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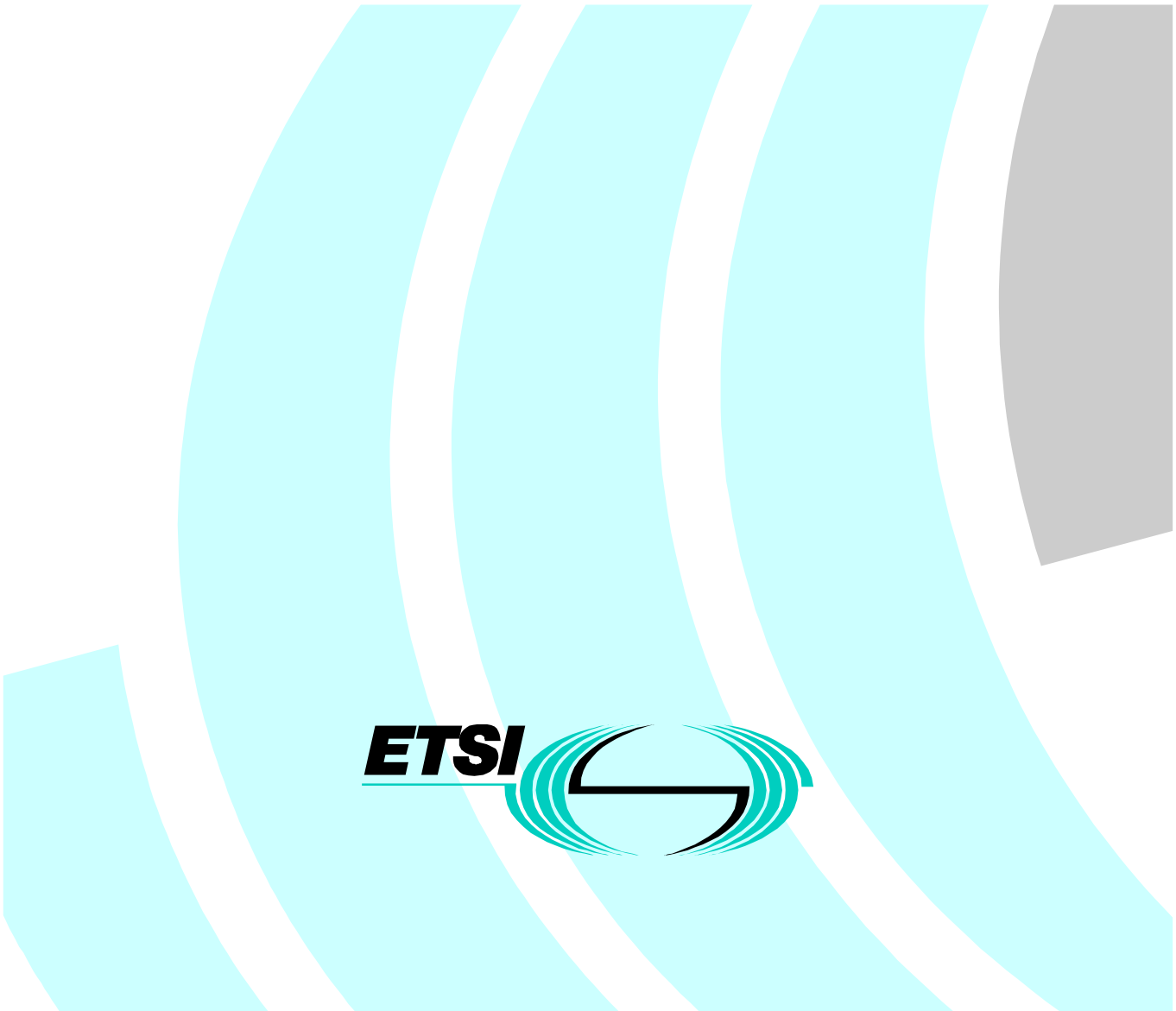
European Standard (Telecommunications series)

Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 3 interactions with the Intelligent Network Application Part (INAP); Part 3: Test Suite Structure and Test Purposes (TSS&TP) specification



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Foreword

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

The present document is part 3 of a multi-part EN covering the interactions between ISDN User Part (ISUP) version 3 and Intelligent Network Application Part (INAP) in the scope of IN Capability Set 1 (CS1), as identified below:

Part 1: "Protocol specification [ITU-T Recommendation Q.1600 (1997), modified]";

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

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

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

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1 Scope

The present document contains the validation (conformance) test specification for the interaction between ISUP v3 and INAP CS1 defined in [1]. The present document applies only to exchanges having implemented the ISUP v3 protocol specification in the call control function (CCF) and the INAP CS1 in the service switching function (SSF) of the exchange. It is applicable for validation testing of all types of exchanges as defined in the ISUP v3 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 the interaction between ISUP v3 and INAP CS1.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1] ETSI EN 301 070-1 (V1.2): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 3 interactions with the Intelligent Network Application Part (INAP); Part 1: Protocol specification [ITU-T Recommendation Q.1600 (1997), modified]".

[2] ETSI EN 300 356-1: "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 4 for the international interface; Part 1: Basic services [ITU-T Recommendations Q.761 to Q.764 modified]".

[3] ISO/IEC 9646-1 (1997): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General Concepts".

[4] ISO/IEC 9646-3 (1992): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".

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

[6] ITU-T Recommendation Q.1214 (1995): "Distributed functional plane for intelligent network CS-1".

[7] ITU-T Recommendation Q.1218 (1995): "Interface Recommendation for intelligent network CS-1".

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

[9] ITU-T Recommendation Q.701 (1993): "Functional description of the message transfer part (MTP) of Signalling System No. 7".

[10] ITU-T Recommendation Q.702 (1988): "Signalling data link".

[11] ITU-T Recommendation Q.703 (1996): "Signalling link".

[12] ITU-T Recommendation Q.704 (1996): "Signalling network functions and messages".

[13] ITU-T Recommendation Q.705 (1993): "Signalling network structure".

[14] ITU-T Recommendation Q.706 (1993): "Message transfer part signalling performance".

[15] ITU-T Recommendation Q.707 (1988): "Testing and maintenance".

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 specifications [1] and [2];
- terms defined in ISO/IEC 9646-1 [3], ISO/IEC 9646-3 [4] and in ISO/IEC 9646-7 [5].

In particular, the following terms and definitions 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 9646-1 [3], subclause 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 9646-1 [3], subclause 3.3.5).

Abstract Test Suite (ATS): test suite composed of abstract test cases (see ISO/IEC 9646-1 [3], subclause 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 9646-1 [3], subclause 3.3.43).

ISDN number: number conforming to the numbering and structure specified in ITU-T Recommendation E.164 [8].

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 9646-1 [3], subclause 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 (PCO): 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 9646-1 [3], subclause 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 9646-1 [3], subclauses 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 9646-1 [3], subclauses 3.3.41 and 3.3.81).

System Under Test (SUT): real open system in which the IUT resides (see ISO/IEC 9646-1 [3], subclause 3.3.103).

3.2 Abbreviations

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

ACON	Abnormal CONditions
AM_ISSP	Assist Method - procedure in the Initiating SSP
ASP	Abstract Service Primitive
A-SSP	Assisting Signalling Switching Point
ATM	Abstract Test Method
ATS	Abstract Test Suite
CCF	Call Control Function
CD	Call Deflection
CG	Call Gapping
CON	CONnect operation
CS1	IN Capability Set No 1
DPP	Detection Point Processing
HOM_ASSP	Hand-Off Method – procedure in the Assisting SSP
HOM_ISSP	Hand-Off Method – procedure in the Initiating SSP
ICS	Implementation Conformance Statement
IDP	Initial Detection Point operation
INAP	Intelligent Network Application Protocol
INB	Setup of an IN call to destination B
INBC	INAP Basic Call
INCD	IN call with SCP request to Collect further Digits
IPC	SSP supports requested IP Capabilities
ISDN	Integrated Services Digital Network
ISS	Impact on Supplementary Services
I-SSP	Initiating Signalling Switching Point
ISUP	ISDN User Part
IUT	Implementation Under Test
MCID	Malicious Call Identification
MOT	Means Of Testing
MTP	Message Transfer Part
OIN	Other IN basic call related issues
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
SCP_IC	SCP Initiated Call
SCS	Successful Call Setup
SF	Service Filtering
SP	Signalling Point
SSF	Service Switching Function
SUT	System Under Test
TP	Test Purpose (context dependent)
TSS & TP	Test Suite Structure and Test Purposes
TSS	Test Suite Structure
TTCN	Tree and Tabular Combined Notation
UID	User Interactive Dialogue (in-band)
V	Valid behaviour stimulus

The ISUP message acronyms can be found in table 2 of ITU-T Recommendation Q.762 as endorsed by [2].
The following abbreviations apply for ISUP parameters and parameter values:

AdSg	Address Signals
CgPN	Calling Party Number
GenNot	Generic Notification
TMR	Transmission Medium Requirement
USI	User Service Indicator

4 Implementation under test and test methods

4.1 Identification of the system and implementation under test

The system under test (SUT) is an exchange. The implementation under test (IUT) is the ISUP v3 implementation in this exchange, mainly the part responsible for the interaction between ISUP v3 and INAP CS1 which takes place in the CCF and SSF, as shown in figure 1.

The following main subjects have to be considered in this area:

a) detection point processing in the CCF;

b) receipt of INAP CS1 operations in the SSF.

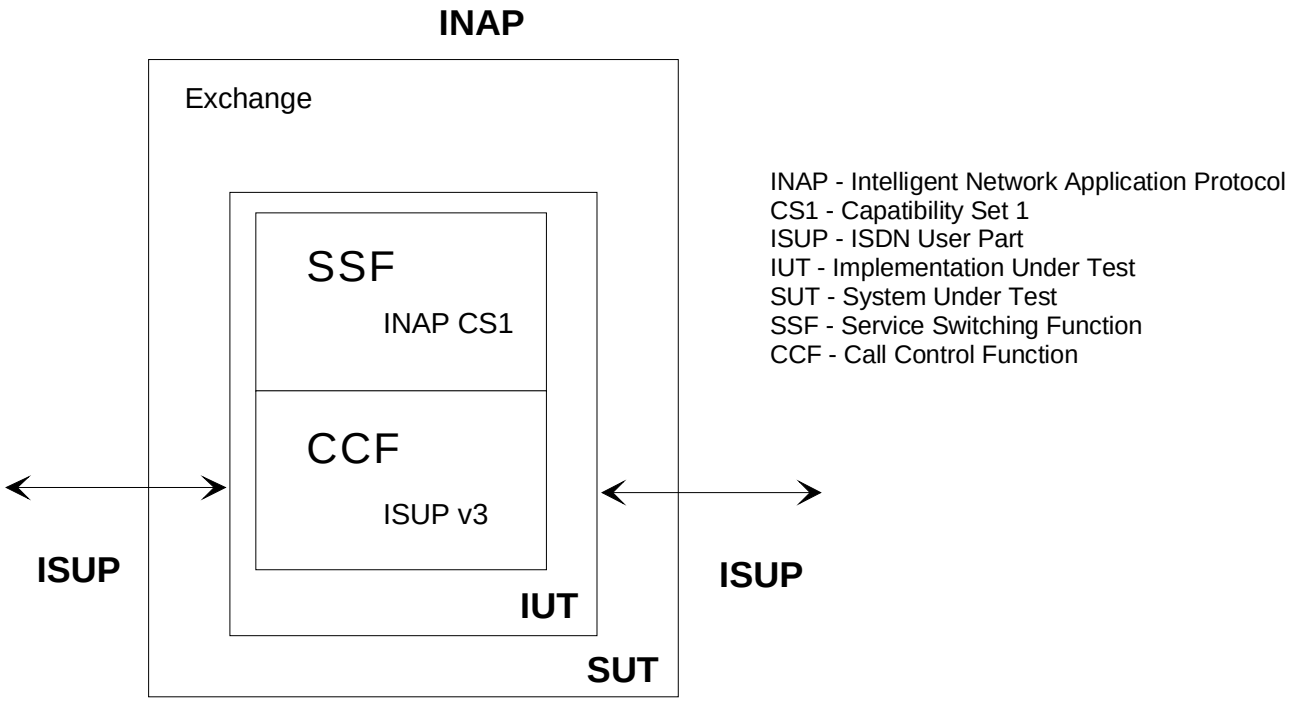


Figure 1: System under test

The ISUP signalling protocol and the INAP can be observed on the SS No.7 link on the network nodal interface (NNI). On the signalling links pointing to the Call Control Function (CCF) the ISDN User Part procedures can be observed. The signalling link emerging form the SSF the INAP procedures can be observed.

