, table 2-2/ITU-T Recommendation Q.732	o.4	
3	[Local] through-connect in both directions immediately after sending the IAM?	2.5.2.5.1.2 c) ii)/ITU-T Recommendation Q.732	c31	
4	[Local] perform through-connection in both directions at the receipt of ACM or CON?	2.5.2.5.1.2 c) ii)/ITU-T Recommendation Q.732	c41	
5	[Local] support the Call Forwarding No Reply timer? If yes, specify the timer value.	Table 2-2/ITU-T Recommendation Q.732	c52	
NOTE:	o.4: It is mandatory to support exactly one of these options. c51: IF A.5/2 THEN o.5 ELSE n/a. c52: IF A.3/13 THEN m ELSE o. o.5: It is mandatory to support at least one of these options.			

Table A.17: HOLD

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	[OLE] support call hold as soon as the calling user has provided all of the information necessary for processing the call?	2.2.1/ITU-T Recommendation Q.733	o	
2	[OLE] support call hold by the calling user after alerting has commenced?	2.2.1/ITU-T Recommendation Q.733	c21	
3	Supply the remote user with an in-band indication in the case of interworking with PSTN?	2.7/ITU-T Recommendation Q.733	o	
NOTE:	c31: IF A. 3/1 THEN m ELSE o.			

Table A.18: CCBS

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	[Local] support the retain option?	3.1.3 m)/ITU-T Recommendation Q.733.3	o	
2	[OLE] support the maximum number of up to 5 outstanding CCBS requests of a user? If not 5, specify the maximum allowed number.	3.5.1.1.1.1/ITU-T Recommendation Q.733.3	o	
3	[OLE] include the **calling party number** in the CCBS request invoke component?	3.5.1.1.1.1/ITU-T Recommendation Q.733.3	o	
4	[OLE] treat a second identical activation of CCBS as a new request?	3.5.3.1.2/ITU-T Recommendation Q.733.3	o.6	
5	[OLE] reject a second identical activation of CCBS?	3.5.3.1.2/ITU-T Recommendation Q.733.	o.6	
6	[DLE] support the maximum number of up to 5 queue entries? If not 5, specify the maximum allowed number.	3.5.3.5.1/ITU-T Recommendation Q.733.3	o	
7	[OLE] initiate the CCBS supplementary service even if no diagnostics is received in the release message with causes #17 or #34?	3.7.1/ITU-T Recommendation Q.733.3	o	
8	[DLE] treat the CCBS call as a "destination B busy upon arrival of CCBS request" in case of interaction between CCBS and CFB?	3.6.10.2.2 c); 3.5.3.5.2 c)/ITU-T Recommendation Q.733.3	o.7	
9	[DLE] forward the CCBS call as a normal call in case of interaction between CCBS and CFB?	3.6.10.2.2 c)/ITU-T Recommendation Q.733.3	o.7	
10	[DLE] release the call with the diagnostics "CCBS possible" when the service is available?	3.5/ITU-T Recommendation Q.733.3	m	
11	[DLE] release the call with the diagnostics "CCBS not possible" if the service is not available?	3.5/ITU-T Recommendation Q.733.3	m	
12	[OLE] support the retention timer CCBS-T1? If yes, specify the timer value (greater than 15 s).	3.9.1/ITU-T Recommendation Q.733.3	m	
13	[OLE] support the CCBS request operation timer CCBS-T2? The value of the timer shall be 10 s.	3.9.1/ITU-T Recommendation Q.733.3	m	
14	[OLE] support the CCBS service duration timer CCBS-T3? If yes, specify the timer value (15 min to 45 min).	3.9.1/ITU-T Recommendation Q.733.3	m	
15	[OLE] support the CCBS recall timer CCBS-T4? If yes, specify the timer value (10 s to 20 s).	3.9.1/ITU-T Recommendation Q.733.3	m	
16	[DLE] support the CCBS service supervision timer CCBS-T7? The value of the timer shall be 60 min.	3.9.2/ITU-T Recommendation Q.733.3	m	
17	[DLE] support the destination B idle guard timer CCBS-T8? If yes, specify the timer value (less than 15 s).	3.9.2/ITU-T Recommendation Q.733.3	m	
18	[DLE] support the recall timer CCBS-T9? The value of the timer shall be 30 s.	3.9.2/ITU-T Recommendation Q.733.3	m	
19	[Local] support the interworking supervision timer T_{SUP}? The value of the timer shall be 60 min.	3.9.3/ITU-T Recommendation Q.733.3	o	
NOTE:	o.6: It is mandatory to support exactly one of these options. o.7: It is mandatory to support exactly one of these options.			

Table A.19: CCNR

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	[Local] support the retain option?	1.3/ITU-T Recommendation Q.733.5	o	
2	[OLE] support the maximum number of up to 5 outstanding CCNR requests of a user? If not 5, specify the maximum allowed number.	5.1.1.1.1/ITU-T Recommendation Q.733.5	o	
3	[OLE] include the **calling party number** in the CCNR request invoke component?	5.1.1.1.1/ITU-T Recommendation Q.733.5	o	
4	[OLE] treat a second identical activation of CCNR as a new request?	5.3.1.2/ITU-T Recommendation Q.733.5	o.6	
5	[OLE] reject a second identical activation of CCNR?	5.3.1.2/ITU-T Recommendation Q.733.5	o.6	
6	[DLE] support the maximum number of up to 5 queue entries? If not 5, specify the maximum allowed number.	5.3.5.1/ITU-T Recommendation Q.733.5	o	
7	[OLE] initiate the CCNR supplementary service even if no CCNR possible indicator is received in the ACM/CPG.	7.1/ITU-T Recommendation Q.733.5	o	
8	[DLE] treat the CCNR call as a "destination B no reply upon arrival of CCNR request" in case of interaction between CCNR and CFNR?	6.10.2.2 c); 5.3.5.2 d)/ITU-T Recommendation Q.733.5	o.7	
9	[DLE] forward the CCNR call as a normal call in case of interaction between CCNR and CFNR?	6.10.2.2 c)/ITU-T Recommendation Q.733.5	o.7	
10	[DLE] release the call with the diagnostics "CCNR possible" when the service is available?	5/ITU-T Recommendation Q.733.5	m	
11	[DLE] set the ACM/CPG with the indicator "CCNR not possible" if the service is not available?	5/ITU-T Recommendation Q.733.5	m	
12	[OLE] support the retention timer CCNR-T1? If yes, specify the timer value (greater than 15 s).	9.1/ITU-T Recommendation Q.733.5	m	
13	[OLE] support the CCNR request operation timer CCNR-T2? The value of the timer shall be a few seconds.	9.1/ITU-T Recommendation Q.733.5	m	
14	[OLE] support the CCNR service duration timer CCNR-T3? If yes, specify the timer value (60 min to 180 min).	9.1/ITU-T Recommendation Q.733.5	m	
15	[OLE] support the CCNR recall timer CCNR-T4? If yes, specify the timer value (10 s to 20 s).	9.1/ITU-T Recommendation Q.733.5	m	
16	[DLE] support the CCNR service supervision timer CCNR-T7? The value of the timer shall be 190 min.	9.2/ITU-T Recommendation Q.733.5	m	
17	[DLE] support the destination B idle guard timer CCNR-T8? If yes, specify the timer value (less than 15 s).	9.2/ITU-T Recommendation Q.733.5	m	
18	[DLE] support the recall timer CCNR-T9? The value of the timer shall be 20 s + some seconds for CCNR call set-up.	9.2/ITU-T Recommendation Q.733.5	m	
19	[Local] support the interworking supervision timer T_{SUP}? The value of the timer shall be 190 min.	9.3/ITU-T Recommendation Q.733.5	o	
NOTE:	o.6: It is mandatory to support exactly one of these options. o.7: It is mandatory to support exactly one of these options.			

