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Intelligent Network (IN); Intelligent Network Capability Set 1 (CS1); Core Intelligent Network Application Protocol (INAP); Part 9: Test Suite Structure and Test Purposes (TSS&TP) specification for the Service Control Function (SCF) to Service Switching Function (SSF) and the SCF to Specialized Resource Function (SRF) interfaces

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Contents

Foreword

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

This ETS is part 9 of a multi-part standard covering the Capability Set 1 (CS1) core Intelligent Network Protocol (INAP) as described below:

Part 1: "Protocol specification";

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

Part 3: "Test Suite Structure and Test Purposes (TSS&TP) specification for Service Switching Function (SSF) and Specialized Resource Function (SRF)";

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

Part 5: "Protocol specification for the Service Control Function (SCF) - Service Data Function (SDF) interface";

Part 6: "PICS proforma specification for the SCF-SDF interface";

Part 7: Test Suite Structure and Test Purposes (TSS&TP) specification for the Service Control Function (SCF) - Service Data Function (SDF) interface (DE/SPS-03032-3);

Part 9: Test Suite Structure and Test Purposes (TSS&TP) specification for the Service Control Function (SCF) - SCF-SSF and SCF-SRF interfaces.

NOTE: Part 8 is currently not planned.

Proposed transposition dates	
Date of latest announcement of this ETS (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

Introduction

In order to be able to perform conformance testing for the Core INAP SCF-SSF and SCF-SRF interface, a test suite needs to be available, giving detailed and unambiguous test cases that can be used for the conformance test campaign.

Before any test suite can be developed, it needs to be known which functional aspects needs to be tested, and what is the structure of the test suite. This ETS contains the test purposes and the test suite structure.

For testing Core INAP SCF-SSF and SCF-SRF interface some kind of test functionality needs to be available that replaces the normal Service Logic and that configures the SCF's behaviour in a desired and predictable way. This test functionality may be implemented in various ways like a test responder or by creating a test service using Global Service Logic. In order to assist the implementors of such test functionality, examples are given of the latter possibility in annex B.

The test purposes in this ETS use a particular field of an operation to "trigger" the SCF to perform a particular behaviour e.g. to issue an operation to the SSF. The field "calledPartyNumber" of the "InitialDP" operation shall be used for this purpose.

Clause 1 defines the scope in which this ETS can be placed. In clause 2 the references to other relevant literature are given followed by a list of definitions and abbreviations in clause 3.

In clause 4 the Test Suite Structure is described. This includes a description of all defined branches in the Test Suite Structure as well as an overview of the possible physical scenarios on which the Test Purposes are based.

Clause 5 contains all the Test Purposes, each one consisting of a preamble, the actual test purpose, and a postamble.

In annex A a list is given of all values for the calledPartyNumber field of the InitialDP operation that are used to remotely control the behaviour of the test functionality that replaces the normal Service Logic.

Annex B gives examples of how the needed test functionality at the Service Logic side of the SCF can be implemented using Service Logic building blocks.

Finally, annex C gives an overview of possible Abstract Test Methods that can be used to execute the test cases derived from the Test Purposes as described in this ETS.

Annex A is a normative annex that needs to be used by implementors of an Abstract Test Case while annex B and annex C informative only. The contents of annex B and C are rather meant to advise than to restrict the users of the ETS.

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1 Scope

This European Telecommunication Standard (ETS) specifies the Test Suite Structure & Test Purposes (TSS&TP) for the Service Control Function (SCF) to Service Switching Function (SSF) and the SCF to Specialized Resource Function (SRF) interfaces of the Core Intelligent Network Application Protocol (Core INAP) Capability Set 1 (CS-1) according to ETS 300 374-1 [1].

The ISO standards for the methodology of conformance testing ISO/IEC 9646 Part 1 [3] and ISO/IEC 9646 Part 2 [4] are used as the basis for the test methodology.

2 Normative references

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

[1] ETS 300 374-1 (1994): "Intelligent Network (IN); Intelligent Network Capability Set 1 (CS1); Core Intelligent Network Application Protocol (INAP) Part 1: Protocol specification".

[2] ETS 300 374-2 (1996): "Intelligent Network (IN); Intelligent Network Capability Set 1 (CS1); Core Intelligent Network Application Protocol (INAP); Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification for Service Switching Function (SSF), Specialized Resource Function (SRF) and Service Control Function (SCF)".

[3] ISO/IEC 9646-1 (1995): "Information technology - Open Systems Interconnection - Conformance Testing Methodology and Framework - Part 1: General concepts".

[4] ISO/IEC 9646-2 (1995): "Information technology - Open Systems Interconnection - Conformance Testing Methodology and Framework - Part 2: Abstract Test Suite Specification".

3 Definitions and abbreviations

3.1 Definitions

For the definitions of Implementation Under Test (IUT), System Under Test (SUT), Abstract Test Suite (ATS) and Protocol Implementation Conformance Statement (PICS) refer to ISO/IEC 9646-1 [3].

3.2 Abbreviations

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

aC	SCF assist with relay handling
ATM	Abstract Test Method
ATS	Abstract Test Suite
bC	Basic SCF
BI	Invalid Behaviour test
BIT	Basic Interconnercion Test
BO	inOpportune Behaviour test
BV	Valid Behaviour test
CA	CApability test
EDP-N	Event Detection Point - Notification
EDP-R	Event Detection Point - Request
ETS	European Telecommunication Standard
FE	Functional Entity
FSM	Finite State Machine
GSL	Global Service Logic

IN	Intelligent Network
INAP	Intelligent Network Application Protocol
IP	Intelligent Peripheral
ISO	International Standard Organisation
IUT	Implementation Under Test
LT	Lower Tester
pC	SCF direct path IP handling
PCO	Point of Control and Observation
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
rC	SCF-SSF relay handling
SCF	Service Control Functions
SCME	Service Control Management Entity
SCP	Service Control Point
SDF	Service Data Function
SDP	Service Data Point
SL	Service Logic
SRF	Specialized Resource Function
SSF	Service Switching Function
SSP	Service Switching Point
SUT	System Under Test
TCAP	Transaction Capabilities Application Part
TMP	Test Management Protocol
TP	Test Purpose
TSS	Test Suite Structure
UT	Upper Tester

4 Test Suite Structure (TSS)

4.1 Test Groups

4.1.1 Interface Groups

In the test suite structure 4 interface groups shall be used that are described in the following subclauses.