4.2 ATM and testing configuration for ISUP v3

The Abstract Test Method (ATM) chosen for the Interaction between ISUP v3 and INAP 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 ATS is written in concurrent TTCN.

4.3 IN exchange

The configuration proposed for testing exchanges having an SSF (IN exchanges) is shown in figure 2/Q.ISIN_TEST. In order to test the protocol and functionality of these exchanges one needs to consider the incoming and outgoing ISUP circuits and the signalling link to the SCP.

The IUT is observed and controlled from two ISUP links with associated circuits. The points of control and observation (PCO) are labelled LAC and CAC on one side, and LAD and CAD on the other.

The naming convention for the signalling link PCO is 'L' followed by two letters indicating the interface. Similarly for the circuit PCO, the name is 'C' followed by the same two letters designating the interface.

The LAB PCO is used by the lower tester (LT) to control and observe the INAP on the signalling to the SCP.

The LAC and LAD PCOs are used by the lower testers (LT) for controlling the ISUP signalling link, whereas the CAC and CAD PCOs are used by the lower testers for observing circuit related events, such as connectivity, DTMF tones, announcements, etc.

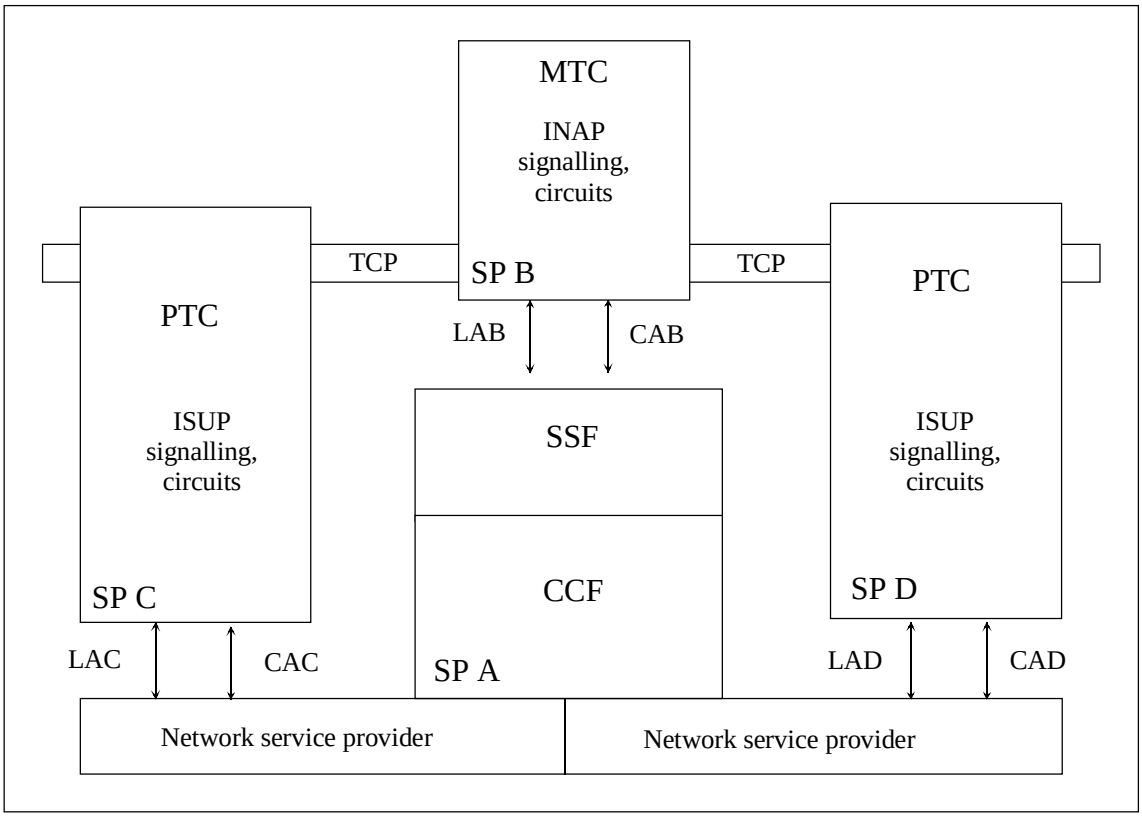
The ISUP PDUs to be sent and observed on the LAC and LAD PCOs side allow for PDU constraints to be specified and coded down to the bit-level. The same applies for the INAP PDUs on the LAB PCO.

The underlying network service provider is the Message Transfer Part (MTP) protocol as specified in ITU-T Recommendations Q.701 [9] to Q.707 [15].

Figure 2/Q.ISIN_TEST shows the actual used configuration for IN exchanges, with a main testing component (MTC), responsible for the AB interface and two slave parallel testing components (PTCs), responsible for the AC and AD interfaces.

The test co-ordination procedures (TCP) allow for communication between the testers. The test components are mostly implicitly co-ordinated (asynchronously); the TCPs are only used when it is necessary to obtain the verdict from the parallel test component.

The left and right side parallel test components may be of any kind: they may be international or national ISUP.



IUT - Implementation Under Test
MTC - Main Test Component
PCO - Point of Control and Observation
PTC - Parallel Test Component
SP - Signalling Point
SSF - Service Switching Function
CCF - Call Control Function
LAB - PCO for signalling link AB
CAB - Circuit PCO on AB interface
LAC - PCO for signalling link AC
CAC - Circuit PCO on AC interface
LAD - PCO for signalling link AD
CAD - Circuit PCO on AD interface
TCP - Test Coordination Procedures

Figure 2: ISUP mixed test configuration for local exchanges

5 Test Suite Structure (TSS)

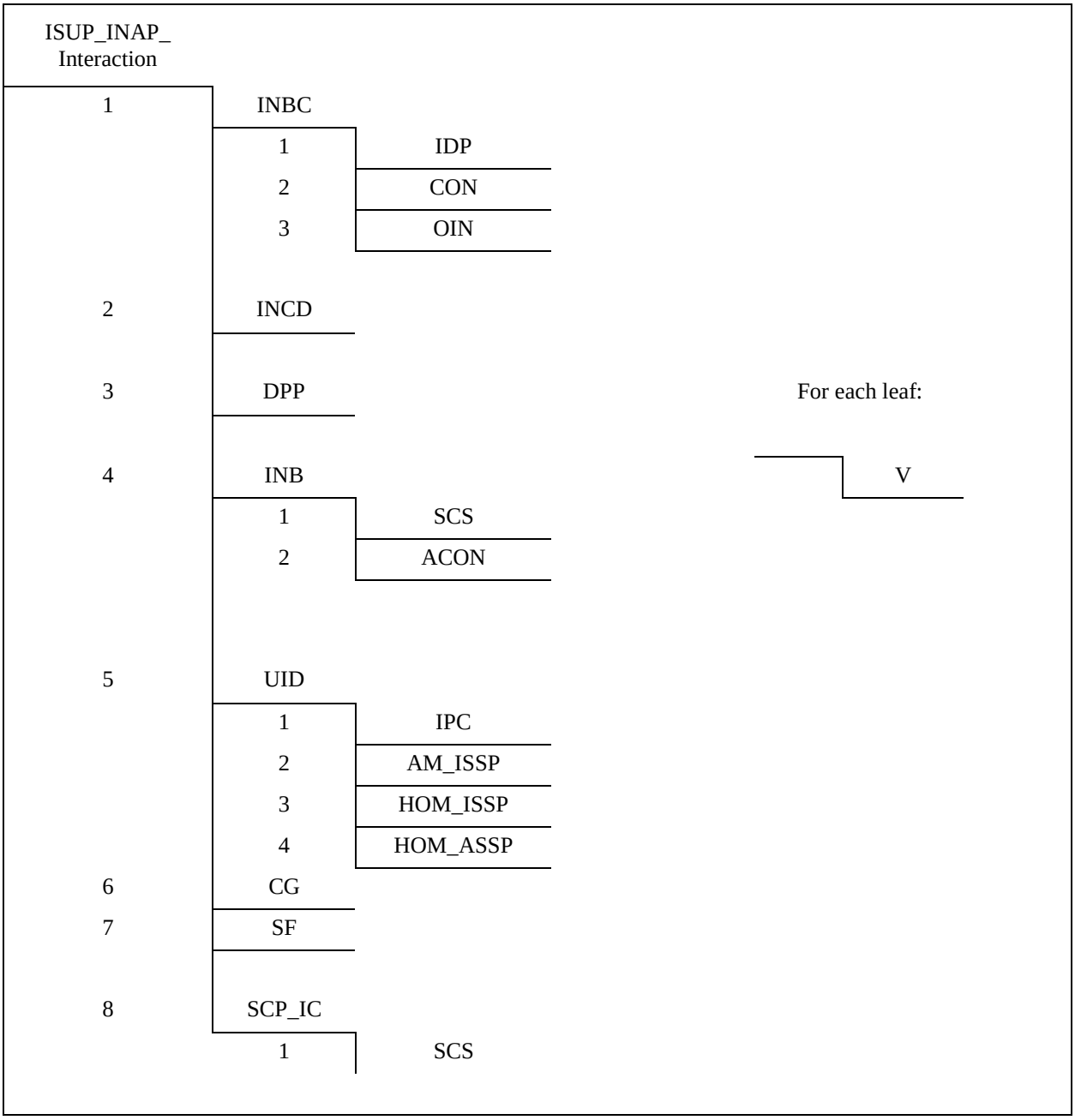


Figure 3: Test suite structure

Test Suite Structure (TSS) naming conventions are:

INBC	**INAP B**asic **C**all
IDP	**I**nitial **D**etection **P**oint operation
CON	**CON**nect operation
OIN	**O**ther **IN** basic call related issues
INCD	**IN** call with SCP request to **C**ollect further **D**igits
DPP	**D**etection **P**oint **P**rocessing
INB	Setup of an **IN** call to destination **B**

SCS	**S**uccessful **C**all **S**etup
ACON	**A**bnormal **CON**ditions
ISS	**I**mpact on **S**upplementary **S**ervices
UID	**U**ser **I**nteractive **D**ialogue (in-band)
IPC	SSP supports requested **IP C**apabilities
AM_ISSP	**A**ssist **M**ethod - procedure in the **I**nitiating **SSP**
HOM_ISSP	**H**and-**O**ff **M**ethod – procedure in the **I**nitiating **SSP**
HOM_ASSP	**H**and-**O**ff **M**ethod – procedure in the **A**ssisting **SSP**
CG	**C**all **G**apping
SF	**S**ervice **F**iltering
SCP_IC	**SCP I**nitiated **C**all
V	Valid behaviour stimulus

6 Test purposes (TP)

6.1 Introduction

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

6.2 Test purpose (TP) naming convention

Test Purposes are numbered ascending within each group. Groups are organized according to the Test Suite Structure (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 1).