Annex B (normative):
PIXIT proforma for ISDN User Part (ISUP) '97 supplementary services

(This annex forms an integral part of the present document.)

The PIXIT proforma enlists all the parameters and data that are needed to configure the ATS (and/or the IUT) before executing the testing campaign. It is to be filled out as part of the preparation for testing by e.g. "The test client". The testing laboratory then inputs this data into the implementation of the ATS. More information about the purpose and intent of the PIXIT can be found in ISO/IEC 9646-5.

B.1 Identification summary

PIXIT Number:	
Test Laboratory Name:	
Date of Issue:	
Issued to:	

B.2 Abstract test suite summary

Protocol Specification:	ITU-T Recommendation Q.730
ATS Specification:	ISUP_97_Suppl_Services
Abstract Test Method:	Distributed multiparty test method

B.3 Test laboratory

Test Laboratory Identification:	
Test Laboratory Manager:	
Test Laboratory contact:	
Means of Testing:	
Instructions for completion:	

B.4 Client identification

Client Identification:	
Client Test manager:	
Test Facilities required:	

B.5   System under test

Name:	
Version:	
SCS Number:	
Machine configuration:	
Operating system identification:	
IUT Identification:	
PICS Reference for IUT:	
Limitations of the SUT:	
Environmental conditions:	

B.6   Ancillary protocols

Protocol name	Version No.	PICS Ref.	PIXIT Ref.	PCTR Ref.
MTP				
Access protocol				

B.7   Protocol information for ISUP

B.7.1   Protocol identification

Name:	ISDN User Part (ISUP) '97 supplementary services
Version:	
PICS references:	

B.7.2   IUT information - PIXIT proforma tables

The PIXIT information requested in the following tables is needed to provide the necessary information for the execution of the testing campaign. It is assumed that one exchange role is tested at one time. The answers to some PIXIT questions are related to an individual role. A typical example is the nature of address indicator of the called party number value, which is different in the case of international gateways and national exchanges. That is why if several roles are to be tested, one completed copy of the PIXIT proforma for each role is needed.

B.7.2.1   General configuration

Signalling point codes

Two signalling point codes - one incoming and one outgoing have to be defined for the IUT. For an international intermediate exchange the incoming and outgoing point codes are the same, whereas for an international gateway exchange there are two different signalling point codes because they belong to two separate networks (international and national).

Circuit identification codes

From a formal point of view, in most test cases it is sufficient to use only one CIC per signalling link in order to execute the testing. From a practical point of view the tester could select any CIC within a range of CICs belonging to a route, when initiating a call setup. The tester can, however, use the first CIC in the circuit group, without reducing the generality. The ATS requires the first CIC in the group as an answer to the PIXIT questions B.1/9 and B.1/10 in table B.1.

Table B.1: General configuration

Item	Parameter	Parameter Type	Explanation	Value
1	TSP_SPA_R	BIT_14	SS No.7 Signalling point code of the SUT on the AB interface (right side)	
2	TSP_SPA_L	BIT_14	SS No.7 Signalling point code of the SUT on the AC interface (left side)	
3	TSP_SPB	BIT_14	SS No.7 Signalling point code of the tester on the AB interface	
4	TSP_SPC	BIT_14	SS No.7 Signalling point code of the tester on the AC interface	
5	TSP_NI_R	BIT_2	SS No.7 Network indicator on the AB interface	
6	TSP_NI_L	BIT_2	SS No.7 Network indicator on the AC interface	
7	TSP_SLS_R	BIT_4	SS No.7 Signalling link selection on the AB interface	
8	TSP_SLS_L	BIT_4	SS No.7 Signalling link selection on the AC interface	
9	TSP_CIC_R	BIT_12	SS No.7 Circuit identification code on the AB interface	
10	TSP_CIC_L	BIT_12	SS No.7 Circuit identification code on the AC interface	

B.7.2.2   Parameter values

Subscriber numbers

The subscriber numbers have to be specified for each role which is to be tested. All numbers are by default national (significant) numbers, having the nature of address indicator set accordingly. International numbers are built depending on the specific test situation by either using the own network's country code (answer to the PIXIT question b.2/9) or a foreign country code (answer to the PIXIT question b.2/10). The nature of address indicator for these numbers is set to "international".