4.1.1.1 Basic SCF (bC)

Regarding ETS 300 374-1 [1], clauses 7, 8, 9 and 10, the defined test purposes cover the INAP procedures at the SCP for the basic functions. The basic functions (bC) are the INAP procedures at the SCP for the following operations:

- ActivateServiceFiltering
- ActivityTest
- ApplyCharging
- ApplyChargingReport
- CallGap
- CallInformationRequest
- CallInformationReport
- CollectInformation
- Connect
- Continue
- EventNotificationCharging
- EventReportBCSM
- FurnishChargingInformation
- InitialDP
- InitiateCallAttempt
- ReleaseCall
- RequestNotificationChargingEvent
- RequestReportBCSMEvent
- ResetTimer
- SendChargingInformation
- ServiceFilteringResponse

4.1.1.2 SCF-SSF relay handling (rC)

Regarding ETS 300 374-1 [1], clauses 7, 8, 9 and 10, the defined test purposes cover the INAP procedures at the SCP needed in addition to the basic functions (bC) for the interaction with the SSF relay. These are the procedures for the following operations:

- Cancel (PlayAnnouncement, PromptAndCollectUserInformation)
- ConnectToResource
- DisconnectForwardConnection
- PlayAnnouncement
- PrompAndCollectUserInformation
- SpecializedResourceReport

4.1.1.3 SCF assist with relay handling (aC)

Regarding ETS 300 374-1 [1], clauses 7, 8, 9 and 10, the defined test purposes cover the INAP procedures at the SCP needed in addition to the basic functions (bC) and the relay functions (rC) for the interaction with the assisting SSF with relay handling. These are the procedures for the following operations:

- AssistRequestInstructions
- EstablishTemporaryConnection

4.1.1.4 SCF direct path IP handling (pC)

Regarding ETS 300 374-1 [1], clauses 7, 8, 9 and 10, the defined test purposes cover the INAP procedures at the SCP needed in addition to the basic functions (bC) for the interaction with the IP in case of a direct path. These are the procedures for the following operations:

- AssistRequestInstructions
- Cancel
- DisconnectForwardConnection
- EstablishTemporaryConnection
- PlayAnnouncement
- PromptAndCollectUserInformation
- SpecializedResourceReport

4.1.2 Main Test Groups

For each interface group the test suite structure is subdivided into *main test groups*. Each main test group contains test cases which test the IUT's capabilities, valid behaviour, invalid behaviour and inopportune behaviour respectively as described in the following subclauses.

4.1.2.1 Basic interconnection tests (BIT)

Basic interconnection tests form the basis of the other tests in the test suite and therefore have to be executed previously to all the other tests. The tests assure that the IUT provides the basic functionality to set up connections that shall be used in the rest of the test suite.

4.1.2.2 Capability tests (CA)

Capability testing provides a limited testing to ascertain the capabilities stated in the PICS can be observed.

4.1.2.3 Valid behaviour tests (BV)

State transitions as defined in ETS 300 374-1 [1] are considered valid. The test purposes in the valid behaviour test group cover the verification of the procedures of the SCF-FSM and the SCME-FSM. The messages and their contents offered to the IUT are syntactically and semantically valid.

4.1.2.4 Invalid behaviour tests (BI)

The test purposes in this test group verify that the IUT reacts correctly on receiving messages that are syntactically incorrect.

4.1.2.5 Inopportune behaviour tests (BO)

The test purposes in this test group verify that the IUT reacts correctly in the case inopportune protocol events occur. Such events are syntactically correct but occur when not expected.

4.1.3 State Groups

The test cases in every main test group shall be divided into *state groups* depending on which state in the SCF FSM or SCME FSM is tested. Within such a state group another hierarchy exists that divides the test cases depending on the kind of event that is issued to the IUT just before to the last event of a test purpose on which the test verdict shall be based. The following four classes of events are distinguished:

Network event: TCAP message has to be issued to the IUT to perform the test case.

Operation: operation has to be issued to the IUT to perform the test case.

Operation error: message containing an operation error has to be issued to the IUT to perform the test case.

SL-event: Service Logic event has to be issued to the IUT to perform the test case.

When mentioning *operations* INAP operations are referred to and *operation errors* are error messages that are issued due to reception of a syntactically or semantically erroneous INAP operation. The events issued to the IUT by the Service Logic are called *SL-events*.

4.2 Physical scenarios

The test suite structure is based on the mapping of functional entities (FE) to physical entities (PE) given in table 1. In the table the following abbreviations are used:

O Optional;
M Mandatory;
N/A Not Applicable.

Table 1: Mapping FE to PE

	FE			
PE	**SRF**	**SSF**	**SCF**	**SDF**
SSP	O	M	N/A	N/A
SCP	N/A	N/A	M	O
SDP	N/A	N/A	N/A	M
IP	M	N/A	N/A	N/A

The application of the test suite according to subclause 4.1 depends on the physical scenario in which the SCP exists. For a number of different example physical scenarios the application of the test suite is given in the figures 1 to 4, shown below.

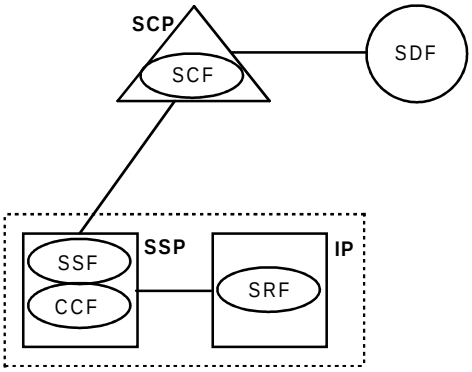


Figure 1: Example for SCP with single SSP and (non)integrated SRF

Applied test suite groups for SCP testing in physical scenario as in figure 1: bC + rC.