Table 1: TP Identifier naming convention scheme

Identifier:	**ISN_<group>_<N>_<n>_{<n>}_{<a>}**	
ISN	**=**	**ISUP INAP Interaction**
<group>	=	One character representing the test group: V: Valid stimulus I: Inopportune stimulus
<N>	=	Sequence number in the test suite structure
<n>	=	Sequence number used within the group
{<n>}	=	Optional additional number used
{<a>}	=	Optional lower-case character distinguishing tests with same reference number

6.2.1 Source of test purpose definition

The test purposes cover validation testing aspects and were developed within ETSI.

6.2.2 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.

6.3 Test purposes for the ISUP - INAP interaction

All of the following test purposes belong to the main group ISUP_INAP_Interaction. 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
Reference ITU-T Recommendation Q.1600	The reference to the requirement in the ISUP INAP interaction standard, 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 (see annex A/Q.isin_test). If there is no selection expression specified, the TP is valid for all roles of exchanges.
Configuration	This is a reference to the test configuration used.

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

The ISUP **messages**, **parameters**, the INAP **operations** and **information elements** 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'.

6.3.1 INAP basic call

6.3.1.1 Initial Detection Point

TSS /INBC/IDP	**TP ISN_V_1_1_1**	**Reference ITU-T Recommendation Q.1600 9.1.1.1 as endorsed by [1]; table 4/Q.1600 as endorsed by [1]**	**Selection expression**	**Configuration 1**
Test purpose *Mapping of the called party number* To verify that the IUT can successfully map the **called party number** from the **IAM** to the **calledPartyNumber** of the **InitialDP** operation. Pre-test conditions: Arm DP3 (Analyzed_Information)				

TSS /INBC/IDP	TP ISN_V_1_1_2	Reference ITU-T Recommendation Q.1600 9.1.1.1 as endorsed by [1]; table 4/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the calling party number* To verify that the IUT can successfully map the **calling party number** from the **IAM** to the **callingPartyNumber** of the **InitialDP** operation. Pre-test conditions: None				

TSS /INBC/IDP	TP ISN_V_1_1_3	Reference ITU-T Recommendation Q.1600 9.1.1.1 as endorsed by [1]; table 4/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the calling party sub-address* To verify that the IUT can successfully map the **calling party number** and the calling party sub-address contained in the **access transport parameter** from the **IAM** to the **callingPartyNumber** and **callingPartySubaddress** of the **InitialDP** operation. Pre-test conditions: None				

TSS /INBC/IDP	TP ISN_V_1_1_4	Reference ITU-T Recommendation Q.1600 9.1.1.1 as endorsed by [1]; table 4/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the additional calling party number in the generic number* To verify that the IUT can successfully map the additional calling party number in the **generic number** from the **IAM** to the **additionalCallingPartyNumber** of the **InitialDP** operation. Pre-test conditions: None				

TSS /INBC/IDP	TP ISN_V_1_1_5	Reference ITU-T Recommendation Q.1600 9.1.1.1 as endorsed by [1]; table 4/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the calling party's category* To verify that the IUT can successfully map the **calling party's category** from the **IAM** to the **callingPartysCategory** of the **InitialDP** operation. Pre-test conditions: None				

TSS /INBC/IDP	TP ISN_V_1_1_6	Reference ITU-T Recommendation Q.1600 9.1.1.1 as endorsed by [1]; table 4/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the forward call indicators* To verify that the IUT can successfully map the **forward call indicators** from the **IAM** to the **forwardCallIndicators** of the **InitialDP** operation. Pre-test conditions: None				

TSS /INBC/IDP	TP ISN_V_1_1_7	Reference ITU-T Recommendation Q.1600 9.1.1.1 as endorsed by [1]; table 4/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the location number* To verify that the IUT can successfully map the **location number** from the **IAM** to the **locationNumber** of the **InitialDP** operation. Pre-test conditions: None				

TSS /INBC/IDP	TP ISN_V_1_1_8	Reference ITU-T Recommendation Q.1600 9.1.1.1 as endorsed by [1]; table 4/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the original called number* To verify that the IUT can successfully map the **original called number** from the **IAM** to the **originalCalledPartyId** of the **InitialDP** operation. Pre-test conditions: None				

TSS /INBC/IDP	TP ISN_V_1_1_9	Reference ITU-T Recommendation Q.1600 9.1.1.1 as endorsed by [1]; table 4/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the redirecting number* To verify that the IUT can successfully map the **redirecting number** from the **IAM** to the **redirectingPartyId** of the **InitialDP** operation. Pre-test conditions: None				

TSS /INBC/IDP	TP ISN_V_1_1_10	Reference ITU-T Recommendation Q.1600 9.1.1.1 as endorsed by [1]; table 4/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the redirection information* To verify that the IUT can successfully map the **redirection information** from the **IAM** to the **redirectionInformation** of the **InitialDP** operation. Pre-test conditions: None				

TSS /INBC/IDP	TP ISN_V_1_1_11	Reference ITU-T Recommendation Q.1600 9.1.1.1 as endorsed by [1]; table 4/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the user teleservice information* To verify that the IUT can successfully map the **user teleservice information** from the **IAM** to the **highLayerCompatibility** of the **InitialDP** operation. The **user teleservice information** contains the first priority high layer compatibility information element. Pre-test conditions: None				

TSS /INBC/IDP	TP ISN_V_1_1_12	Reference ITU-T Recommendation Q.1600 9.1.1.1 as endorsed by [1]; table 4/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the preferred high layer compatibility from the access transport parameter* To verify that the IUT can successfully map the high layer compatibility information elements contained in the **access transport parameter** from the **IAM** to the **highLayerCompatibility** of the **InitialDP** operation. The **user teleservice information** parameter is not contained in the **IAM**. Pre-test conditions: None				

TSS /INBC/IDP	TP ISN_V_1_1_13	Reference ITU-T Recommendation Q.1600 9.1.1.1 as endorsed by [1]; table 4/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the user service information prime* To verify that the IUT can successfully map the **user service information prime** from the **IAM** to the **bearerCapability** of the **InitialDP** operation. This is the first priority bearer capability, the second one being contained in the **user service information** of the **IAM**. Pre-test conditions: None				

TSS /INBC/IDP	TP ISN_V_1_1_14	Reference ITU-T Recommendation Q.1600 9.1.1.1 as endorsed by [1]; table 4/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the user service information* To verify that the IUT can successfully map the **user service information** from the **IAM** to the **bearerCapability** of the **InitialDP** operation. The **user service information prime** parameter is not contained in the **IAM**. Pre-test conditions: None				

6.3.1.2 Connect Operation

TSS /INBC/CON	TP ISN_V_1_2_1	Reference ITU-T Recommendation Q.1600 9.1.1.1.1 as endorsed by [1]; table 5/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the destinationRoutingAddress* To verify that the IUT can successfully map the **destinationRoutingAddress** of the **Connect** operation to the **called party number** of the **IAM**. Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_2	Reference ITU-T Recommendation Q.1600 9.1.1.1.1 as endorsed by [1]; note 2 table 5/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of one destinationRoutingAddress out of three* To verify that the IUT can successfully map one of three **destinationRoutingAddress** information elements of the **Connect** operation to the **called party number** of the **IAM**. Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_3	Reference ITU-T Recommendation Q.1600 9.1.1.1.1 as endorsed by [1]; note 3 table 5/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the destinationRoutingAddress with cutAndPaste* To verify that the IUT can successfully map the **destinationRoutingAddress** with the **cutAndPaste** information element of the **Connect** operation to the **called party number** of the **IAM** conform to subclause 3.3.16 of ITU-T Recommendation Q.1218 [7]. Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_4	Reference ITU-T Recommendation Q.1600 9.1.1.1.1 as endorsed by [1]; note 3 table 5/Q.1600 as endorsed by [1]	Selection expression NOT PICS A.4/7	Configuration 1
Test purpose *Mapping of the destinationRoutingAddress without cutAndPaste* To verify that, if there is no **cutAndPaste** information element in the **Connect** operation, the IUT sends an **ACM** message in the backward direction with the **backward call indicators** coded as follows: called party's status indicator 00 (no indication) called party's category 00 (no indication) end-to-end method indicator 00 (no end-to-end method available) interworking indicator 0 (no interworking encountered) end-to-end information indicator 0 (no end-to-end information available) ISDN User Part indicator 1 (ISDN User Part used all the way) ISDN access indicator 1 (terminating access ISDN) SCCP method indicator 00 (no indication) Pre-test conditions: None				