Table B.2: Subscriber number parameter values

Item	Parameter	Parameter Type	Explanation	Value
1	TSP_Nb_A	HEX_N	SUBSCRIBER NUMBER LOCATED AT SP A	
2	TSP_Nb_B	HEX_N	SUBSCRIBER NUMBER LOCATED AT SP B	
3	TSP_Nb_C	HEX_N	SUBSCRIBER NUMBER LOCATED AT SP C	
4	TSP_Nb_D	HEX_N	SUBSCRIBER NUMBER LOCATED AT SP D, BEYOND SP B.	
5	TSP_Nb_D2	HEX_N	ANOTHER SUBSCRIBER NUMBER LOCATED AT SP D, BEYOND SP B.	
6	TSP_Nb_D3	HEX_N	ANOTHER SUBSCRIBER NUMBER LOCATED AT SP D, BEYOND SP B.	
7	TSP_Nb_D4	HEX_N	ANOTHER SUBSCRIBER NUMBER LOCATED AT SP D, BEYOND SP B.	
8	TSP_Nb_E	HEX_N	SUBSCRIBER NUMBER LOCATED AT SP E, BEYOND SP C.	
9	TSP_ownCC	HEX_N	COUNTRY CODE OF THE OWN NETWORK	
10	TSP_foreignCC	HEX_N	COUNTRY CODE OF A FOREIGN NETWORK	
11	TSP_prefix	HEX_N	@ PREFIX ADDED TO AN INTERNATIONAL NUMBER	

Table B.3: Additional number parameter values

Item	Parameter	Parameter Type	Explanation	Value
1	TSP_Nb_A_default	HEX_N	Subscriber number which will be provided as default number by the network for UNI at SP A (IUT)	
2	TSP_Nb_B_default	HEX_N	Subscriber number which will be provided as default number by the network for UNI at SP B	
3	TSP_GenNb_B	HEX_N	Additional subscriber number located at SP B	
4	TSP_Nb_C_avail	HEX_N	Information made available by the network in case of MCID for the UNI at SP C (the only information the gateway has, e.g. trunk number)	
5	TSP_Nb_C_default	HEX_N	Subscriber number which will be provided as default number by the network for UNI at SP C	
6	TSP_Nb_C_ incomplete	HEX_N	Subscriber number which will be provided as incomplete number by the network for UNI at SP C	
7	TSP_GenNb_C	HEX_N	Additional subscriber number located at SP C	
8	TSP_Nb_A_MSN	HEX_N	Multiple subscriber number for the subscriber located at SP A	
9	TSP_Nb_B_DDI	HEX_N	Subscriber number located at SP B, with DDI	
10	TSP_Nb_B_MSN	HEX_N	Multiple subscriber number for the subscriber located at SP B	
11	TSP_Nb_C_Non_ ISUP	HEX_N	Subscriber number for which the call will be routed to SP C, on a non-ISUP route	
12	TSP_Nb_A_ sameCUG_noIA	HEX_N	Subscriber number located at SP A belonging to the same CUG as the calling party at SP B without incoming access	
13	TSP_Nb_A_ sameCUG_IA	HEX_N	Subscriber number located at SP A belonging to the same CUG as the calling party at SP B with incoming access	
14	TSP_Nb_A_ otherCUG_noIA	HEX_N	Subscriber number located at SP A belonging to a different CUG as the calling party at SP B without incoming access	
15	TSP_Nb_A_ otherCUG_IA	HEX_N	Subscriber number located at SP A belonging to a different CUG as the calling party at SP B with incoming access	

Table B.4: Other supplementary services parameter values

Item	Parameter	Parameter Type	Explanation	Value
1	TSP_sub_address_ length	OCT_1	Length of the sub-address	
2	TSP_Sub_A	OCT_N	Sub-address of UNI at SP A (IUT)	
3	TSP_Sub_B	OCT_N	Sub-address of UNI at SP B (right side)	
4	TSP_Sub_C	OCT_N	Sub-address of UNI at SP C (left side)	
5	TSP_Sub_E	OCT_N	Sub-address of UNI at SP E (beyond left side SP C)	
6	TSP_CUGIC_NtwId	HEX_4	Network identity of the Closed user group interlock code	
7	TSP_CUGIC_NtwId_int	HEX_4	International Network identity of the Closed user group interlock code	
8	TSP_CUGIC_ BinCode	HEX_4	Binary code of the Closed user group interlock code	
9	TSP_CUGIC_ BinCode_int	HEX_4	International Binary code of the Closed user group interlock code	
10	TSP_CTRef	OCT_1	Call transfer reference	
11	TSP_Con_Sub_ATP	OCT_N	Connected sub-address of UNI at SPA (IUT) + hlc + llc	
12	TSP_Sub_A_ATP	OCT_N	Sub-address of UNI at SPA (IUT) + HLC + LLC	

Item	Parameter	Parameter Type	Explanation	Value
13	TSP_Sub_B_ATP	OCT_N	Sub-address of UNIat SPB (IUT) + HLC + LLC	

B.7.2.3   Timer values

Table B.5: Timer values

Item	Parameter	Parameter Type	Explanation	Value
1	TSP_T_WAIT	INTEGER	Wait for some event timer (max 30 s)	
2	TSP_T_GUARD	INTEGER	Guard timer for the test case (min 30 s)	
3	TSP_tol	INTEGER	Tolerance for ISUP timers (in percent)	
4	TSP_T_LOCAL	INTEGER	Internal timer for testing CCBS-T8 timer (1 s)	

B.7.2.4   Other information

Table B.6: Other information

Item	Parameter	Parameter Type	Explanation	Value
1	TSP_maxB_channel	INTEGER	Maximum number of B channels at the access side (needed for call waiting)	
2	TSP_Orig_ISDN_access	BIT_1	Use of ISDN access at origination ("1"B) or non-ISDN access ("0"B) in the Forward call indicators	
3	TSP_Dest_ISDN_access	BIT_1	Use of ISDN access at termination ("1"B) or non-ISDN access ("0"B) in the Backward call indicators	
4	TSP_NatAdrl_R	BIT_7	Use of Nature of Address for called party number. International number (0000100) national number (0000011)	
5	TSP_PDC	INTEGER	Propagation delay for incoming and outgoing routes	
6	TSP_PDC_X	INTEGER	Propagation delay on the incoming route (in ms)	
7	TSP_PDC_D	INTEGER	Propagation delay on the outgoing route (in ms)	
8	TSP_MNT	BOOLEAN	TRUE if tester support interface for checking MCID recordings	