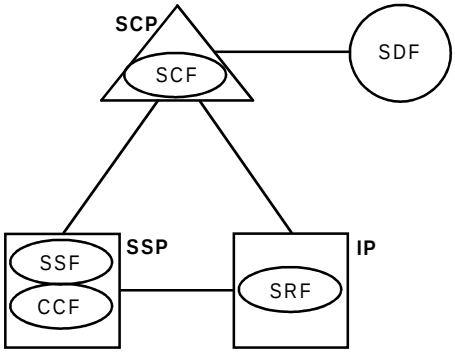


Figure 2: Example for direct path SCP - IP

Applied test suite groups for SCP testing in physical scenario as shown in figure 2: bC + pC.

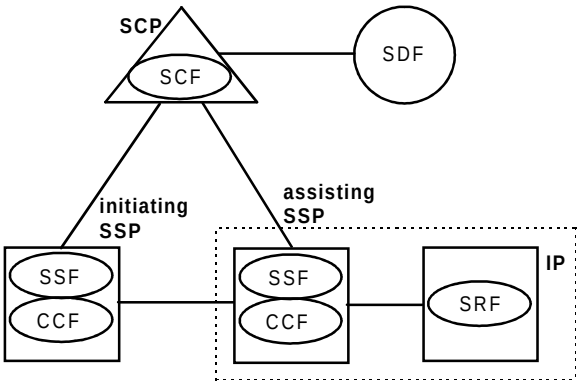


Figure 3: Example for SCP with an initiating and an assisting SSP

Applied test suite groups for SCP testing: bC + aC + rC.

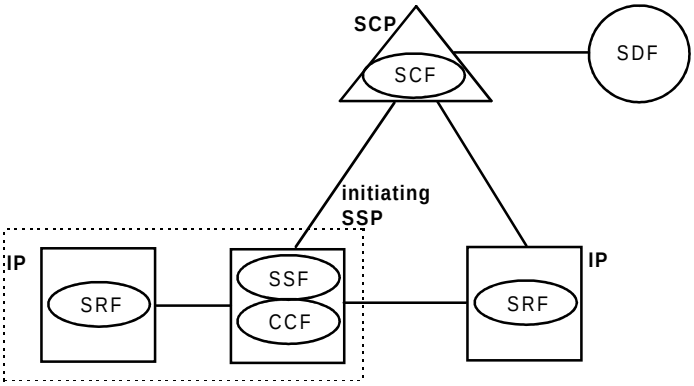


Figure 4: Example for SCP with initiating SSP with relay

Applied test suite groups for SCP testing: bC + rC + pC.

4.3 Overview

Table 2 shows the structure of the test suite for the SCF. The states mentioned in the column *State* correspond with the state names given in ETS 300 374-1 [1].

Table 2: Test purpose classes in TSS

SUT	Interface	Category	State	Group
SCP	SCF-SSF	BIT	State 1	Operation
	bC: SCP basic functions	CA/BV	State 1	Operation
				SL-event
			State 2.1	Operation error
				SL-event
			State 2.2	Network event
			State 2.2.1	SL-event
			State 2.2.2	Operation
				SL-event
			State 2.3	Operation
				Operation error
			State M3	SL-event
			State M4	Operation
				Operation error
		BI	State 1	Operation
			State 2.3	Operation
		BO	State 1	Operation
			State 2.1	Operation
			State 2.3	Operation
	SCF-SSF-SRF	BV	State 3.1	SL-event
	rC: SSF relay		State 4.1	Network event
				Operation
				Return result
				Operation error
				SL event
		BI	-	-

(continued)

Table 2 (concluded): Test purpose classes in TSS

SUT	Interface	Category	State	Group
		BO	State 3.1	Operation
			State 4.1	Operation
	SCF-SSF-SRF	BV	State 1	Operation
	aC: SCF assist			Operation error
	hand off		State 3.1	SL-event
			State 3.2	Network event
				Operation
				Operation error
		BI	State 1	Operation
			State 3.2	Operation
		BO	State 3.2	Operation
	SCF-SRF	BV	State 3.1	SL-event
	pC: direct path IP handling.		State 3.2	Network event
				Operation
			State 4.1	Network event
				Operation
				Operation error
				SL-event
		BI	State 3.2	Operation
		BO	State 4.1	Operation

4.4 Timers of ATS

In this subclause the timers and counters used in the ATS shall be listed with their minimum ("min") and maximum ("max") limits. The timer values contain some additional tolerances for delays caused by test simulators. Therefore a bigger timer tolerance is given than defined in ETS 300 374-1 [1]:

- Minimum value of ATS timer = minimum ETS timer;
- Maximum value of ATS timer = maximum ETS timer * 1.2.

Table 3 gives the identified timers used in the ATS and the references to ETS 300 374-1 [1].

Table 3: Timer values

ETS timer name	Reference to ETS	ATS timer name	ATS timer value (s)
T_{SSF}	not defined	T_{SSFmin} T_{SSFmax}	1)
T_{SRF}	not defined	T_{SRFmin} T_{SRFmax}	1)
$T_{SCF-SSF}$	not defined	$T_{SCF-SSFmin}$ $T_{SCF-SSFmax}$	1)
$T_{ActTest}$	not defined	$T_{ActTestmin}$ $T_{ActTestmax}$	1)
$T_{ASSIST/HAND-OFF}$	not defined	$T_{ASSIST/HAND-OFFmin}$ $T_{ASSIST/HAND-OFFmax}$	1)
T_{asf}	6.1	T_{asfmin} T_{asfmax}	1 72
T_{at}	6.1	T_{atmin} T_{atmax}	1 12
T_{ac}	6.1	T_{acmin} T_{acmax}	1 12
T_{acr}	6.1	T_{acrmin} T_{acrmax}	1 12
T_{ari}	6.1	T_{arimin} T_{arimax}	1 12
T_{cg}	6.1	T_{cgmin} T_{cgmax}	1 12
T_{cirp}	6.1	$T_{cirpmin}$ $T_{cirpmax}$	1 12
T_{cirq}	6.1	$T_{cirqmin}$ $T_{cirqmax}$	1 12
T_{can}	6.1	T_{canmin} T_{canmax}	1 12
T_{ci}	6.1	T_{cimin} T_{cimax}	1 72
T_{con}	6.1	T_{conmin} T_{conmax}	1 12
T_{ctr}	6.1	T_{ctrmin} T_{ctrmax}	1 12
T_{cue}	6.1	T_{cuemin} T_{cuemax}	1 12
T_{dfc}	6.1	T_{dfcmin} T_{dfcmax}	1 12
T_{etc}	6.1	T_{etcmin} T_{etcmax}	1 72