TSS /INBC/IDP	TP ISN_V_1_2_5	Reference ITU-T Recommendation Q.1600 9.1.1.1.1 as endorsed by [1]; table 5/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the callingPartysCategory* To verify that the IUT can successfully map the **callingPartysCategory** of the **Connect** operation to the **calling party's category** in the outgoing **IAM**. Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_6	Reference ITU-T Recommendation Q.1600 9.1.1.1.3 as endorsed by [1]; table 6/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the serviceInteractionIndicators - Call to be diverted indicator (allowed)* To verify that the IUT does not map the **serviceInteractionIndicators** with the call to be diverted indicator set to 'call diversion allowed' of the **Connect** operation to the **call diversion treatment indicators** parameter of the **IAM**, because the coding in this case is 'no indication'. Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_7	Reference ITU-T Recommendation Q.1600 9.1.1.1.3 as endorsed by [1]; table 6/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the serviceInteractionIndicators - Call to be diverted indicator (not allowed)* To verify that the IUT can successfully map the **serviceInteractionIndicators** with the call to be diverted indicator set to 'call diversion not allowed' of the **Connect** operation to the **call diversion treatment indicators** parameter of the **IAM** with the call to be diverted indicator set to 'call diversion not allowed'. Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_8	Reference ITU-T Recommendation Q.1600 9.1.1.1.3 as endorsed by [1]; table 6/Q.1600 as endorsed by [1]	Selection expression	Configuration 1 (double)
Test purpose *Mapping of the serviceInteractionIndicators - Call to be offered indicator (not allowed)* To verify that the IUT does not map the **serviceInteractionIndicators** with the call to be offered indicator set to 'call offering not allowed (default)' of the **Connect** operation to the **call offering treatment indicators** parameter of the **IAM**, because the coding in this case is 'no indication' Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_9	Reference ITU-T Recommendation Q.1600 9.1.1.1.3 as endorsed by [1]; table 6/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the serviceInteractionIndicators - Call to be offered indicator (allowed)* To verify that the IUT can successfully map the **serviceInteractionIndicators** with the call to be offered indicator set to 'call offering allowed' of the **Connect** operation to the **call offering treatment indicators** parameter of the **IAM** with the call to be offered indicator set to 'call offering allowed'. Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_10	Reference ITU-T Recommendation Q.1600 9.1.1.1.3 as endorsed by [1]; table 6/Q.1600 as endorsed by [1]	Selection expression	Configuration 1 (double)
Test purpose *Mapping of the serviceInteractionIndicators - Conference at DLE acceptance indicator (accept)* To verify that the IUT does not map the **serviceInteractionIndicators** with the Conference at DLE acceptance indicator set to 'accept conference request (default)' of the **Connect** operation to the **conference treatment indicators** parameter of the **IAM**, because the coding in this case is 'no indication' Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_11	Reference ITU-T Recommendation Q.1600 9.1.1.1.3 as endorsed by [1]; table 6/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the serviceInteractionIndicators - Conference at DLE acceptance indicator (reject)* To verify that the IUT can successfully map the **serviceInteractionIndicators** with the Conference at DLE acceptance indicator set to 'reject conference request' of the **Connect** operation to the **conference treatment indicators** parameter of the **IAM** in the forward direction with the conference acceptance indicator set to 'reject conference request'. Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_12	Reference ITU-T Recommendation Q.1600 9.1.1.1.3 as endorsed by [1]; 9.1.1.3 table 6/Q.1600 as endorsed by [1]	Selection expression PICS A.4/7	Configuration 1 (double)
Test purpose *Mapping of the serviceInteractionIndicators - Conference at OLE acceptance indicator (accept)* To verify that the IUT can successfully map the **serviceInteractionIndicators** with the Conference at OLE acceptance indicator set to 'accept conference request (default)' of the **Connect** operation to the **conference treatment indicators** parameter of the **ACM/CON**, , because the coding in this case is 'no indication'. The sending of the **ACM/CON** in the backward direction is postponed until the **ACM** or **CON** is received. Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_13	Reference ITU-T Recommendation Q.1600 9.1.1.1.3 as endorsed by [1]; 9.1.1.3 table 6/Q.1600 as endorsed by [1]	Selection expression NOT PICS A.4/7	Configuration 1 (double)
Test purpose *Mapping of the serviceInteractionIndicators - Conference at OLE acceptance indicator (accept)* To verify that the IUT can successfully map the **serviceInteractionIndicators** with the Conference at OLE acceptance indicator set to 'accept conference request (default)' of the **Connect** operation to the **conference treatment indicators** parameter of the **CPG/ANM** in the backward direction with the conference acceptance indicator set to 'no indication' or 'accept conference request'. An **ACM** has already been sent in the backward direction, so the received **ACM** or **CON** is mapped to **CPG** or **ANM** respectively. To verify that the IUT does not map the **serviceInteractionIndicators** with the Conference at OLE acceptance indicator set to 'accept conference request (default)' of the **Connect** operation to the **conference treatment indicators** parameter of the **CPG/ANM**, because the coding in this case is 'no indication'. An **ACM** has already been sent in the backward direction, so the received **ACM** or **CON** is mapped to **CPG** or **ANM** respectively. Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_14	Reference ITU-T Recommendation Q.1600 9.1.1.1.3 as endorsed by [1]; 9.1.1.3 table 6/Q.1600 as endorsed by [1]	Selection expression Not PICS A.4/7	Configuration 1
Test purpose *Mapping of the serviceInteractionIndicators - Conference at OLE acceptance indicator (reject)* Test purpose To verify that the IUT can successfully map the **serviceInteractionIndicators** with the Conference at OLE acceptance indicator set to 'reject conference request' of the **Connect** operation to the **conference treatment indicators** parameter of the **ACM/CON** in the backward direction with the conference acceptance indicator set to 'reject conference request'. The sending of the **ACM/CON** in the backward direction is postponed until the **ACM** or **CON** is received. Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_15	Reference ITU-T Recommendation Q.1600 9.1.1.1.3 as endorsed by [1]; 9.1.1.3 table 6/Q.1600 as endorsed by [1]	Selection expression NOT PICS A.4/7	Configuration 1
Test purpose *Mapping of the serviceInteractionIndicators - Conference at OLE acceptance indicator (reject)* To verify that the IUT can successfully map the **serviceInteractionIndicators** with the Conference at OLE acceptance indicator set to 'reject conference request' of the **Connect** operation to the **conference treatment indicators** parameter of the **CPG/ANM** in the backward direction with the conference acceptance indicator set to 'reject conference request'. An **ACM** has already been sent in the backward direction, so the received **ACM** or **CON** is mapped to **CPG** or **ANM** respectively. Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_16	Reference ITU-T Recommendation Q.1600 9.1.1.1.1 as endorsed by [1]; table 5/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the originalCalledNumber* To verify that the IUT can successfully map the **originalCalledPartyId** of the **Connect** operation to the **original called number** in the **IAM** message. Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_17	Reference ITU-T Recommendation Q.1600 9.1.1.1.1 as endorsed by [1]; table 5/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the redirectingPartyID* To verify that the IUT can successfully map the **redirectingPartyId** of the **Connect** operation to the **redirecting number** in the **IAM** message. Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_18	Reference ITU-T Recommendation Q.1600 9.1.1.1.1 as endorsed by [1]; table 5/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the redirectionInformation* To verify that the IUT can successfully map the **redirectionInformation** of the **Connect** operation to the **redirection information** in the **IAM** message. Pre-test conditions: None				

TSS /INBC/CON	TP ISN_V_1_2_19	Reference ITU-T Recommendation Q.1600 9.1.1.1.1 as endorsed by [1]; note 5 table 5/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *No mapping of the isdnAccessRelatedInformation* To verify that the IUT does not map the **isdnAccessRelatedInformation** of the **Connect** operation, so that the received information in the **access transport parameter** of the **IAM** (called party sub-address, low layer compatibility and high layer compatibility) is passed on unchanged in the forward direction in the outgoing **IAM** message. Pre-test conditions: None				

6.3.1.3 Other INAP basic call related issues

TSS /INBC/OIN	TP ISN_V_1_3_1	Reference ITU-T Recommendation Q.1600 9.1.1.6 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Continuity check* To verify that the IUT does not start INAP operations until the **COT** message indicating a successful continuity check is received. The **IAM** contains the indication 'continuity check performed on a previous circuit' in the **nature of connection indicators**. Pre-test conditions: None				

TSS /INBC/OIN	TP ISN_V_1_3_2	Reference ITU-T Recommendation Q.1600 9.1.1.7 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Segmentation* To verify that the IUT does not start INAP operations until the **SGM** is received. The **IAM** contains a simple segmentation indicator set to 'additional information will be sent in a segmentation message' in the **optional forward call indicators**. Pre-test conditions: None				

TSS /INBC/OIN	TP ISN_V_1_3_3	Reference ITU-T Recommendation Q.1600 9.1.4 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *ReleaseCall operation with releaseCallArg* To verify that the IUT releases the call in both directions upon receipt of a ReleaseCall operation from the SCP with the cause value in the **cause indicators** set to the received releaseCallArg value. Pre-test conditions: None				

TSS /INBC/OIN	TP ISN_V_1_3_4	Reference ITU-T Recommendation Q.1600 9.1.4 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *ReleaseCall operation without releaseCallArg* To verify that the IUT releases the call in both directions upon receipt of a ReleaseCall operation without releaseCallArg from the SCP with the cause value in the **cause indicators** set to '#31 - normal unspecified'. Pre-test conditions: None				

TSS /INBC/OIN	TP ISN_V_1_3_5	Reference ITU-T Recommendation Q.1600 9.1.5 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Transfer of called IN number* To verify that the IUT sends the **called party number** from the received **IAM** in the **called IN number** of the outgoing **IAM**. The address presentation restricted indicator of the **called IN number** will be set according to the called IN number presentation restricted indicator in the **serviceInteractionIndicators** of the received **Connect** operation. Pre-test conditions: None				

TSS /INBC/OIN	TP ISN_V_1_3_6	Reference ITU-T Recommendation Q.1600 9.1.5 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Transfer of called IN number* To verify that the IUT overwrites in the outgoing **IAM** the **called IN number** from the received **IAM** with the **called party number** of the received **IAM.** The address presentation restricted indicator of the **called IN number** will be set according to the called IN number presentation restricted indicator in the **serviceInteractionIndicators** of the received **Connect** operation. Pre-test conditions: None				

6.3.2 IN call with SCP request to collect further digits

TSS /INCD	TP ISN_V_2_1	Reference ITU-T Recommendation Q.1600 9.2 /Q.1600 as endorsed by [1]	Selection expression PICS A1/5	Configuration 1
Test purpose *EventReportBCSM operation* To verify that the IUT can reply to a **RequestReportBCSMEvent** operation to arm DP2 and a **CollectInformation** operation from the SCP with an **EventReportBCSM** operation. The **called IN number** of the outgoing **IAM** shall contain the address signal digits received in the **IAM** and in the **subsequent number** of the **SAM** message. Pre-test conditions: None				

TSS /INCD	TP ISN_V_2_2	Reference ITU-T Recommendation Q.1600 9.2 /Q.1600 as endorsed by [1]	Selection expression PICS A1/6	Configuration 1
Test purpose *CollectedInformation operation* To verify that the IUT can reply to a **RequestReportBCSMEvent** operation to arm DP2 and a **CollectInformation** operation with an **CollectedInformation** operation. The **called IN number** of the outgoing **IAM** shall contain the address signal digits received in the **called party number** of the **IAM** and in the **subsequent number** of the **SAM** message. Pre-test conditions: None				

6.3.3 Detection Point Processing

TSS /DPP	TP ISN_V_3_1	Reference ITU-T Recommendation Q.1600 9.3.1.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Expiry of timer $T_{NoReply}$* To verify that the IUT can inform the SCP of the expiry of the timer $T_{NoReply}$ with a **EventReportBCSM** operation if the SCP has requested within a **RequestReportBCSMEvent** operation the arming of DP6 or DP14 specifying **notifyAndContinue**. Pre-test conditions: None				

TSS /DPP	TP ISN_V_3_2	Reference ITU-T Recommendation Q.1600 9.3.2.2 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Fallback* To verify that the IUT can perform fallback if an **IAM** with a **transmission medium requirement** set to '64 kbit/s unrestricted preferred' is received. Pre-test conditions: None				

TSS /DPP	TP ISN_V_3_3	Reference ITU-T Recommendation Q.1600 9.3.2.3.1.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *User-to-user signalling, service 1implicit* To verify that the IUT discards the **user-to-user information** received in the **IAM** and signals in the **user-to-user indicators** of the **ACM** 'user-to-user information discarded by the network'. The outgoing **IAM** will not contain a **user-to-user information** parameter. Pre-test conditions: None				

TSS /DPP	TP ISN_V_3_4	Reference ITU-T Recommendation Q.1600 9.3.2.3.1.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *User-to-user signalling, service 1explicit non-essential* To verify that the IUT discards from the received **IAM** having the **user-to-user indicators** with the Service 1 field set to ‘request, non-essential’ and signals in the Service 1 field of the **user-to-user indicators** of the **ACM** ‘not provided’. The outgoing **IAM** will not contain a **user-to-user indicator/user-to-user information** parameter. Pre-test conditions: None				

TSS /DPP	TP ISN_V_3_5	Reference ITU-T Recommendation Q.1600 9.3.2.3.1.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *User-to-user signalling, service 1explicit essential* To verify that the IUT discards from the received **IAM** having the **user-to-user indicators** with the Service 1 field set to 'request, essential' and releases the call with the cause value #29 and diagnostics (the **user-to-user indicators** name). Pre-test conditions: None				

TSS /DPP	TP ISN_V_3_6	Reference ITU-T Recommendation Q.1600 9.3.2.3.1.2 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *User-to-user signalling, service 2 explicit non-essential* To verify that the IUT discards from the received **IAM** having the **user-to-user indicator/user-to-user information** with the Service 2 field set to 'request, non-essential' and signals in the Service 2 of the **user-to-user indicators** of the **ACM** 'not provided'. Pre-test conditions: None				

TSS /DPP	TP ISN_V_3_7	Reference ITU-T Recommendation Q.1600 9.3.2.3.1.2 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *User-to-user signalling, service 2 explicit essential* To verify that the IUT discards from the received **IAM** having the **user-to-user indicators** with the Service 2 field set to 'request, essential' and releases the call with the cause value #29 and diagnostics (the **user-to-user indicators** name). Pre-test conditions: None				

TSS /DPP	TP ISN_V_3_8	Reference ITU-T Recommendation Q.1600 9.3.2.3.1.3 a) /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *User-to-user signalling, service 3 explicit non-essential during call setup* To verify that the IUT discards from the received **IAM** having the **user-to-user indicators** with the Service 3 field set to 'request, non-essential' and signals in the Service 3 of the **user-to-user indicators** of the **ACM** 'not provided'. Pre-test conditions: None				

TSS /DPP	TP ISN_V_3_9	Reference ITU-T Recommendation Q.1600 9.3.2.3.1.3 a) /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *User-to-user signalling, service 3 explicit essential during call setup* To verify that the IUT discards from the received **IAM** having the **user-to-user indicators** with the Service 3 field set to 'request, essential' and releases the call with the cause value #29 and diagnostics (the **user-to-user indicators** name). Pre-test conditions: None				

TSS /DPP	TP ISN_V_3_10	Reference ITU-T Recommendation Q.1600 9.3.2.3.1.3 b /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *User-to-user signalling, service 3 after call setup* To verify that the IUT answers the received **FAR** having the **user-to-user indicators** with the Service 3 field set to 'request, non-essential' with a **FRJ** having in the Service 3 of the **user-to-user indicators** the coding 'not provided'. Pre-test conditions: None				

6.3.4 Setup of an IN call to destination B

Note that for all test purposes in this clause a call has been set up, this means that an user interactive dialogue has been performed or after the SSF has reported an EDP-R in the EventReportBCSM operation or a DP specific operation, respectively to the SCF.