B.7.2.5   ISDN information

Table B.7: ISDN information

Item	Parameter	Parameter Type	Explanation	Value
1	TSP_LIPN1	OCTETSTRING	Length of the IUT party number (including NPI) for DSS1	
2	TSP_IPN1	OCTETSTRING	IUT party number entered in IA5 format for DSS1	
3	TSP_BASIC	BOOLEAN	TRUE -> basic access FALSE -> primary rate access	
4	TSP_WaitRestart	BOOLEAN	TRUE, if the IUT sends RESTART messages after re-establishment of the multiple frame operation	
5	TSP_T_RESTART	INTEGER	Value for timer that is used to wait for RESTART messages. (Value in seconds)	
6	TSP_BCAPL	OCTETSTRING	Length of Bearer capability (DSS1)	
7	TSP_BCAPV	OCTETSTRING	Bearer capability value (DSS1)	
8	TSP_HLCL	OCTETSTRING	Length of High layer compatibility (DSS1)	
9	TSP_HLCV	OCTETSTRING	High layer compatibility value (DSS1)	
10	TSP_LLCL	OCTETSTRING	Length of Low layer compatibility (DSS1)	
11	TSP_LLCV	OCTETSTRING	Low layer compatibility value (DSS1)	
12	TSP_CDPNOCTET3	OCTETSTRING	Octet 3 of the called party number, type of number and numbering plan identifier (DSS1)	
13	TSP_CRLENGTH	CR_LENGTH_TYPE	Call Reference length value (1..2) (DSS1)	
14	TSP_BCHNUM	BIT7OR8	B-channel for call, BITSTRING[7..8] (DSS1)	

Annex C (normative):
Protocol Conformance Test Report (PCTR) Proforma for ISDN User Part (ISUP) '97 supplementary services

(This annex forms an integral part of the present document.)

The PCTR proforma is based on ISO/IEC 9646-5. Any additional information needed can be found in the present document.

C.1   Identification summary

C.1.1   Protocol conformance test report

PCTR Number:	
PCTR Date:	
Test Laboratory Identification:	
Test Laboratory Manager:	
Signature:	

C.1.2   IUT identification

Name:	
Version:	
Protocol specification:	
PICS:	
Previous PCTR if any:	

C.1.3   Testing environment

PIXIT Number:	
ATS Specification:	
Abstract Test Method:	Distributed multiparty test method
Means of Testing identification:	
Date of testing:	
Conformance Log reference(s):	
Retention Date for Log reference(s):	

C.1.4   Limits and reservation

Additional information relevant to the technical contents or further use of the test report, or the rights and obligations of the test laboratory and the client, may be given here. Such information may include restriction on the publication of the report.

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C.1.5   Comments

Additional comments may be given by either the client or the test laboratory on any of the contents of the PCTR, for example, to note disagreement between the two parties.

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C.2   IUT Conformance status

This IUT has/has not been shown by conformance assessment to be non-conforming to the referenced protocol specification.

Strike the appropriate words in this sentence. If the PICS for this IUT is consistent with the static conformance requirements (as specified in clause C.3 in the present document) and there are no "fail" verdicts to be recorded (in clause C.6) strike the word "has/". Otherwise strike the words "/has not".

C.3   Static conformance summary

The PICS for this IUT is or is not consistent with the static conformance requirements in the specified protocol.

Strike the appropriate words in this sentence.

C.4   Dynamic conformance summary

The test campaign did/did not reveal errors in the IUT.

Strike the appropriate words in this sentence. If there are no "fail" verdicts to be recorded (in clause C.6 of the present document) strike the word "did/". Otherwise strike the words "/did not".

Summary of the results of groups of test:

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C.5   Static conformance review report

If clause C.3 indicates non-conformance, this clause itemizes the mismatches between the PICS and the static conformance requirements of the specified protocol specification.

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C.6   Test campaign report

Table C.1: Test campaign report - CLIP

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
CLIP/ISS_V_1_1				
CLIP/ISS_V_1_2				
CLIP/ISS_V_1_3				
CLIP/ISS_V_1_4				
CLIP/ISS_V_1_5				
CLIP/ISS_V_1_6				
CLIP/ISS_V_1_7_a				
CLIP/ISS_V_1_7_b				
CLIP/ISS_V_1_8				
CLIP/ISS_V_1_9				
CLIP/ISS_V_1_10				
CLIP/ISS_V_1_11				
CLIP/ISS_V_1_12				
CLIP/ISS_V_1_13				
CLIP/ISS_I_1_14				
CLIP/ISS_V_1_15				
CLIP/ISS_V_1_16				
CLIP/ISS_I_1_17				
CLIP/ISS_I_1_18				
CLIP/ISS_V_1_19				

Table C.2: Test campaign report - CLIR

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
CLIR/ISS_V_2_1				
CLIR/ISS_V_2_2				
CLIR/ISS_V_2_3				
CLIR/ISS_V_2_4				
CLIR/ISS_V_2_5				
CLIR/ISS_V_2_6				
CLIR/ISS_V_2_7_a				
CLIR/ISS_V_2_7_b				
CLIR/ISS_V_2_8				
CLIR/ISS_V_2_9				
CLIR/ISS_V_2_10				
CLIR/ISS_V_2_11				

Table C.3: Test campaign report - COLP

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
COLP/ISS_V_3_1				
COLP/ISS_V_3_2_a				
COLP/ISS_V_3_2_b				
COLP/ISS_V_3_2_c				
COLP/ISS_V_3_3_a				
COLP/ISS_V_3_3_b				
COLP/ISS_V_3_4_a				
COLP/ISS_V_3_4_b				
COLP/ISS_I_3_5_a				
COLP/ISS_I_3_5_b				
COLP/ISS_V_3_6_a				
COLP/ISS_V_3_6_b				
COLP/ISS_V_3_7_a				
COLP/ISS_V_3_7_b				
COLP/ISS_V_3_8_a				
COLP/ISS_V_3_8_b				
COLP/ISS_V_3_9_a				
COLP/ISS_V_3_9_b				
COLP/ISS_I_3_10_a				
COLP/ISS_I_3_10_b				
COLP/ISS_I_3_10_c				
COLP/ISS_I_3_10_d				
COLP/ISS_V_3_11_a				
COLP/ISS_V_3_11_b				
COLP/ISS_V_3_12_a				
COLP/ISS_V_3_12_b				
COLP/ISS_V_3_13_a				
COLP/ISS_V_3_13_b				
COLP/ISS_V_3_14_a				
COLP/ISS_V_3_14_b				
COLP/ISS_V_3_15_a				
COLP/ISS_V_3_15_b				
COLP/ISS_V_3_16_a				
COLP/ISS_V_3_16_b				
COLP/ISS_V_3_17_a				
COLP/ISS_V_3_17_b				
COLP/ISS_V_3_18_a				
COLP/ISS_V_3_18_b				