(continued)

1) NOTE: the value of this timer is given in [2]

Table 3 (concluded): Timer values

ETS timer name	Reference to ETS	ATS timer name	ATS timer value (s)
T_{enc}	6.1	T_{encmin} T_{encmax}	1 12
T_{erb}	6.1	T_{erbmin} T_{eebmax}	1 12
T_{fci}	6.1	T_{fcimin} T_{fcimax}	1 12
T_{idp}	6.1	T_{idpmin} T_{idpmax}	1 12
T_{ica}	6.1	T_{ica} T_{ica}	1 12
T_{rc}	6.1	T_{rcmin} T_{rcmax}	1 12
T_{rnc}	6.1	T_{rncmin} T_{rncmax}	1 12
T_{rrb}	6.1	T_{rrbmin} T_{rrbmax}	1 12
T_{rt}	6.1	T_{rtmin} T_{rtmax}	1 12
T_{sci}	6.1	T_{scimin} T_{scimax}	1 12
T_{sfr}	6.1	T_{sfrmin} T_{sfrmax}	1 12
T_{pa}	6.1	T_{pamin} T_{pamax}	1 2160
T_{pc}	6.1	T_{pcmin} T_{pcmax}	1 2160
T_{srr}	6.1	T_{srrmin} T_{srrmax}	1 12

5 Test Purposes (TP)

In this clause the necessary test purposes for testing the Core INAP SCF-SSF and SCF-SRF interfaces are described. Every test purpose is situated in a subclause from which its type of interface, category and starting FSM state can be derived.

Subclause 5.1 contains a naming convention. The unique identifier of each test purpose is composed conform to this naming convention. In subclause 5.2 a short description of the test method and the test purpose definitions are given.

5.1 Test purpose naming convention

The identifier of each TP is built according to the naming convention given below that is based on the scheme given in ISO/IEC 9646-1 [3].

Every TP identifier is of the form:

IN<t><c><s><g><nn>

where:

<t> indicates the type of interface:

1: SCP: Basic SCF (bC).
2: SCP: SCF-SSF relay handling (rC).
3: SCP: SCF assist with relay handling (aC).
4: SCP: SCF direct path IP handling (pC).

<c> indicates the TP's main test group:

1: BIT, Basic Interconnection Tests.
2: CA, capability tests.
3: BV, valid behaviour tests.
4: BI, invalid behaviour tests.
5: BO, inopportune behaviour tests.

<s> indicates the state of the SCF FSM or SCME FSM that is the starting point of the test:

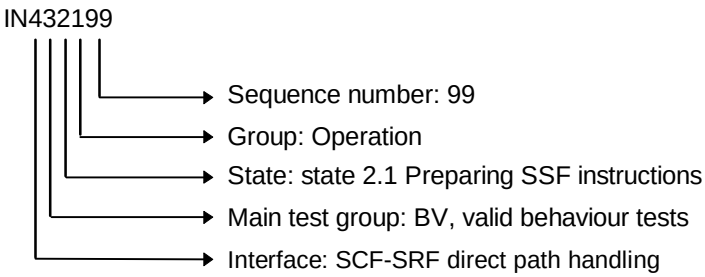
1: State 1, Idle.
2: State 2.1, Preparing SSF instructions - Preparing SSF instructions.
3: State 2.2, Preparing SSF instructions - Queuing FSM.
4: State 2.2.1, Preparing SSF instructions - Queuing FSM - Preparing SSF instructions.
5: State 2.2.2, Preparing SSF instructions - Queuing FSM - Queuing.
6: State 2.3, Preparing SSF instructions - Waiting for notification or request.
7: State 3.1, Routing to resource - Determine mode.
8: State 3.2, Routing to resource - Waiting for assist request instructions.
9: State 4.1, User interaction - Waiting for response from the SRF.
A: State 5, SDF request idle. (not used).
B: State 6, Waiting for SDF response. (not used)
C: State M3, Service filtering idle.
D: State M4, Waiting for SSF service filtering response.

<g> indicates the group:

0: Network event.
1: Operation.
2: Return result.
3: Operation error.
4: Service Logic (SL) event.

<nn> deNOTEs a sequential number (01-99).

EXAMPLE**:** An example can be an imaginary test purpose with the TP identifier IN 432199:



5.2 Test purposes

5.2.1 General description of the test methodology

Most of the test purposes designed for testing the Core INAP SCF-SSF and SCF-SRF interfaces rely on the possibility to provoke a particular behaviour from the SCF. This means that the SCF shall be triggered in such a way that an expected message is sent back to the SSF. For example, the tester may wish to verify whether the SCF is able to issue the operation RequestReportBCSMEvent (RRBE) operation to the SSF after having received an InitialDP operation. This requires a functionality at the Service Logic (SL) side of the SCF to "trigger" the SCF Core INAP functionality and issue some events to the SCF which cause the SCF to send an RRBE operation to the SSF.

It has become clear that some kind of functionality at the Service Logic side of the SCF is required that shall enable testing. Although this functionality can be implemented in various ways (e.g. test responder, official test service built of Service Logic building blocks), the functionality shall be referred to as *Service Logic*.

The Service Logic may be some specific Service Logic i.e. a Service Logic designed for the enabling a particular IN service, or generic Service Logic i.e. Service Logic that are designed for testing the SCF functionality having no particular IN service in mind. All test purposes have been written having in mind the use of a generic Service Logic. In order to provoke the desired behaviour, the SCF first receives the InitialDP operation. In this InitialDP operation, a particular parameter shall be chosen to determine the behaviour of the SCF in order to receive back (a) particular operation(s). For this purpose, it is mandatory that the Core INAP interface between SCF and SSF shall support the parameter CalledPartyNumber of the InitialDP operation.

In the test purposes the parameter CalledPartyNumber is used; the values of the parameter CalledPartyNumber of the InitialDP operations have symbolic names (see annex A), indicating the behaviour that shall be provoked from the SCF.

EXAMPLE**:** See also figure 5.

In order to provoke the SCF to send the operation RRBE to the SSF, the value *SL_RequestReportBCSMEvent* shall be used for the parameter CalledPartyNumber of the InitialDP operation.