6.3.4.1 Successful Call Setup

TSS /INB/SCS	TP ISN_V_4_1_1	Reference ITU-T Recommendation Q.1600 9.4.1.1.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Connect operation - sending no address complete message to the OLE* To verify that the IUT sends no **ACM** message towards the OLE. Pre-test conditions: Arrange the data in the IUT that a forwarding to an alternative subscriber is activated.				

TSS /INB/SCS	TP ISN_V_4_1_2	Reference ITU-T Recommendation Q.1600 9.4.1.2 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the serviceInteractionIndicators - relevant for the backward direction* To verify that the IUT, can successfully map the **serviceInteractionIndicators** with the conference at OLE accept. indicator set to 'reject conference request' of the **Connect** operation to the conference treatment indicators parameter of the **ACM/CPG/ANM/CON** message with the conference acceptance indicator set to reject conference request. Note that the previous **serviceInteractionIndicator** with the conference at OLE accept. indicator was set to 'accept conference request' of the previous **Connect**. Pre-test conditions: None				

TSS /INB/SCS	TP ISN_V_4_1_3	Reference ITU-T Recommendation Q.1600 9.4.1.2 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Mapping of the serviceInteractionIndicators – relevant for the backward direction* To verify that the IUT, does not map the received value of the **serviceInteractionIndicators** parameter, with the conference at OLE accept. indicator set to 'reject conference request' in the **Connect** operation and which is equal to the one that is stored in the SSP, to the **ACM/CPG/ANM/CON**, because the coding in this case is 'no indication'. Note that the previous **serviceInteractionIndicator** with the call to be diverted indicator was set to 'reject conference request'-of the previous **Connect**. Pre-test conditions: None				

TSS /INB/SCS	TP ISN_V_4_1_4	Reference ITU-T Recommendation Q.1600 /Q.1600 table 8 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Sending of backward messages - mapping of ACM/ ANM to CPG on the originating side* To verify that the IUT, maps the **ACM** of the terminating side successfully to a **CPG** on the originating side, if an **ANM/CON** was sent for the previous connection, but an **ANM/CON** was not received for the actual connection. The **serviceInteractionIndicators** in the **Connect** operation shall be mapped in the corresponding parameter of the **CPG** message. Note that if there is no generic notification parameter in the **CPG** message, the originating local exchange will discard the message. Pre-test conditions: None				

TSS /INB/SCS	TP ISN_V_4_1_5	Reference ITU-T Recommendation Q.1600 9.4.1.3/Q.1600 table 8 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Sending of backward messages - mapping of CON to CPG on the originating side* To verify that the IUT, maps the **CON** message of the terminating side successfully to a **CPG** message on the originating side, if an **ANM/CON** message was sent for the previous connection, but an **ANM/CON** was not received for the actual connection. The **serviceInteractionIndicators** in the **Connect** operation shall be mapped in the corresponding parameter of the **CPG** message. Note that if there is no generic notification parameter in the **CPG** message, the originating local exchange will discard the message. Pre-test conditions: None				

6.3.4.2 Abnormal conditions

TSS /INB/ACON	TP ISN_V_4_2_1	Reference ITU-T Recommendation Q.1600 9.4.3.1a i) /Q.1600 as endorsed by [1]	Selection expression NOT PICS A1/7	Configuration 1
Test purpose *Handling of unexpected messages - CPG received in forward direction* To verify that the IUT, discards a **CPG** (e.g. 'hold') received in the forward direction, if an **ACM** message has already been sent for the originating side of the call, but an **ACM** message has not been received for the destination side of the call. Pre-test conditions: None				

TSS /INB/ACON	TP ISN_V_4_2_2	Reference ITU-T Recommendation Q.1600 9.4.3.1a ii) /Q.1600 as endorsed by [1]	Selection expression PICS A/7	Configuration 1
Test purpose *Handling of unexpected messages – unrecognized message received in forward direction (ACM)* To verify that the IUT (type A), shall not pass on an unrecognized message received in forward direction, if an **ACM** message has already been sent for the originating side of the call, but an **ACM** message has not been received for the destination side of the call. (Q.764 clause2.9.5.2 item xi as endorsed by [2]) At a type A exchange where "pass on" has been specified for a message or parameter and "pass on" is not possible, then the "pass on not possible indicator" and "send notification indicator" are checked. Pre-test conditions: None				

TSS /INB/ACON	TP ISN_V_4_2_3	Reference ITU-T Recommendation Q.1600 9.4.3.1 b) /Q.1600 as endorsed by [1]	Selection expression PICS A1/8	Configuration 1
Test purpose *Handling of unexpected messages - unrecognized message received in forward direction (ANM)* To verify that the IUT, discards an received **SUS**, **RES**, **FAR** or **FOT** message which was send in forward direction, if an **ANM** message has already been sent for the originating side of the call, but an **ANM** message has not been received for the destination side of the call. Pre-test conditions: None				

6.3.5 User interactive dialogue (in-band)

Note that for all test purposes in this clause, the availability of an SRF or an intelligent peripheral (IP) respectively, which is normal located in the IUT, is mandatory. This means, that if in response to the InitialDP operation, the EventReportBCSM operation or a DP specific operation, a ConnectToResource operation is received from the SCP, then the incoming call shall be connected to a physical entity containing the SRF.

6.3.5.1 SSP supports requested IP Capabilities

TSS /UID/IPC	TP ISN_V_5_1_1	Reference ITU-T Recommendation Q.1600 9.5.1.1.1.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/ConnectToResource operation* To verify that the IUT is able to connect the IP to the incoming call, with receiving the **ConnectToResource** operation, in case of receiving an **IAM** message with **TMR** set to **"Speech"** from the originating exchange. Pre-test conditions: None				

TSS /UID/IPC	TP ISN_V_5_1_2	Reference ITU-T Recommendation Q.1600 9.5.1.1.1.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/ConnectToResource operation* To verify that the IUT releases the call in case of receiving an **IAM** message with **TMR** set to other value than speech, 3,1 kHz audio or 64 kbit/s preferred from the originating side. The **REL** message shall contains the cause value **#65**. There shall be no **ConnectToResource** operation sent from the SCF to the SSF. (Q.1214 [6] /p.198) Pre-test conditions: None				

TSS /UID/IPC	TP ISN_V_5_1_3	Reference ITU-T Recommendation Q.1600 9.5.1.1.2 /Q.1600 as endorsed by [1]	Selection expression PICS A1/4	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/Address Complete Message* To verify that the IUT sends an **ACM** message including an **UID action indicators** parameter coded with through-connect in both directions. This shall be the case if the "bothwaythrough-connect" indicator in the **serviceInteractionIndicators** parameter of the **ConnectToResource** operation was set to "required" and if an **UID capability indicators** parameter was sent with bit A coded 1(through-connect modification possible) in the **IAM** from the OLE. If a backward **ACM** message have already been sent to the OLE, then instead of the **ACM** message a **CPG** message is sent. The **CPG** message shall contain the **UID action indicator** parameter as described above for the **ACM** message. Pre-test conditions: None				

TSS /UID/IPC	TP ISN_V_5_1_4	Reference ITU-T Recommendation Q.1600 9.5.1.1.2 /Q.1600 as endorsed by [1]	Selection expression PICS A1/4	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/ Address Complete Message* To verify that the IUT sends an **ACM** message including an **UID action indicators** parameter with bit B coded 1 (stop or do not start T9). This shall be the case if the **User interactive dialogue duration indicator** in the **serviceInteractionIndicators** parameter of the **ConnectToResource** operation was set to "long duration" and if an **UID capability indictors** parameter was sent with bit B coded 1 (stopping of timer possible) in the **IAM** message from the OLE. If a backward **ACM** message have already been sent to the OLE, then instead of the **ACM** message a **CPG** message is sent. The **CPG** message shall contain the **UID action indicator** parameter as described above for the **ACM** message. Pre-test conditions: None				

TSS /UID/IPC	TP ISN_V_5_1_5	Reference ITU-T Recommendation Q.1600 9.5.1.1.3 a) /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/Answer Message* To verify that the IUT sends an **ANM** message if the **bothway through-connect** indicator in the **serviceInteractionIndicators** parameter of the **ConnectToResource** operation was set to "required" and if no **through-connection capability** indicator set to "through-connection modification possible" was sent in the **IAM** to the IUT. Pre-test conditions: None				

TSS /UID/IPC	TP ISN_V_5_1_6	Reference ITU-T Recommendation Q.1600 9.5.1.1.3 b) /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/Answer Message* To verify that the IUT sends an **ANM** message if the User interactive **dialogue duration** indicator in the **serviceInteractionIndicator** parameter of the **ConnectToResource** operation was set to "long duration" and if no **T9 timer** indicator set to "stopping of timer possible" was sent in the **IAM** to the IUT. Pre-test conditions: None				

TSS /UID/IPC	TP ISN_V_5_1_7	Reference ITU-T Recommendation Q.1600 9.5.1.3 a) /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Connection type allowing fallback* To verify that the IUT is allowing fallback for connection type, if the **TMR** value received in the **IAM** message is set to "64 kbit/s unrestricted preferred", then on receipt of the **ConnectToResource** operation with the **serviceInteractionIndicators** parameter bothway throuhconnect indicator set to "required" the fallback is performed, if no fallback has already been performed and **ANM** message is sent to the OLE Pre-test conditions: None				

TSS /UID/IPC	TP ISN_V_5_1_8	Reference ITU-T Recommendation Q.1600 9.5.1.5.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Impact on suppl.services/COLP* To verify that the IUT is sending an **ANM** message containing the appropriate data (**connected number** parameter) to the OLE, if the connected number is available for the IP and the **serviceInteractionIndicators** (connected number treatment indicator) set to "no impact" in the **ConnectToResource** operation was received from the SCP. Pre-test conditions: Arrange so that connected number is available for the IP				

TSS /UID/IPC	TP ISN_V_5_1_9	Reference ITU-T Recommendation Q.1600 9.5.1.5.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Impact on suppl.services/COLP* To verify that the IUT is sending an **ANM** message containing an **connected number** parameter with the following contents: nature of address indicator: 0000000 numbering plan indicator: 000 address presentation restricted indicator: 10 (address not available) no address signals to the OLE, if the connected number is not available for the IP and the **serviceInteractionIndicators** (connected number treatment indicator) set to "no impact" in the **ConnectToResource** operation was received from the SCP. Pre-test conditions: Arrange so that connected number is not available for the IP				