Table C.4: Test campaign report - COLR

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
COLR/ISS_V_4_1_a				
COLR/ISS_V_4_1_b				
COLR/ISS_I_4_2_a				
COLR/ISS_I_4_2_b				
COLR/ISS_V_4_3_a				
COLR/ISS_V_4_3_b				
COLR/ISS_V_4_4_a				
COLR/ISS_V_4_4_b				
COLR/ISS_V_4_5_a				
COLR/ISS_V_4_5_b				
COLR/ISS_I_4_6_a				
COLR/ISS_I_4_6_b				
COLR/ISS_V_4_7_a				
COLR/ISS_V_4_7_b				
COLR/ISS_V_4_8_a				
COLR/ISS_V_4_8_b				
COLR/ISS_V_4_9_a				
COLR/ISS_V_4_9_b				
COLR/ISS_V_4_10_a				
COLR/ISS_V_4_10_b				
COLR/ISS_V_4_11_a				
COLR/ISS_V_4_11_b				
COLR/ISS_V_4_12_a				
COLR/ISS_V_4_12_b				

Table C.5: Test campaign report - TP

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
TP/ISS_V_5_1				
TP/ISS_V_5_2				
TP/ISS_I_5_3				
TP/ISS_V_5_4_a				
TP/ISS_V_5_4_b				
TP/ISS_V_5_5				
TP/ISS_V_5_6				
TP/ISS_V_5_7				
TP/ISS_V_5_8				
TP/ISS_V_5_10				
NO_TP/ISS_I_5_9				

Table C.6-1-1: Test campaign report - UUS1 implicit

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
UUS/UUS1_I/ISS_V_6_1_1				
UUS/UUS1_I/ISS_V_6_1_2_a				
UUS/UUS1_I/ISS_V_6_1_2_b				
UUS/UUS1_I/ISS_I_6_1_3_a				
UUS/UUS1_I/ISS_I_6_1_3_b				
UUS/UUS1_I/ISS_I_6_1_4_a				
UUS/UUS1_I/ISS_I_6_1_4_b				
UUS/UUS1_I/ISS_V_6_1_5_a				
UUS/UUS1_I/ISS_V_6_1_5_b				
UUS/NO_UUS1_I/ISS_I_6_1_6_a				
UUS/NO_UUS1_I/ISS_I_6_1_6_b				

Table C.6-1-2: Test campaign report - UUS1 explicit

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
UUS/UUS1_E/ISS_V_6_1_7_a				
UUS/UUS1_E/ISS_V_6_1_7_b				
UUS/UUS1_E/ISS_I_6_1_8_a				
UUS/UUS1_E/ISS_I_6_1_8_b				
UUS/UUS1_E/ISS_I_6_1_9_a				
UUS/UUS1_E/ISS_I_6_1_9_b				
UUS/UUS1_E/ISS_I_6_1_10				
UUS/UUS1_E/ISS_V_6_1_11_a				
UUS/UUS1_E/ISS_V_6_1_11_b				
UUS/UUS1_E/ISS_V_6_1_13_a				
UUS/UUS1_E/ISS_V_6_1_13_b				
UUS/UUS1_E/ISS_I_6_1_14_a				
UUS/UUS1_E/ISS_I_6_1_14_b				
UUS/UUS1_E/ISS_V_6_1_15_a				
UUS/UUS1_E/ISS_V_6_1_15_b				
UUS/UUS1_E/ISS_V_6_1_17_a				
UUS/UUS1_E/ISS_V_6_1_17_b				
UUS/UUS1_E/ISS_V_6_1_18				
UUS/UUS1_E/ISS_V_6_1_19_a				
UUS/UUS1_E/ISS_V_6_1_19_b				
UUS/UUS1_E/ISS_V_6_1_20_a				
UUS/UUS1_E/ISS_V_6_1_20_b				
UUS/UUS1_E/ISS_V_6_1_21				
UUS/UUS1_E/ISS_V_6_1_22				
UUS/UUS1_E/ISS_V_6_1_23				
UUS/UUS1_E/ISS_V_6_1_24				
UUS/NO_UUS1_E/ISS_I_6_1_12_a				
UUS/NO_UUS1_E/ISS_I_6_1_12_b				
UUS/NO_UUS1_E/ISS_I_6_1_16_a				
UUS/NO_UUS1_E/ISS_I_6_1_16_b				
UUS/NO_UUS1_E/ISS_I_6_1_16_c				

Table C.6-2: Test campaign report - UUS2

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
UUS/UUS2/ISS_V_6_2_1				
UUS/UUS2/ISS_V_6_2_2_a				
UUS/UUS2/ISS_V_6_2_2_b				
UUS/UUS2/ISS_V_6_2_3				
UUS/UUS2/ISS_V_6_2_6_a				
UUS/UUS2/ISS_V_6_2_6_b				
UUS/UUS2/ISS_V_6_2_7				
UUS/UUS2/ISS_I_6_2_9_a				
UUS/UUS2/ISS_I_6_2_9_b				
UUS/UUS2/ISS_V_6_2_10				
UUS/UUS2/ISS_I_6_2_11				
UUS/UUS2/ISS_I_6_2_13				
UUS/UUS2/ISS_V_6_2_14_a				
UUS/UUS2/ISS_V_6_2_14_b				
UUS/UUS2/ISS_V_6_2_15_a				
UUS/UUS2/ISS_V_6_2_15_b				
UUS/UUS2/ISS_V_6_2_16_a				
UUS/UUS2/ISS_V_6_2_16_b				
UUS/NO_UUS2/ISS_I_6_2_4				
UUS/NO_UUS2/ISS_I_6_2_5				
UUS/NO_UUS2/ISS_I_6_2_8_a				
UUS/NO_UUS2/ISS_I_6_2_8_b				
UUS/NO_UUS2/ISS_I_6_2_12				

Table C.6-3: Test campaign report - UUS3

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
UUS/UUS3/ISS_V_6_3_1				
UUS/UUS3/ISS_V_6_3_2				
UUS/UUS3/ISS_V_6_3_3_a				
UUS/UUS3/ISS_V_6_3_3_b				
UUS/UUS3/ISS_V_6_3_4				
UUS/UUS3/ISS_V_6_3_7_a				
UUS/UUS3/ISS_V_6_3_7_b				
UUS/UUS3/ISS_V_6_3_8				
UUS/UUS3/ISS_V_6_3_10_a				
UUS/UUS3/ISS_V_6_3_10_b				
UUS/UUS3/ISS_V_6_3_11				
UUS/UUS3/ISS_I_6_3_12				
UUS/UUS3/ISS_I_6_3_13				
UUS/UUS3/ISS_V_6_3_14				
UUS/UUS3/ISS_V_6_3_15				
UUS/UUS3/ISS_V_6_3_16				
UUS/UUS3/ISS_V_6_3_17				
UUS/NO_UUS3/ISS_I_6_3_5_a				
UUS/NO_UUS3/ISS_I_6_3_5_b				
UUS/NO_UUS3/ISS_I_6_3_6_a				
UUS/NO_UUS3/ISS_I_6_3_6_b				
UUS/NO_UUS3/ISS_I_6_3_9_a				
UUS/NO_UUS3/ISS_I_6_3_9_b				