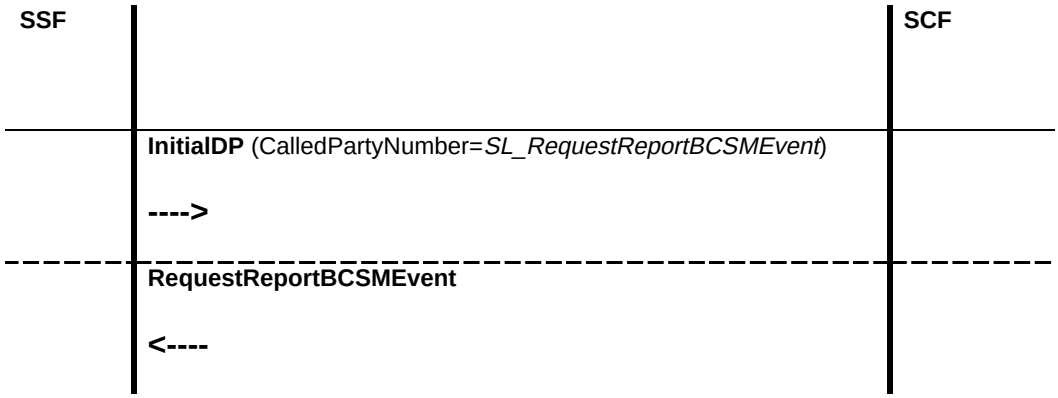


Figure 5: Example of a Message Sequence Chart

In every TP in this ETS, the values of the CalledPartyNumber parameter that has to be used shall be mentioned in either the preamble or the test body of the TP. In order to concentrate on the CalledPartyNumber value, the mandatory ServiceKey parameter of the InitialDP operation shall not explicitly be mentioned in every TP. Unless explicitly mentioned otherwise, it is assumed that all InitialDP operations contain a ServiceKey parameter with a valid value.

This ETS does not give any requirements concerning the design and implementation of the Generic Service Logic to be used for testing. The only requirement given at this point is that the Generic Service Logic should be able to support the provocation of the behaviour of an SCF using the CalledPartyNumber parameter of the InitialDP operation. In annex C, some information is given about how the test service could in practice be implemented.

In annex A an overview can be found of the symbolic names used for the parameter values of CalledPartyNumber. The order of appearance in this table corresponds with the order of appearance in the remainder of the ETS.

5.2.2 Basic SCF (bC)

5.2.2.1 Basic Interconnection Test (BIT)

Preamble 1: The IUT is in the state Idle (State 1).

Postamble: TC_U_ABORT.

Testbodies:

IN111101 [1], 7.2.5.1	Ensure that the IUT is able to receive operation InitialDP with serviceKey, calledPartyNumber from SSF and does return any operation or network event.

5.2.2.2 Capability (CA)

Since by only performing CA tests no conformance to a specification can be claimed it is decided not to separately identify CA tests. The CA tests are incorporated into the Valid Behaviour tests as described in the next subclause.

5.2.2.3 Valid Behaviour (BV)

Preamble 2: The IUT is in the idle state (State 1).

Postamble: TC_U_ABORT.

Testbodies:

IN131101 [1], 7.2.5.1	Ensure that the IUT is able to receive operation InitialDP with serviceKey and calledPartyNumber from SSF and does not return any error or reject components within operation time.
IN131102 [1], 7.2.5.1	Ensure that the IUT is able to receive operation InitialDP with serviceKey and callingPartyNumber from SSF and does not return any error or reject components within operation time.
IN131103 [1], 7.2.5.1	Ensure that the IUT is able to receive operation InitialDP with serviceKey and callingPartysCategory from SSF and does not return any error or reject components within operation time.
IN131104 [1], 7.2.5.1	Ensure that the IUT is able to receive operation InitialDP with serviceKey and locationNumber from SSF and does not return any error or reject components within operation time.
IN131105 [1], 7.2.5.1	Ensure that the IUT is able to receive operation InitialDP with serviceKey and originalCalledPartyID, redirectingPartyID, redirectionInformation from SSF and does not return any error or reject components within operation time.
IN131106 [1], 7.2.5.1	Ensure that the IUT is able to receive operation InitialDP with serviceKey and forwardCallIndicators from SSF and does not return any error or reject components within operation time.
IN131107 [1], 7.2.5.1	Ensure that the IUT is able to receive operation InitialDP with serviceKey and highLayerCompatibility, bearerCapability from SSF and does not return any error or reject components within operation time.
IN131108 [1], 7.2.5.1	Ensure that the IUT is able to receive operation InitialDP with serviceKey and additionalCallingPartyNumber from SSF and does not return any error or reject components within operation time.
IN131109 [1], 7.2.5.1	Ensure that the IUT is able to receive operation InitialDP with serviceKey and eventTypeBCSM from SSF and does not return any error or reject components within operation time.
IN131110 [1], 7.2.5.1	Ensure that the IUT is able to receive operation InitialDP with serviceKey and iPSSPCapabilities from SSF and does not return any error or reject components within operation time.
IN131111 [1], 7.2.5.1	Ensure that the IUT is able to receive operation InitialDP with serviceKey and iPAvailable from SSF and does not return any error or reject components within operation time.
IN131112 [1], 7.2.5.1	Ensure that the IUT is able to receive operation InitialDP with serviceKey and extensions (with criticality being "ignore") from SSF and does not return any error or reject components within operation time.
IN131113 [1], 7.2.5.1	Ensure that the IUT is able to receive operation InitialDP with serviceKey and serviceInteractionIndicators from SSF and does not return any error or reject components within operation time.
IN131114 [1], 7.2.5.1	Ensure that the IUT is able to receive operation InitialDP with serviceKey and cGEncountered from SSF and does not return any error or reject components within operation time.
IN131401 [1], 7.2.5.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_InitiateCallAttempt_1* starts a new dialogue by issuing an InitiateCallAttempt operation with at least destinationRoutingAddress to SSF.