TSS /UID/IPC	TP ISN_V_5_1_10	Reference ITU-T Recommendation Q.1600 9.5.1.5.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Impact on suppl.services/COLP* To verify that the IUT is sending an **ANM** message containing the appropriate data to the OLE, if the connected number is available for the IP and the **serviceInteractionIndicators** (connected number treatment indicator) set to "presentation restricted" in the **ConnectToResource** operation received from the SCP. Pre-test conditions: Arrange so that connected number is available for the IP				

TSS /UID/IPC	TP ISN_V_5_1_11	Reference ITU-T Recommendation Q.1600 9.5.1.5.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Impact on suppl.services/COLP* To verify that the IUT is sending an **ANM** message containing an **connected number** parameter with the following contents: nature of address indicator: 0000000 numbering plan indicator: 000 address presentation restricted indicator: 10 (address not available) no address signals to the OLE, if the connected number is not available for the IP and the **serviceInteractionIndicators** (connected number treatment indicator) set to "presentation restricted" in the **ConnectToResource** operation was received from the SCP. Pre-test conditions: Arrange so that connected number is not available for the IP				

TSS /UID/IPC	TP ISN_V_5_1_12	Reference ITU-T Recommendation Q.1600 9.5.1.5.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Impact on suppl.services/COLP* To verify that the IUT is sending an **ANM** message which contains an **connected number** parameter with the following contents: nature of address indicator and numbering plan indicator: encoded as received in the **CdPN** in the **IAM** address presentation restricted indicator: 00 (presentation allowed) address signals: as received in the **CdPN/SubsequentNumber** parameters, until **ACM** message was sent. To the OLE. The connected number is generated by the IUT as described above, if the **serviceInteractionIndicators** (connected number treatment indicator) was set to "present called IN number" in the received **ConnectToResource** operation from the SCP. The **ANM** does not contain a **generic number** parameter with the value "additional connected number". Pre-test conditions: None				

TSS /UID/IPC	TP ISN_V_5_1_13	Reference ITU-T Recommendation Q.1600 9.5.1.5.2.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Impact on suppl.services/UUS1implicit requested* To verify that the IUT discards the user-to-user information parameter in the **IAM** message sent by the OLE, if the UUS1 is implicitly requested. The **ACM** message sent by the IUT shall contain the **user-to-user indicators** parameter indicating "user-to-user information discarded by the network". Pre-test conditions: None				

TSS /UID/IPC	TP ISN_V_5_1_14	Reference ITU-T Recommendation Q.1600 9.5.1.5.2.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Impact on suppl.services/UUS1 explicitly requested* To verify that the IUT discards the user-to-user information parameter in the **IAM** message sent by the OLE, if the UUS1 service is explicitly requested as "not essential". The **ACM** message sent by the IUT shall contain the **user-to-user indicators** parameter indicating "not provided". Pre-test conditions: None				

TSS /UID/IPC	TP ISN_V_5_1_15	Reference ITU-T Recommendation Q.1600 9.5.1.5.2.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Impact on suppl.services/UUS1 explicitly requested* To verify that the IUT clears the call in case of receipt of a **IAM** message which requests the UUS1 service as "essential". The IUT sends an **REL** with **cause value #29** and the corresponding **diagnostics** parameter. Pre-test conditions: None				

TSS /UID/IPC	TP ISN_V_5_1_16	Reference ITU-T Recommendation Q.1600 9.5.1.5.2.2 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Impact on suppl.services/UUS2 explicitly requested* To verify that the IUT discards the **user-to-user indicators** parameter received in the **IAM** message sent by the OLE if the UUS2 service is explicitly requested as "not essential". The **ACM** message sent by the IUT shall contain the **user-to-user indicators** parameter indicating "not provided". Pre-test conditions: None				

TSS /UID/IPC	TP ISN_V_5_1_17	Reference ITU-T Recommendation Q.1600 9.5.1.5.2.2 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Impact on suppl.services/UUS2 explicitly requested* To verify that the IUT clears the call in case of receipt of a **IAM** message which requests the UUS2 service as "essential". The IUT sends an **REL** with **cause value #29** and the corresponding **diagnostics** parameter. Pre-test conditions: None				

TSS /UID/IPC	TP ISN_V_5_1_18	Reference ITU-T Recommendation Q.1600 9.5.1.5.2.3a) /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Impact on suppl.services/UUS3 Service req. during call set-up* To verify that the IUT discards the **user-to-user indicators** parameter received in the **IAM** message sent by the OLE, if the UUS3 service is explicitly requested as "no essential". The **ACM** message sent by the IUT shall contain the **user-to-user indicators** parameter indicating "not provided". Pre-test conditions: None				

TSS /UID/IPC	TP ISN_V_5_1_19	Reference ITU-T Recommendation Q.1600 9.5.1.5.2.3a) /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose Successful call set-up - Impact on suppl.services/UUS3 Service req. during call set-up To verify that the IUT clears the call in case of receipt of a **IAM** message which requests the UUS3 service as "essential". The IUT sends an **REL** with **cause value #29** and the corresponding **diagnostics** parameter. Pre-test conditions: None				

TSS /UID/IPC	TP ISN_V_5_1_20	Reference ITU-T Recommendation Q.1600 9.5.1.5.2.3b) /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Impact on suppl.services/UUS3 Service req. after call set-up* To verify that the IUT answers the received **FAR** message having the facility indicators set to "user-to-user service" and the **user-to-user indicators** with the Service 3 field set to 'request, non-essential' with a **FRJ** having in the Service 3 of the **user-to-user indicators** the coding 'not provided'. Pre-test conditions: None				

6.3.5.2 Assist method - procedure in the initiating SSP

Note that for all the test purposes in this clause, the availability of an SRF or an intelligent peripheral (IP) respectively is mandatory. The SRF or IP should be located in an assistant SSF which shall be involved in the call scenario. Therefore a **EstablishTemporaryConnection** operation is used to create a connection between an Initiating SSF(I-SSF) and an Assisting SSF(A-SSF) as part of a service assist procedure. It is also possible that it can be used to create a connection between an SSF and an SRF, for the case where the SRF exists in a separately addressable physical entity.

TSS /UID/AM_ISSP	**TP ISN_V_5_2_1**	**Reference ITU-T Recommendation Q.1600 9.5.2.1.1.1 /Q.1600 as endorsed by [1]**	**Selection expression**	**Configuration 1**
Test purpose *Successful call set-up - Forward address signalling/TMR Speech* To verify that the IUT is able to connect an external IP to the incoming call, with receiving the **EstablishTemporaryConnection** operation, in case of receiving an **IAM** with **TMR** set to **"Speech"** from the originating exchange. Pre-test conditions: None				

TSS /UID/AM_ISSP	**TP ISN_V_5_2_2**	**Reference ITU-T Recommendation Q.1600 9.5.2.1.1.1 /Q.1600 as endorsed by [1]**	**Selection expression**	**Configuration 1**
Test purpose *Successful call set-up - Forward address signalling/TMR 3,1 kHz* To verify that the IUT is able to connect an external IP to the incoming call, with receiving the **EstablishTemporaryConnection** operation, in case of receiving an **IAM** with **TMR** set to **"3,1kHz"** from the originating exchange. Pre-test conditions: None				

TSS /UID/AM_ISSP	**TP ISN_V_5_2_3**	**Reference ITU-T Recommendation Q.1600 9.5.2.1.1.1 /Q.1600 as endorsed by [1]**	**Selection expression**	**Configuration 1**
Test purpose *Successful call set-up - Forward address signalling/TMR 64 kbit/s preferred* To verify that the IUT is able to connect an external IP to the incoming call, when receiving the **EstablishTemporaryConnection** operation, in case of receiving an **IAM** with **TMR** set to **"64 kbit/s unrestricted preferred"** from the originating exchange and fallback is performed as described in subclauses 2.5.1.2.2 and 2.5.2.2.2 of ITU-T Recommendation Q.764 as endorsed by [2]. NOTE: The **IAM** contains a **TMR prime** set to "3,1kHz Audio" and **USI** and **USI prime** parameters. Pre-test conditions: None				

TSS /UID/AM_ISSP	TP ISN_V_5_2_4	Reference ITU-T Recommendation Q.1600 9.5.2.1.1.1 /Q.1600 as endorsed by [1]	Selection expression PICS A1/9	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/other TMR* To verify that the IUT will not connect an external IP to the incoming call, i.e. a **EstablishTemporaryConnection** operation will not be sent, in case of receiving an **IAM** with **TMR** set to other value than speech, 3,1 kHz audio or 64 kbit/s preferred from the originating exchange and the call will be released. The **REL** shall contains the cause value **#65**. Pre-test conditions: None				

TSS /UID/AM_ISSP	TP ISN_V_5_2_5	Reference ITU-T Recommendation Q.1600 9.5.2.1.1.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/Call diversion treatment indicator* To verify that the IUT maps the **serviceInteractionIndicators** parameter including the **"Call to be diverted indicator"** set to "call diversion allowed" of the **EstablishTemporaryConnection** operation received from the SCP into the **Call diversion treatment indicator** parameter with "call diversion allowed" in the **IAM** which is sent from the I-SSP(IUT) to the assisting SSP, where the IP resides. NOTE: The above mentioned scenario is also valid for the mapping of the **Call to be offered indicator** and the **Conference at DLE accept. Ind.** Use no default values! Pre-test conditions: None				

TSS /UID/AM_ISSP	TP ISN_V_5_2_6	Reference ITU-T Recommendation Q.1600 9.5.2.1.1.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/mapping Correlation id* To verify that the IUT maps the **correlationID** parameter of the **EstablishTemporaryConnection** operation received from the SCP into the **Correlation id** of the **IAM** which is sent from the I-SSP(IUT) to the assisting SSP where the IP resides. Pre-test conditions: None				

TSS /UID/AM_ISSP	TP ISN_V_5_2_7	Reference ITU-T Recommendation Q.1600 9.5.2.1.1.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/mapping SCF id* To verify that the IUT maps the **scfID** parameter of the **EstablishTemporaryConnection** operation received from the SCP into the **SCF id** of the **IAM** which is sent from the I-SSP(IUT) to the assisting SSP where the IP resides. Pre-test conditions: None				

TSS /UID/AM_ISSP	TP ISN_V_5_2_8	Reference ITU-T Recommendation Q.1600 9.5.2.1.1.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1

Test purpose

Successful call set-up - Forward address signalling/mapping mandatory parameters

To verify that the IUT generates the correct **IAM** message after the **EstablishTemporaryConnection** operation has been received from the SCP. Except the **called party number** parameter (given from the **assistingSSPIPRoutingAddress** parameter), the remaining mandatory parameters of the **IAM** message shall be set as follows:
Nature of connection indicators:
Satellite indicator: set as in an OLE
Continuity check indicator: set as in an OLE
Echo control device indicator: set as in an OLE
Forward call indicators:
National/international call indicator: set as in an OLE
End-to-end method indicator: 00 (no end-to-end method available)
Interworking indicator: 0 (no interworking encountered)
End-to-end information indicator: 0 (no end-to-end information available)
ISDN user part indicator: 1 (ISDN user part used all the way)
ISDN user part preference indicator: 10 (ISDN user part required all the way)
ISDN access indicator: 0 (originating access non-ISDN)

Callings party's category:
00001010 (ordinary subscriber)
Transmission medium requirement:
00000011 (3,1 kHz audio)

If the following optional parameter are included in the IAM message, it shall be coded as follows:
propagation delay counter:
(set as in an OLE)

Pre-test conditions: None

TSS /UID/AM_ISSP	TP ISN_V_5_2_9	Reference ITU-T Recommendation Q.1600 9.5.2.1.1.2 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1

Test purpose

Unsuccessful call set-up - Forward address signalling/IW with ISUP not supporting Correlation&SCF id parameters

To verify that the IUT releases the call with cause code #31, if an exchange related in the call cannot transfer the **Correlation id** and **SCF id** parameter in the **IAM** message to the assisting SSP.