Table C.7: Test campaign report - CUG

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
CUG/ISS_V_7_1				
CUG/ISS_V_7_2				
CUG/ISS_V_7_3				
CUG/ISS_V_7_6				
CUG/ISS_V_7_7				
CUG/ISS_V_7_8				
CUG/ISS_V_7_9				
CUG/ISS_V_7_10				
CUG/ISS_V_7_11				
CUG/ISS_V_7_12				
CUG/ISS_V_7_13				
CUG/ISS_V_7_14				
CUG/ISS_V_7_15				
CUG/ISS_V_7_16				
CUG/ISS_V_7_17				
CUG/ISS_V_7_18				
CUG/ISS_V_7_19				
CUG/ISS_V_7_20				
CUG/ISS_V_7_21				
CUG/ISS_I_7_22				
CUG/ISS_I_7_23				
NO_CUG/ISS_I_7_4				
NO_CUG/ISS_I_7_5				

Table C.8: Test campaign report - SUB

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
SUB/ISS_V_8_1				
SUB/ISS_V_8_2				
SUB/ISS_V_8_3				
SUB/ISS_I_8_4				
SUB/ISS_V_8_5				

Table C.9: Test campaign report - MCID

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
MCID/ISS_V_9_1				
MCID/ISS_V_9_2				
MCID/ISS_V_9_3				
MCID/ISS_V_9_5_a				
MCID/ISS_V_9_5_b				
MCID/ISS_V_9_6_a				
MCID/ISS_V_9_6_b				
MCID/ISS_V_9_8				
MCID/ISS_I_9_9				
MCID/ISS_V_9_10_a				
MCID/ISS_V_9_10_b				
MCID/ISS_V_9_11				
MCID/ISS_I_9_12_a				
MCID/ISS_I_9_12_b				
MCID/ISS_I_9_13				
MCID/ISS_V_9_14				
MCID/ISS_V_9_15_a				

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
MCID/ISS_V_9_15_b				
MCID/ISS_V_9_16				
NO_MCID/ISS_I_9_4				
NO_MCID/ISS_I_9_7				

Table C.10: Test campaign report - CONF

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
CONF/ISS_V_10_1				
CONF/ISS_V_10_2				
CONF/ISS_V_10_3_a				
CONF/ISS_V_10_3_b				
CONF/ISS_V_10_4				
CONF/ISS_V_10_5				
CONF/ISS_V_10_6				
CONF/ISS_V_10_7				
CONF/ISS_V_10_8				
CONF/ISS_V_10_9				
CONF/ISS_V_10_10				
CONF/ISS_I_10_11				
CONF/ISS_I_10_12				
CONF/ISS_V_10_13_a				
CONF/ISS_V_10_13_b				
CONF/ISS_V_10_14				
CONF/ISS_V_10_15				
CONF/ISS_V_10_16				

Table C.11: Test campaign report - ECT

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
ECT/ISS_V_11_1_a				
ECT/ISS_V_11_1_b				
ECT/ISS_V_11_2_a				
ECT/ISS_V_11_2_b				
ECT/ISS_V_11_3_a				
ECT/ISS_V_11_3_b				
ECT/ISS_V_11_4_a				
ECT/ISS_V_11_4_b				
ECT/ISS_V_11_5				
ECT/ISS_V_11_6				
ECT/ISS_I_11_7				
ECT/ISS_I_11_8				
ECT/ISS_V_11_9				
ECT/ISS_V_11_10				
ECT/ISS_V_11_11				
ECT/ISS_V_11_12				
ECT/ISS_V_11_13				
ECT/ISS_V_11_14_a				
ECT/ISS_V_11_14_b				
ECT/ISS_V_11_15				
ECT/ISS_V_11_16				
ECT/ISS_V_11_17				
ECT/ISS_V_11_18				
ECT/ISS_V_11_19				
ECT/ISS_V_11_20_a				

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
ECT/ISS_V_11_20_b				
ECT/ISS_V_11_21_a				
ECT/ISS_V_11_21_b				
ECT/ISS_V_11_22_a				
ECT/ISS_V_11_22_b				
ECT/ISS_V_11_23_a				
ECT/ISS_V_11_23_b				
ECT/ISS_V_11_24				
ECT/ISS_V_11_25				
ECT/ISS_V_11_26_a				
ECT/ISS_V_11_26_b				
ECT/ISS_V_11_27_a				
ECT/ISS_V_11_27_b				
ECT/ISS_V_11_28				
ECT/ISS_V_11_29				
ECT/ISS_V_11_30				

Table C.12: Test campaign report - CDIV

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
CDIV/ISS_V_12_1_a				
CDIV/ISS_V_12_1_b				
CDIV/ISS_V_12_1_c				
CDIV/ISS_V_12_2_a				
CDIV/ISS_V_12_2_b				
CDIV/ISS_V_12_2_c				
CDIV/ISS_V_12_2_d				
CDIV/ISS_V_12_3				
CDIV/ISS_V_12_4_a				
CDIV/ISS_V_12_4_b				
CDIV/ISS_V_12_4_c				
CDIV/ISS_V_12_5				
CDIV/ISS_I_12_6				
CDIV/ISS_I_12_7				
CDIV/ISS_I_12_8				
CDIV/ISS_V_12_9_a				
CDIV/ISS_V_12_9_b				
CDIV/ISS_V_12_10				
CDIV/ISS_I_12_11_a				
CDIV/ISS_I_12_11_b				
CDIV/ISS_I_12_11_c				
CDIV/ISS_V_12_12_a				
CDIV/ISS_V_12_12_b				
CDIV/ISS_V_12_12_c				
CDIV/ISS_V_12_13_a				
CDIV/ISS_V_12_13_b				
CDIV/ISS_V_12_14_a				
CDIV/ISS_V_12_14_b				
CDIV/ISS_V_12_15_a				
CDIV/ISS_V_12_15_b				
CDIV/ISS_V_12_15_c				
CDIV/ISS_V_12_16_a				
CDIV/ISS_V_12_16_b				
CDIV/ISS_V_12_17				
CDIV/ISS_V_12_18				
CDIV/ISS_V_12_19				
CDIV/ISS_V_12_20				
CDIV/ISS_V_12_21				