IN131402 [1], 7.2.5.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_InitiateCallAttempt_2* starts a new dialogue by issuing an InitiateCallAttempt operation with at least destinationRoutingAddress and alertingPattern to SSF.
IN131403 [1], 7.2.5.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_InitiateCallAttempt_3* starts a new dialogue by issuing an InitiateCallAttempt operation with at least destinationRoutingAddress and extensions (with criticallity being "ignore") to SSF.
IN131404 [1], 7.2.5.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_InitiateCallAttempt_4* starts a new dialogue by issuing an InitiateCallAttempt operation with at least destinationRoutingAddress and serviceInteractionIndicators to SSF.
IN131405 [1], 7.2.5.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_InitiateCallAttempt_5* starts a new dialogue by issuing an InitiateCallAttempt operation with at least destinationRoutingAddress and callingPartyNumber to SSF.
Preamble 3:	The IUT transits to Preparing SSF Instructions State (State 2.1) by issuing an InitialDP with parameter calledPartyNumber having the value *SL_InitiateCallAttempt* to the IUT, and the IUT issues an InitiateCallAttempt operation to the SSF.
Postamble:	TC_U_ABORT.
Testbodies:	
IN132301 [1], 7.2.5.1	Ensure that the IUT is able to receive operation error MissingParameter and does not reject components within operation time.
IN132302 [1], 7.2.5.1	Ensure that the IUT is able to receive operation error SystemFailure and does not reject components within operation time.
IN132303 [1], 7.2.5.1	Ensure that the IUT is able to receive operation error Taskrefused and does not reject components within operation time.
IN132304 [1], 7.2.5.1	Ensure that the IUT is able to receive operation error UnexpectedDataValue and does not reject components within operation time.
IN132305 [1], 7.2.5.1	Ensure that the IUT is able to receive operation error UnexpectedParameter and does not reject components within operation time.
Preamble 4:	The IUT transits to the Prepare SSF Instructions State (State 2.1) by issuing an InitialDP with parameter calledPartyNumber having the value as indicated in the testbody to the IUT.
Postamble:	TC_U_ABORT
Testbodies:	
IN132401 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_ApplyCharging issues an ApplyCharging operation to the SSF.
IN132402 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_CallInformationRequest issues a CallInformationRequest operation to the SSF.

IN132403 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_FurnishChargingInformation issues a FurnishChargingInformation operation to the SSF.
IN132404 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_RequestReportBCSMEvent issues a RequestReportBCSMEvent operation to the SSF.
IN132405 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_RequestNotificationChargingEvent issues a RequestNotificationChargingEvent operation to the SSF.
IN132406 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_ResetTimer issues a ResetTimer operation with at least timerValue to the SSF.
IN132407 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SendChargingInformation issues a SendChargingInformation operation to the SSF.
IN132408 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_ReqRBCSME_Cancel issues the operation RequestReportBCSMEvent, followed by operation Cancel to the SSF.
IN132409 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_FurnishChargingInformation_ReleaseCall (Monitoring not req.) issues the FurnishChargingInformation operation, followed by ReleaseCall operation to SSF.
IN132410 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SendChargingInformation_ReleaseCall (Monitoring not req.) issues a SendChargingInformation operation, followed by ReleaseCall operation to SSF.
IN132411 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_ReqRBCSME_Cancel_ReleaseCall (Monitoring not req.) issues the RequestReportBCSMEvent followed by a Cancel operation, followed by ReleaseCall operation to SSF.
IN132412 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_RequestReportBCSMEvent_ReleaseCall (Monitoring not req.) issues a RequestReportBCSMEvent operation, followed by ReleaseCall operation to SSF.
IN132413 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_Connect_1 (Monitoring not req.) issues a Connect operation with at least destinationRoutingAddress to SSF.
IN132414 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_Connect_2 (Monitoring not req.) issues a Connect operation with at least destinationRoutingAddress and alertingPattern to SSF.
IN132415 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_Connect_3 (Monitoring not req.) issues a Connect operation with at least destinationRoutingAddress and routeList to SSF.

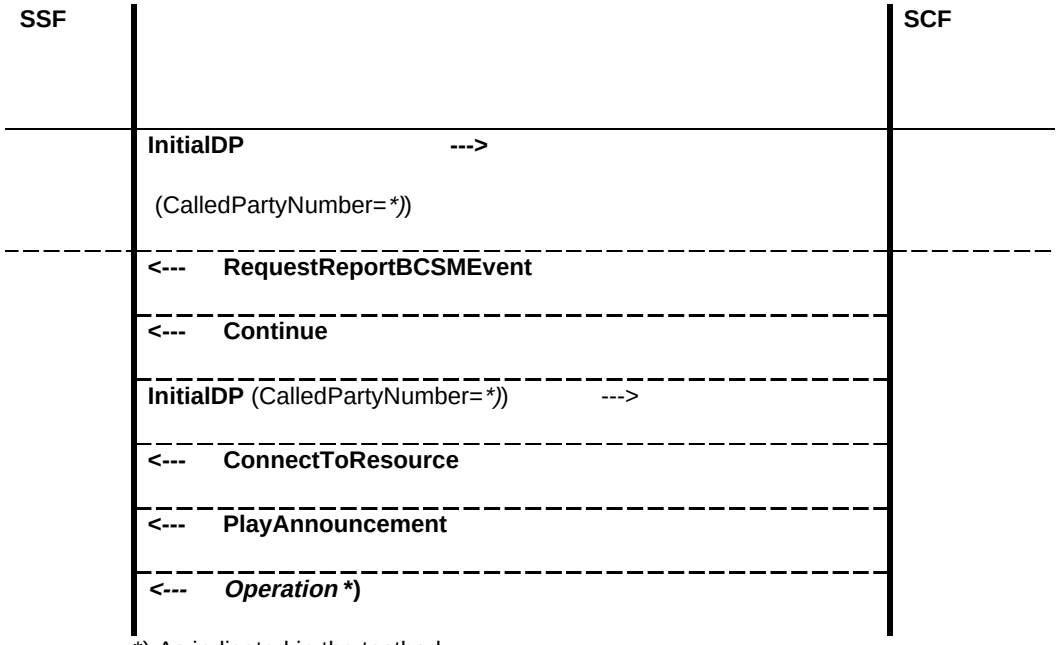
IN132416 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_Connect_4 (Monitoring not req.) issues a Connect operation with at least destinationRoutingAddress and cutAndPaste to SSF.
IN132417 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_Connect_5 (Monitoring not req.) issues a Connect operation with at least destinationRoutingAddress, originalCalledPartyID, redirectingPartyID and redirectionInformation to SSF.
IN132418 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_Connect_6 (Monitoring not req.) issues a Connect operation with at least destinationRoutingAddress, callingPartyNumber and callingPartysCategory to SSF.
IN132419 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_Connect_7 (Monitoring not req.) issues a Connect operation with at least destinationRoutingAddress and extensions to SSF.
IN132420 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_Connect_8 (Monitoring not req.) issues a Connect operation with at least destinationRoutingAddress and serviceInteractionIndicators to SSF.
IN132421 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_FurnishChargingInformation_Connect (Monitoring not req.) issues the FurnishChargingInformation operation, followed by Connect operation to SSF.
IN132422 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SendChargingInformation_Connect (Monitoring not req.) issues the SendChargingInformation operation, followed by Connect operation to SSF.
IN132423 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_ReqRBCSME_Cancel_Connect (Monitoring not req.) issues the RequestReportBCSMEvent followed by Cancel operation, followed by Connect operation to SSF.
IN132424 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_RequestReportBCSMEvent_Connect (Monitoring not req.) issues the RequestReportBCSMEvent operation, followed by Connect operation to SSF.
IN132425 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_FurnishChargingInformation_Continue (Monitoring not req.) issues the FurnishChargingInformation operation, followed by Continue operation to SSF.
IN132426 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SendChargingInformation_Continue (Monitoring not req.) issues the SendChargingInformation operation, followed by Continue operation to SSF.
IN132427 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_ReqRBCSME_Cancel_Continue (Monitoring not req.) issues the RequestReportBCSMEvent followed by Cancel operation, followed by Continue operation to SSF.