NOTE: The exchange which cannot pass on the ISUP V3 parameter/messages is simulated by the test system.

Pre-test conditions: None

TSS /UID/AM_ISSP	TP ISN_V_5_2_10	Reference ITU-T Recommendation Q.1600 9.5.2.3 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/DisconnectForwardConnection operation* To verify that the IUT applies the normal release procedures for the outgoing circuits if a **DisconnectForwardConnection** operation is received from the SCP. The **REL** message is sent in forward direction to the A-SSP and it contains the **cause** parameter with value #31. NOTE: The A-SSP is simulated by the test system. Pre-test conditions: None				

TSS /UID/AM_ISSP	TP ISN_V_5_2_11	Reference ITU-T Recommendation Q.1600 9.5.2.4.1 /Q.1600 9.4.3.1a i) /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/Abnormal conditions (CPG received in forward direction)* To verify that the IUT, discards a **CPG** received in the forward direction, if an **ACM** message has already been sent for the originating side of the call, but an **ACM** has not been received for the destination site of the call. Pre-test conditions: None				

TSS /UID/AM_ISSP	TP ISN_V_5_2_12	Reference ITU-T Recommendation Q.1600 9.5.2.4.1 /Q.1600 9.4.3.1a ii) /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/Abnormal conditions - unrecognized message received in forward direction (ACM)* To verify that the IUT (type A), shall not pass on an unrecognized message received in forward direction, if an **ACM** message has already been sent for the originating side of the call, but an **ACM** has not been received for the destination site of the call. (Q.764 clause2.9.5.2 item ix as endorsed by [2]) At a type A exchange where "pass on" has been specified for a message or parameter and "pass on" is not possible, then the "pass on not possible indicator" and "send notification indicator" are checked Pre-test conditions: None				

TSS /UID/AM_ISSP	TP ISN_V_5_2_13	Reference ITU-T Recommendation Q.1600 9.5.2.4.1 /Q.1600 9.4.3.1b /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/Abnormal conditions - unrecognized message received in forward direction (ANM)* To verify that the IUT, discards an received **SUS**, **RES**, **FAR** or **FOT** message which was send in forward direction, if an **ANM** message has already been sent for the originating side of the call, but an **ANM** has not been received for the terminating side of the call. Pre-test conditions: None				

TSS /UID/AM_ISSP	TP ISN_V_5_2_14	Reference ITU-T Recommendation Q.1600 9.5.2.5 /Q.1600 9.4.4.2 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/Abnormal conditions - Impact on supplementary services (Malicious call identification)* To verify that the IUT is not passing on the **IDR** message to the origination exchange, if an **IDR** or an **ANM** was already sent. The IUT shall immediately responds with an **IRS** message to the terminating exchange. Pre-test conditions: None				

TSS /UID/AM_ISSP	TP ISN_V_5_2_15	Reference ITU-T Recommendation Q.1600 9.5.2.1.1.1 /Q.1600 9.4.4.2 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/Abnormal conditions - Impact on supplementary services (Malicious call identification)* To verify that the IUT is passing on the **IDR** message transparently towards to the origination exchange, if an **IDR** was not sent. Pre-test conditions: None				

6.3.5.3 Hand-off method - procedure in the initiating SSP

With the Hand-off method it is possible to change over the IN-call, initiated at the I-SSP to an appropriated Assisting SSP (A-SSP) which is including an IP. The I-SSP functionality is "reduced" to an intermediate exchange after the circuits of the related call are through connected. This means that the initiated IN-call is managed from that time by the A-SSP.

Note that for all test purposes in this clause neither an SRF nor an intelligent peripheral (IP) respectively, which is normal located in the IUT, is available. These functions should be instantiated in another related SSP.

6.3.5.3.1 Basic Call scenarios

TSS /UID/HOM_ISSP	**TP ISN_V_5_3_1**	**Reference ITU-T Recommendation Q.1600 9.5.3 /Q.1600 as endorsed by [1]**	**Selection expression PICS A1/10**	**Configuration 1**
Test purpose *Successful call set-up - Forward address signalling* To verify that the IUT (I-SSP) can successfully map the **correlationID** and **scfID** parameters of the **Connect** operation to the **correlation id** and **scf id** parameter of the **IAM**. NOTE: If the **correlationID** and **scfID** are not specified separately, the parameters are included in the **destinationRoutingAddress** parameter of the **Connect** operation. Pre-test conditions: None				

TSS /UID/HOM_ISSP	**TP ISN_V_5_3_2**	**Reference ITU-T Recommendation Q.1600 9.5.3 /Q.1600 as endorsed by [1]**	**Selection expression**	**Configuration 1**
Test purpose *Successful call set-up – Forward address signalling* To verify that the IUT (I-SSP) is not send an **REL** message to the A-SSP after receiving the **ANM** from the A-SSP. In case of the hand-off method, the behaviour of the I-SSP after sending the **IAM** with the appropriated parameter (**Scf ID** and **Correlation ID**), is equal as in a Transit or Local exchange. Pre-test conditions: None				

6.3.5.4 Assist / Hand-off method - procedure in the assisting SSP

6.3.5.4.1 Basic Call scenarios

Note that for all test purposes in this clause, the availability of an SRF or an intelligent peripheral (IP) respectively, which is normal located in the IUT, is mandatory. This means, that if in response to the AssistRequestInstruction operation, a ConnectToResource or PromptAndCollectUserInformation operation is received from the SCP, then the incoming call shall be connected to a physical entity containing the SRF.

TSS /UID/HOM_ASSP	TP ISN_V_5_4_1	Reference ITU-T Recommendation Q.1600 9.5.4.1.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling* To verify that the IUT can successfully map an received **IAM** including the **Scf ID** and **Correlation ID** to an **AssistRequestInstruction** with the appropriated **correlationID** parameter. Pre-test conditions: None				

TSS /UID/HOM_ASSP	TP ISN_V_5_4_2	Reference ITU-T Recommendation Q.1600 9.5.4.1.1 /Q.1600 9.5.1.1.1.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/ConnectToResource operation* To verify that the IUT is able to connect the IP to the incoming call, with receiving the **ConnectToResource** operation, in case of receiving an **IAM** with **Scf ID, Correlation ID** and **TMR** set to **"Speech"** from the originating exchange. Pre-test conditions: None				

TSS /UID/HOM_ASSP	TP ISN_V_5_4_3	Reference ITU-T Recommendation Q.1600 9.5.4.1.1 /Q.1600 9.5.1.1.1.1 /Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *Successful call set-up - Forward address signalling/ConnectToResource operation* To verify that the IUT releases the call in case of receiving an **IAM** with **Scf ID, Correlation ID** and **TMR** set to other value than speech, 3,1 kHz audio 64 kbit/s unrestricted or 64 kbit/s preferred from the originating side. The **REL** shall contains the cause value **#65**. There shall be no **ConnectToResource** operation sent from the SCF to the SSF. (See ITU-T Recommendation Q.1214 [6] , p.198 [6]). Pre-test conditions: None				

6.3.6 Call gapping

With this feature it is possible to reduce the service requests which are sent from the SSF to the SCF. To achieve that reduction of the specific service requests it is possible to select the criteria in the so called 'gapCriteria' of the CallGap operation. The individual criteria which is necessary for the execution of the test is noted in the 'subtitle' of the test purpose and it should be supported by the IUT. Note that the CallGap operation is sent by the test system.

TSS /CG	TP ISN_V_6_1	Reference ITU-T Recommendation Q.1600 9.6. /Q.1600 3.3.10.1.1 as endorsed by [1] /Q.1218 [7]	Selection expression	Configuration 1
Test purpose *Call gapping – mapping ACM and REL / gapTreatment 'informationToSend' and gap criteria 'calledAddressValue'* To verify that the IUT performs the 'Call gapping' procedure, a **CallGap** operation with the **gapCriteria** parameter 'calledAddressValue', the **gapTreatment** parameter 'informationToSend' indicating announcement or tone and the **releaseCause** parameter indicating cause # 31 is sent by the test system to the IUT. After receiving an IAM message with the proper **Called Party Number** parameter from the OLE (test system) an **ACM** message containing an **optional backward call indicator** parameter indicating 'in-band information or an appropriate pattern is now available' shall be sent from the IUT. After the calling user has received the 'informationToSend' the call is released and the **cause indicators** parameter in the **REL** message contains the **releaseCause** parameter of the **CallGap** operation. Pre-test conditions: None				

TSS /CG	TP ISN_V_6_2	Reference ITU-T Recommendation Q.1600 9.6. a) /Q.1600 3.3.10.1.1 as endorsed by [1] /Q.1218 [7]	Selection expression	Configuration 1
Test purpose *Call gapping – mapping ACM and REL / gapTreatment 'informationToSend' and gap criteria 'gapOnService'* To verify that the IUT performs the 'Call gapping' procedure, a **CallGap** operation with the **gapCriteria** parameter 'gapOnService', the **gapTreatment** parameter 'informationToSend' indicating announcement or tone and the **releaseCause** parameter indicating cause #31 is sent by the test system to the IUT. After receiving an IAM message with the proper **service key** parameter from the OLE an **ACM** message containing an **optional backward call indicator** parameter indicating 'in-band information or an appropriate pattern is now available' shall be sent from the IUT. After the calling user has received the 'informationToSend' the call is released and the **cause indicators** parameter in the **REL** message contains the **releaseCause** parameter of the **CallGap** operation. Pre-test conditions: None				

TSS /CG	TP ISN_V_6_3	Reference ITU-T Recommendation Q.1600 9.6. a) /Q.1600 3.3.10.1.1 as endorsed by [1] /Q.1218 [7]	Selection expression	Configuration 1
Test purpose *Call gapping – mapping ACM and REL with cause value #31 / gapTreatment 'informationToSend' and gap criteria 'calledAddressAndService'* To verify that the IUT performs the 'Call gapping' procedure, a **CallGap** operation with the **gapCriteria** parameter 'calledAddressAndService', the **gapTreatment** parameter 'informationToSend' indicating announcement or tone and the no **releaseCause** parameter is sent by the test system to the IUT. After receiving an IAM message with the proper **service key** and the leading digits of the dialled **called party number** parameter from the OLE an **ACM** message containing an **optional backward call indicator** parameter indicating 'in-band information or an appropriate pattern is now available' shall be sent from the IUT. After the calling user has received the 'informationToSend' the call is released and the **cause indicators** parameter in the **REL** message contains cause value #31. Pre-test conditions: None				

TSS /CG	TP ISN_V_6_4	Reference ITU-T Recommendation Q.1600 9.6.b)/Q.1600 3.3.10.1.1 as endorsed by [1] /Q.1218 [7]	Selection expression	Configuration 1
Test purpose *Call gapping – mapping REL / gapTreatment 'displayinformation' and gap criteria 'calledAddressValue'* To verify that the IUT performs the 'Call gapping' procedure, a **CallGap** operation with the **gapCriteria** parameter 'calledAddressValue', the **gapTreatment** parameter 'informationToSend' indicating display information and the **releaseCause** parameter indicating cause #31 is sent by the test system to the IUT. After receiving an IAM message with the proper **Called Party Number** parameter from the OLE an **REL** message containing an **display information** parameter shall be sent from the IUT. The **cause indicators** parameter in the **REL** message contains the **releaseCause** parameter of the **CallGap** operation. Pre-test conditions: None				