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
CDIV/ISS_V_12_22				
CDIV/ISS_V_12_23				
CDIV/ISS_V_12_24				
CDIV/ISS_V_12_25				
CDIV/ISS_V_12_26_a				
CDIV/ISS_V_12_26_b				
CDIV/ISS_V_12_26_c				
CDIV/ISS_V_12_27				
CDIV/ISS_V_12_28_a				
CDIV/ISS_V_12_28_b				
CDIV/ISS_V_12_29				
CDIV/ISS_V_12_30				
CDIV/ISS_V_12_31				
CDIV/ISS_V_12_32				
CDIV/ISS_V_12_33				
CDIV/ISS_V_12_34				
CDIV/ISS_V_12_35				
CDIV/ISS_V_12_36				
CDIV/ISS_V_12_37				
CDIV/ISS_V_12_38				
CDIV/ISS_V_12_39				
CDIV/ISS_V_12_40_a				
CDIV/ISS_V_12_40_b				
CDIV/ISS_V_12_40_c				
CDIV/ISS_V_12_40_d				
CDIV/ISS_V_12_40_e				
CDIV/ISS_V_12_41_a				
CDIV/ISS_V_12_41_b				
CDIV/ISS_V_12_42				
CDIV/ISS_V_12_43_a				
CDIV/ISS_V_12_43_b				
CDIV/ISS_V_12_44				
CDIV/ISS_V_12_45				
CDIV/ISS_V_12_46				
CDIV/ISS_V_12_47				
CDIV/ISS_V_12_48				
CDIV/ISS_V_12_49_a				
CDIV/ISS_V_12_49_b				
CDIV/ISS_V_12_49_c				

Table C.13: Test campaign report - HOLD

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
HOLD/ISS_V_13_1				
HOLD/ISS_V_13_2				
HOLD/ISS_V_13_3				
HOLD/ISS_V_13_4				
HOLD/ISS_V_13_5				
HOLD/ISS_V_13_6_a				
HOLD/ISS_V_13_6_b				
HOLD/ISS_V_13_7_a				
HOLD/ISS_V_13_7_b				
HOLD/ISS_V_13_8				
HOLD/ISS_V_13_9				
HOLD/ISS_V_13_10				
HOLD/ISS_V_13_11				
HOLD/ISS_V_13_12				

Table C.14: Test campaign report - CW

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
CW/ISS_V_14_1				
CW/ISS_V_14_2				
CW/ISS_V_14_3				
CW/ISS_V_14_4				
CW/ISS_V_14_5				
CW/ISS_V_14_6				
CW/ISS_V_14_7				
CW/ISS_V_14_8				

Table C.15-1: Test campaign report - CCBS - ISUP part

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
CCBS/ISUP/ISS_V_15_1				
CCBS/ISUP/ISS_V_15_2				
CCBS/ISUP/ISS_V_15_3				
CCBS/ISUP/ISS_V_15_4				
CCBS/ISUP/ISS_V_15_5				
CCBS/ISUP/ISS_V_15_6				
CCBS/ISUP/ISS_V_15_7				
CCBS/ISUP/ISS_V_15_8				
CCBS/ISUP/ISS_V_15_9				
CCBS/ISUP/ISS_V_15_10				
CCBS/ISUP/ISS_V_15_11				
CCBS/ISUP/ISS_V_15_12				
CCBS/ISUP/ISS_V_15_13				
CCBS/ISUP/ISS_V_15_14				
CCBS/ISUP/ISS_V_15_15				

Table C.15-2: Test campaign report - CCBS - ASE part

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
CCBS/ASE/ISS_TC_V_15_1				
CCBS/ASE/ISS_TC_I_15_2				
CCBS/ASE/ISS_TC_V_15_3				
CCBS/ASE/ISS_TC_V_15_4				
CCBS/ASE/ISS_TC_I_15_5				
CCBS/ASE/ISS_TC_V_15_6_a				
CCBS/ASE/ISS_TC_V_15_6_b				
CCBS/ASE/ISS_TC_V_15_7				
CCBS/ASE/ISS_TC_I_15_8				
CCBS/ASE/ISS_TC_V_15_9				
CCBS/ASE/ISS_TC_V_15_10				
CCBS/ASE/ISS_TC_V_15_11				
CCBS/ASE/ISS_TC_V_15_12				
CCBS/ASE/ISS_TC_I_15_13				
CCBS/ASE/ISS_TC_I_15_14				
CCBS/ASE/ISS_TC_I_15_15				
CCBS/ASE/ISS_TC_I_15_16				
CCBS/ASE/ISS_TC_I_15_17				
CCBS/ASE/ISS_TC_I_15_18				
CCBS/ASE/ISS_TC_I_15_19				
CCBS/ASE/ISS_TC_I_15_20				
CCBS/ASE/ISS_TC_I_15_21				

Table C.16: Test campaign report - 3PTY

ATS Reference	Selected [Y/N]	Run [Y/N]	Verdict [P/F/I]	Observations (Reference to any observations made in clause C.7)
THREE_PTY/ISS_V_16_1				
THREE_PTY/ISS_V_16_2_a				
THREE_PTY/ISS_V_16_2_b				
THREE_PTY/ISS_V_16_3_a				
THREE_PTY/ISS_V_16_3_b				
THREE_PTY/ISS_V_16_4_a				
THREE_PTY/ISS_V_16_4_b				
THREE_PTY/ISS_V_16_5_a				
THREE_PTY/ISS_V_16_5_b				
THREE_PTY/ISS_V_16_6_a				
THREE_PTY/ISS_V_16_6_b				
THREE_PTY/ISS_V_16_7				
THREE_PTY/ISS_V_16_8				
THREE_PTY/ISS_V_16_9				

C.7   Observations

Additional information relevant to the technical content of the PCTR is given here.

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Annex D (normative):
ATS ISDN User Part (ISUP) '97 Supplementary Services

(This annex forms an integral part of the present document.)

D.1   ATS code

The ATS is written in TTCN according to ISO/IEC 9646-3 [26].

Because the ATS was developed on a TTCN tool, the TTCN tables are not completely referenced in the table of contents of the present document. The ATS itself contains a clause test suite overview, which provides additional information about the ATS. The ATS is not included in this annex; it is available on electronic media.