IN132428 [1], 7.2.5.2.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_RequestReportBCSMEvent_Continue (Monitoring not req.) issues the RequestReportBCSMEvent operation with monitorMode having the value "transparent", followed by Continue operation to SSF.
IN132429 [1], 7.2.4	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_CallGap_1 and sends a CallGap operation with at least gapCriteria being calledAddressValue gapindicators to the SSF.
IN132430 [1], 7.2.4	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_CallGap_2 and sends a CallGap operation with at least gapCriteria being gapOnService gapindicators to the SSF.
IN132431 [1], 7.2.4	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_CallGap_3 and sends a CallGap operation with at least gapCriteria being calledAddressAndService gapindicators to the SSF.
IN132432 [1], 7.2.4	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_CallGap_4 and sends a CallGap operation with at least gapCriteria being callingAddressAndService including callingAddressValue and serviceKey gapindicators to the SSF.
IN132433 [1], 7.2.4	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_CallGap_5 and sends a CallGap operation with at least gapCriteria gapindicators controlType to the SSF.
IN132434 [1], 7.2.4	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_CallGap_6 and sends a CallGap operation with at least gapCriteria gapindicators gapTreatment being informationToSend to the SSF.
IN132435 [1], 7.2.4	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_CallGap_7 and sends a CallGap operation with at least gapCriteria gapindicators gapTreatment being releaseCause to the SSF.
IN132436 [1], 7.2.4	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_CallGap_8 and sends a CallGap operation with at least gapCriteria gapindicators gapTreatment being both to the SSF.
IN132437 [1], 7.2.4	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_CallGap_9 and sends a CallGap operation with at least gapCriteria gapindicators extensions to the SSF.

Preamble 5:	The IUT transits to the Prepare SSF Instructions State (State 2.2.1) by issuing an InitialDP with parameter calledPartyNumber having the value *SL_Ready_for_Queueing_Processing* the IUT.
Postamble:	-
Testbody:	
IN133001 [1], 7.2.5.2.2	Ensure that the IUT is able to receive a TC_U_ABORT message from SSF and does not return any error or reject components within operation time.

Preamble 6: First InitialDP operation is sent with parameter calledPartyNumber having the value as indicated in the test body. IUT responds with RequestReportBCSMEvent in order to arm an EDP-N on O_Disconnect for leg 2, followed by a Continue operation. Second InitialDP is sent to the IUT with parameter calledPartyNumber having the same value as in the first InitialDP so that the same leg is addressed. The IUT has now transited to the Preparing SSF Instructions State (State 2.2.1). Then the IUT shall respond with ConnectToResource, followed by a PlayAnnouncement.

Postamble: TC_U_ABORT



*) As indicated in the testbody

Testbodies:

IN134401 [1], 7.2.5.2.2.1 Ensure that the IUT after having received the second InitialDP with parameter calledPartyNumber having the value *Ready_For_Q_Non-Call_Proc_Instr_1* sends a ApplyCharging operation to the SSF.

IN134402 [1], 7.2.5.2.2.1 Ensure that the IUT after having received the second InitialDP with parameter calledPartyNumber having the value *Ready_For_Q_Non-Call_Proc_Instr_2* issues the operation CallInformationRequest to the SSF.

IN134403 [1], 7.2.5.2.2.1 Ensure that the IUT after having received the second InitialDP with parameter calledPartyNumber having the value *Ready_For_Q_Non-Call_Proc_Instr_3* issues the operation FurnishChargingInformation to the SSF.

IN134404 [1], 7.2.5.2.2.1 Ensure that the IUT after having received the second InitialDP with parameter calledPartyNumber having the value *Ready_For_Q_Non-Call_Proc_Instr_4* issues the operation RequestReportBCSMEvent to the SSF.

IN134405 [1], 7.2.5.2.2.1 Ensure that the IUT after having received the second InitialDP with parameter calledPartyNumber having the value *Ready_For_Q_Non-Call_Proc_Instr_5* issues the operation RequestNotificationChargingEvent to the SSF.

IN134406 [1], 7.2.5.2.2.1 Ensure that the IUT after having received the second InitialDP with parameter calledPartyNumber having the value *Ready_For_Q_Non-Call_Proc_Instr_6* issues the operation ResetTimer to the SSF.

IN134407
[1], 7.2.5.2.2.1

Ensure that the IUT after having received the second InitialDP with parameter calledPartyNumber having the value *Ready_For_Q_Non-Call_Proc_Instr_7* issues the operation SendChargingInformation to the SSF.