TSS /CG	TP ISN_V_6_5	Reference ITU-T Recommendation Q.1600 9.6.b)/Q.1600 3.3.10.1.1 as endorsed by [1] /Q.1218 [7]	Selection expression	Configuration 1
Test purpose *Call gapping – mapping REL with cause value #31 / gapTreatment 'displayinformation' and gap criteria 'gapOnService'* To verify that the IUT performs the 'Call gapping' procedure, a **CallGap** operation with the **gapCriteria** parameter 'gapOnService', the **gapTreatment** parameter 'informationToSend' indicating display information and no **releaseCause** parameter is sent by the test system to the IUT. After receiving an **IAM** message with the proper **Service key** parameter from the OLE an **REL** message containing an **display information** parameter shall be sent from the IUT. The **cause indicators** parameter in the **REL** message contains cause value #31. Pre-test conditions: None				

TSS /CG	TP ISN_V_6_6	Reference ITU-T Recommendation Q.1600 9.6./Q.1600 3.3.10.1.1 as endorsed by [1] /Q.1218 [7]	Selection expression	Configuration 1
Test purpose *Call gapping - without a gapTreatment parameter / gap criteria 'callingAddressAndService'* To verify that the IUT performs the 'Call gapping' procedure, a **CallGap** operation with the **gapCriteria** parameter 'callingAddressAndService', without a **gapTreatment** parameter and the no **releaseCause** parameter is sent by the test system to the IUT. After receiving an IAM message with the proper **service key** and the leading digits of the **calling party number** parameter from the OLE the call shall be released with an **REL** message including an cause value #42. Pre-test conditions: None				

TSS /CG	TP ISN_V_6_7	Reference ITU-T Recommendation Q.1600 9.6./Q.1600 3.3.10.1.1 as endorsed by [1] /Q.1218 [7]	Selection expression	Configuration 1
Test purpose *Call gapping - without a gapTreatment parameter / gap criteria 'calledAddressAndService'* To verify that the IUT performs the 'Call gapping' procedure, a **CallGap** operation with the **gapCriteria** parameter 'calledAddressAndService', without a **gapTreatment** parameter and the **releaseCause** parameter indicates the cause value #97 is sent by the test system to the IUT. After receiving an IAM message with the proper **service key** and the leading digits of the dialled **called party number** parameter from the OLE the call shall be released with an **REL** message including an cause value #42. Pre-test conditions: None				

6.3.7 Service filtering

To activate the service filtering procedure it is necessary that the (SCP) sends an ActivateServiceFiltering operation to the SSF or IUT, respectively. In this case it is necessary that the operation contains the appropriate parameter which depends on the service to be filtered. For the test purposes below there are only two filtering criteria set: 'serviceKey' and 'calledAddressValue'. The other criteria specified in subclause 3.3.1.1.1 d) of ITU-T Recommendation Q.1218 [7] are not in the scope of this subclause. The 'filterCriteria' is mentioned in subtitle of the test purpose. Note that the SCP is simulated by the test system.

TSS /SF	TP ISN_V_7_1	Reference ITU-T Recommendation Q.1600 9.7 a)/Q.1600 3.3.1 as endorsed by [1] /Q.1218 [7]	Selection expression	Configuration 1
Test purpose *Service filtering - sending ACM and no ANM / filter criteria 'calledAddressValue'* To verify that the IUT performs the 'Service filtering' procedure, an **ActivateServiceFiltering** operation with the **filteringCriteria** parameter set to 'calledAddressValue', the **informationToSend** parameter indicates announcement or tone and the **releaseCause** parameter set to cause value #97 is sent from the SCP to the IUT. After a **IAM** message concerning to the service filtering criteria is received by the IUT, then an **ACM** message is sent to the OLE with an **optional backward call indicator** parameter indicating 'in-band information or an appropriate pattern is now available'. After the calling user has received the 'informationToSend' the call is released and the **cause indicators** parameter contains the **releaseCause** parameter of the **ServiceFiltering** operation. Pre-test conditions: Arrange the data in the IUT that the in-band information is not chargeable.				

TSS /SF	TP ISN_V_7_2	Reference ITU-T Recommendation Q.1600 9.7 a)/Q.1600 3.3.1 as endorsed by [1] /Q.1218 [7]	Selection expression	Configuration 1
Test purpose *Service filtering - sending ACM and ANM / filter criteria 'calledAddressValue'* To verify that the IUT performs the 'Service filtering' procedure, an **ActivateServiceFiltering** operation with the **filteringCriteria** parameter set to 'calledAddressValue', the **informationToSend** parameter indicates announcement or tone and the **releaseCause** parameter set to cause value #97 is sent from the SCP to the IUT. After a **IAM** message concerning to the service filtering criteria is received by the IUT, then an **ACM** message is sent to the OLE with an **optional backward call indicator** parameter indicating 'in-band information or an appropriate pattern is now available'. Also an **ANM** message is sent in addition. After the calling user has received the 'informationToSend' the call is released and the **cause indicators** parameter contains the **releaseCause** parameter of the **ServiceFiltering** operation. Pre-test conditions: Arrange the data in the IUT that the in-band information is chargeable.				

TSS /SF	TP ISN_V_7_3	Reference ITU-T Recommendation Q.1600 9.7 a)/Q.1600 3.3.1 as endorsed by [1] /Q.1218 [7]	Selection expression	Configuration 1
Test purpose *Service filtering - sending ACM and ANM / filter criteria 'serviceKey', no releaseCause parameter* To verify that the IUT performs the 'Service filtering' procedure, an **ActivateServiceFiltering** operation with the **filteringCriteria** parameter set to 'serviceKey', the **informationToSend** parameter indicates announcement or tone and no **releaseCause** parameter is sent from the SCP to the IUT. After a **IAM** message concerning to the service filtering criteria is received by the IUT, then an **ACM** message is sent to the OLE with an **optional backward call indicator** parameter indicating 'in-band information or an appropriate pattern is now available'. Also an **ANM** message is sent in addition. After the calling user has received the 'informationToSend' the call is released and the **cause indicators** parameter contains the cause value #31. Pre-test conditions: Arrange the data in the IUT that the in-band information is chargeable.				

TSS /SF	TP ISN_V_7_4	Reference ITU-T Recommendation Q.1600 9.7 b)/Q.1600 3.3.1 as endorsed by [1] /Q.1218 [7]	Selection expression	Configuration 1
Test purpose *Service filtering - sending REL / filter criteria 'calledAddressValue'* To verify that the IUT performs the 'Service filtering' procedure, an **ActivateServiceFiltering** operation with the **filteringCriteria** parameter set to 'calledAddressValue', the **informationToSend** parameter indicates display information and the **releaseCause** parameter set to cause value #97 is sent from the SCP to the IUT. After a **IAM** message concerning to the service filtering criteria is received by the IUT, then the call is released and a display information parameter is included in the **REL** message. The **cause indicators** parameter contains the **releaseCause** parameter of the **ServiceFiltering** operation. Pre-test conditions: Arrange the data in the IUT that the 'informationToSend is free of charge.				

TSS /SF	TP ISN_V_7_5	Reference ITU-T Recommendation Q.1600 9.7 b)/Q.1600 3.3.1 as endorsed by [1] /Q.1218 [7]	Selection expression	Configuration 1
Test purpose *Service filtering - sending ANM / filter criteria 'calledAddressValue'* To verify that the IUT performs the 'Service filtering' procedure, an **ActivateServiceFiltering** operation with the **filteringCriteria** parameter set to 'calledAddressValue', the **informationToSend** parameter indicates display information and the **releaseCause** parameter set to cause value #97 is sent from the SCP to the IUT. After a **IAM** message concerning to the service filtering criteria is received by the IUT, then an **ANM** message is sent to the OLE containing the display information parameter. After the calling user has received the 'informationToSend' the call is released and the **cause indicators** parameter contains the **releaseCause** parameter of the **ServiceFiltering** operation. Pre-test conditions: Arrange the data in the IUT that the 'informationToSend' is not free of charge.				

TSS /SF	TP ISN_V_7_6	Reference ITU-T Recommendation Q.1600 9.7 b)/Q.1600 3.3.1 as endorsed by [1] /Q.1218 [7]	Selection expression	Configuration 1
Test purpose *Service filtering - sending ANM / filter criteria 'serviceKey', no releaseCause parameter* To verify that the IUT performs the 'Service filtering' procedure, an **ActivateServiceFiltering** operation with the **filteringCriteria** parameter set to 'serviceKey', the **informationToSend** parameter indicates display information and no **releaseCause** parameter is sent from the SCP to the IUT. After a **IAM** messaqe concerning to the service filtering criteria is received by the IUT, then an **ANM** message is sent to the OLE containing the display information parameter. After the calling user has received the 'informationToSend' the call is released and the **cause indicators** parameter contains the cause value #31. Pre-test conditions: Arrange the data in the IUT that the 'informationToSend' is not free of charge.				

6.3.8 SCP initiated call

For a SCP initiated call the SSP/IUT behaves like an originating local exchange with the exception that no information is received/sent from/to the access protocol. The call set-up information needed for the generation of the IAM message is partly provided with the InitiateCallAttempt operation which is sent by the SCP or test system, respectively.
This operation is used to request the SSF to create a new call to one call party using the address information provided by the SCF (e.g. wake-up call).

6.3.8.1 Successful call set-up

Note that optional parameters may be absent, i.e. they are only mapped, if received.

TSS /SCP_IC/SCS	TP ISN_V_8_1_1	Reference ITU-T Recommendation Q.1600 9.8.1.1.1/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *SCP initiated call - continue operation/mapping of CgPN and CdPN parameters* To verify that the IUT can successfully map the **destinationRoutingAddress** and **callingPartyNumber** of the **InitiateCallAttempt** operation to the **Called party number** and **Calling party number** in the **IAM** message. Pre-test conditions: None				

TSS /SCP_IC/SCS	TP ISN_V_8_1_2	Reference ITU-T Recommendation Q.1600 9.8.1.1.1/Q.1600 as endorsed by [1]	Selection expression	Configuration 1
Test purpose *SCP initiated call - continue operation/mapping of serviceInteractionIndicators parameters* To verify that the IUT can successfully map the **serviceInteractionIndicators** with the call to be diverted indicator set to 'call diversion allowed' of the **InitiateCallAttempt** operation to the **call diversion treatment indicators** parameter of the **IAM** message with the call to be diverted indicator set to 'call diversion allowed'. Note that the other mappings of the serviceInteractionIndicators are not tested. Pre-test conditions: None				

7 Test Coverage

The test purposes defined in this test specification cover most main capabilities of the Interaction between ISUP v3 and INAP specification. A list containing the number of test purposes for the related requirements of the standard / Q.1600 is provided in table 2.

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 test purposes concentrate on valid behaviour. This means that there is no invalid behaviour test purposes specified. An expansion of the invalid behaviour test purposes is left for further study.

Table 2: Number of tests for the Interaction between ISUP v3 and INAP CS1

Item	IN/ISUP procedures	Group	Number of test purposes
1	INAP basic call	INBC	43
2	IN call with SCP request to collect further digits	INCD	2
3	Detection point processing	DPP	11
4	Setup of an IN call to destination B	INB	15
5	User interactive dialogue (in-band)	UID	45
6	Call gapping	CG	7
7	Service filtering	SF	6
8	SCP initiated call	SCP_IC	2
Grand total			131

History

Document history			
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