The ATS is available from ITU-T both in graphical form (TTCN GR format) in a postscript file ("RSL.PS") and in machine processable form (TTCN MP format) in an ASCII text file ("RSL.MP"). All files are compressed files accompanied by a "README" text file.

D.2   Conventions used within the ATS

The abbreviations are consistently used within the ATS written in TTCN and are useful for understanding and/or maintaining the coding detail level.

D.2.1   Test suite parameters, constants and variables

Most test suite parameters are named using the pattern: TSP_Xxx.

Most test suite variables are named using the pattern: TSV_XXX.

All test suite constants are named using the pattern: TSC_Xxx.

D.2.2   Test case variables

Most test case variables are named using the pattern: TCV_Xxx.

D.2.3   ASP constraints

The naming scheme for asp constraints is: PDU_XY_more_specific.

- where PDU indicates the PDU type included, XY indicates the direction and more_specific (if any) describes the constraint with abbreviated naming convention.

    EXAMPLE: IAM_BA_CgPN - indicates an IAM sent from SP B to SP A, with a calling party number included.

D.2.4   Timers

All timers are named using the pattern:

- Tname[_min or _max];

- T7_min (waiting for ACM timer);

- TCFNR_max (call forwarding on no reply timer).

D.2.5   Test suite operations

Most names for test suite operations follow the scheme: TSO_TestSuiteOperationName.

The TSO functions are specified using the syntax of C programming language or pseudo code.

D.2.6   Aliases

Aliases are extensively used instead of cumbersome names for ASP primitives (like MTP TRANSFER_IND).

They are named using the scheme:

S_XXX   For the sending of an ISUP message XXX which resolves to the MTP TRANSFER_REQ primitive;

R_XXX   For the receipt of an ISUP message XXX which is resolved to the MTP TRANSFER_IND primitive.

D.2.7   Test case and step identifiers

The General Naming Convention For The Test Cases Is: ISS{_TC}_X_N_N{_N}{_A}.

Where:

TC   designates as specific test cases (optional, used only for ccbs);

X   is either **V** - valid stimulus or **I** - inopportune stimulus;

N   is the sequence number of the supplementary service;

1st **N**   is a sequence number used within the supplementary service;

2nd **N**   is an additional used number (optional, for UUS only); and

A   is a lowercase letter to distinguish between tests in case of variants deriving from the same Test Purpose.

The general naming convention for the dispatcher test steps is: SS_N_N_{A}:

• where the n-s are the same as the test case to which they relate.

Some generic steps with appropriate names, e.g. to complete the call setup (+S_ACM_ETC_BA, +R_ACM_ETC_AC) are also used.

D.2.8   Constraints

The constraints visible on the test case level are all ASP constraints. The ASPs are chained to PDU constraints every time an ISUP message is involved. This allows for a higher level of abstraction on the test case level and hides the information in the ASP constraint part. In order to reduce the number of constraints, a technique where a default constraint is manipulated/modified on the send line is used. This also has the advantage of increasing readability. In the case of access ASPs, no further PDU constraints are defined.

D.2.9   Dynamic behaviour part

The general scheme of running a test case can be described shortly as follows:

Firstly, the control is given to the main test component, which starts executing. This main test component controls and observes the IUT on the AB signalling link.

Secondly after possibly initializing some data the main test component creates the corresponding parallel test component. This component is the slave process and it is located in a separate test step. It is dispatched using a parameter derived from the role of the exchange to be tested. For each test case the concurrent "slave" parallel test component(s), either ISUP, or access, or both is(are) created. For example if the test configuration requires only an ISUP tester on the left side, then the ISUP parallel test component is created, a.s.o.

The main (right) and the parallel (left) test components will then cooperate, most of the time asynchronously driven by the received messages, until the Test Purpose is achieved and the verdict is set.

The behaviour description is kept on an abstract level, hiding whenever it is possible programming details in the underlying test steps. Test steps are used whenever this saves code without decreasing the readability of the test case. Often functionally related test steps are grouped together using local trees.

The comment fields are extensively used. The message sequence chart for the chosen testing configuration is provided at test case level to quickly give an overview of the expected behaviour.

D.2.10 Pre-test conditions

For each test it is assumed that the circuits are unblocked from both sides and idle. If a particular test case needs special pre-test conditions, these are presented in description part of that test case.

Annex E (normative):
ATS for ISDN User PArt (ISUP) v3 basic call control procedures

This ATS has been produced using the Tree and Tabular Combined Notation (TTCN) according to ISO/IEC 9646-3 [26].

The ATS was developed on a separate TTCN software tool and therefore the TTCN tables are not completely referenced in the table of contents. The ATS itself contains a test suite overview part which provides additional information and references.

E.1 The TTCN Graphical form (TTCN.GR)

The TTCN.GR representation of this ATS is contained in an Adobe Portable Document Format™ file (sps1037_6.PDF contained in archive en_30035636v030202v0.ZIP) which accompanies the present document.

E.2 The TTCN Machine Processable form (TTCN.MP)

The TTCN.MP representation corresponding to this ATS is contained in an ASCII file (sps1037_6.MP contained in archive en_30035636v030202v0.ZIP) which accompanies the present document.

NOTE: Where an ETSI Abstract Test Suite (in TTCN) is published in both .GR and .MP format these two forms shall be considered equivalent. In the event that there appears to be syntactical or semantic differences between the two then the problem shall be resolved and the erroneous format (whichever it is) shall be corrected.

Annex F (informative):
Bibliography

- ITU-T Recommendation Q.731.1 (1997): "Direct-dialling-In (DDI)".

- ITU-T Recommendation Q.733.1 (1992): "Call waiting (CW)".

- ITU-T Recommendation Q.735.3 (1993): "Multi-level precedence and preemption".

- ITU-T Recommendation Q.735.6 (1993): "Global Virtual Network Service (GVNS)".

- ITU-T Recommendation Q.850 (1998): "Usage of cause and location in the Digital Subscriber Signalling System No. 1 and the Signalling System No. 7 ISDN User Part".

- ITU-T Recommendation Q.767 (1991): "Application of the ISDN user part of CCITT signalling system No. 7 for international ISDN interconnections".

- ITU-T Recommendation Q.784.1 (1996): "Validation and compatibility for ISUP'92 and ITU-T Recommendation Q.767 protocols".

History

Document history		
Edition 1	March 1998	Publication as ETS 300 356-36
V3.1.2	February 2000	Public Enquiry PE 200025: 2000-02-23 to 2000-06-23
V3.2.2	July 2001	Vote V 20010921: 2001-07-23 to 2001-09-21