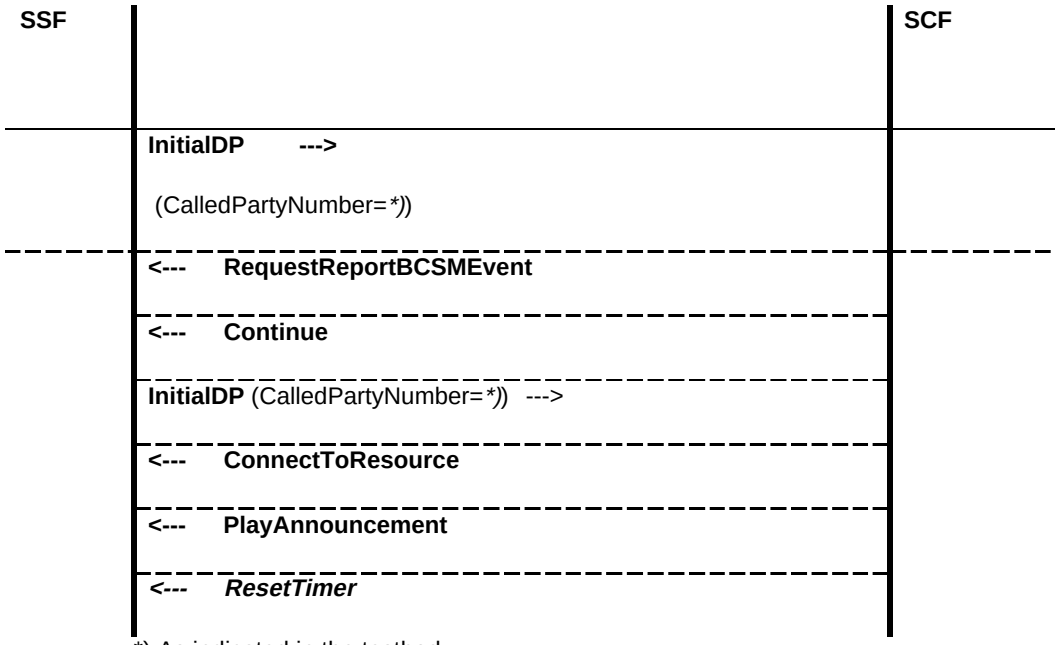
Preamble 7:

Set Max Queue Count=1.

First InitialDP operation is sent with parameter calledPartyNumber having the value as indicated in the test body. IUT responds with RequestReportBCSMEvent in order to arm an EDP-N on O_Disconnect for leg 2, followed by a Continue operation. Second InitialDP is sent to the IUT with parameter calledPartyNumber having the same value as in the first InitialDP so that the same leg is addressed. IUT transits to Queueing state and responds with ConnectToResource, followed by PlayAnnouncement and an operation as indicated in the testbody.

Postamble:

TC_U_ABORT



*) As indicated in the testbody

Testbodies:

IN135101
[1], 7.2.5.2.2.2

Ensure that the IUT is able to receive a TC_U_ABORT from the SSF.

IN135401
[1], 7.2.5.2.2.2

Ensure that the IUT issues the operation ResetTimer to the SSF according to the expiration of timer $T_{SCF-SSF}$.

IN135402
[1], 7.2.5.2.2.2

Send EventReportBCSM operation indicating O_Disconnection on leg 2 to the IUT. Ensure that the IUT after having received the second InitialDP with parameter calledPartyNumber having the value *SL_IdleLineTrunk_ApplyCharging* issues the operation ApplyCharging to the SSF.

IN135403
[1], 7.2.5.2.2.2

After the expiration of the Queueing Timer, ensure that the IUT after having received the second InitialDP with parameter calledPartyNumber having the value *SL_QueueingTimer_ApplyCharging* issues the operation ApplyCharging to the SSF.

Preamble 8:	The IUT transits to the Waiting for Notification or Request State (State 2.3) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_RequestBCSMEvent_Continue_1* to the IUT which causes the IUT to send a RequestBCSMEvent with monitorMode being NotifyAndContinue followed by a Continue operation to the SSF.
Postamble:	TC_U_ABORT
Testbody:	
IN136101 [1], 7.2.5.2.3	Ensure that the IUT when receiving an EventReportBCSM operation with miscCallInfo with messageType being Notification from SSF does not return any error or reject any components within operation time.
Preamble 9:	The IUT transits to the Waiting for Notification or Request State (State 2.3) by issuing an InitialDP operation with parameter calledPartyNumber having the value as indicated in the test body to the IUT which causes the IUT to issue a RequestBCSMEvent operation with monitorMode being Interrupted and a Continue operation to the SSF.
Postamble:	TC_U_ABORT
Testbodies:	
IN136102 [1], 7.2.5.2.3	Ensure that the IUT, after having received an InitialDP with calledPartyNumber having the value *SL_RequestBCSMEvent_Continue_2,* when receiving an EventReportBCSM operation with miscCallInfo with messageType being Request from SSF sends a RequestReportBCSMEvent to the SSF.
IN136103 [1], 7.2.5.2.3	Ensure that the IUT, after having received an InitialDP with calledPartyNumber having the value *SL_RequestBCSMEvent_Continue_3,* when receiving an EventReportBCSM operation with miscCallInfo with messageType being Request from SSF sends a CollectInformation to the SSF.
IN136104 [1], 7.2.5.2.3	Ensure that the IUT, after having received an InitialDP with calledPartyNumber having the value *SL_RequestBCSMEvent_Continue_4,* when receiving an EventReportBCSM operation with miscCallInfo with messageType being Request from SSF sends a Connect to the SSF.
IN136105 [1], 7.2.5.2.3	Ensure that the IUT, after having received an InitialDP with calledPartyNumber having the value *SL_RequestBCSMEvent_Continue_5,* when receiving an EventReportBCSM operation with miscCallInfo with messageType being Request from SSF sends a Continue operation to the SSF.
IN136106 [1], 7.2.5.2.3	Ensure that the IUT, after having received an InitialDP with calledPartyNumber having the value *SL_RequestBCSMEvent_Continue_6,* when receiving an EventReportBCSM operation with miscCallInfo with messageType being Request from SSF sends a ReleaseCall operation to the SSF.
Preamble 10:	The IUT transits to the Waiting for Notification or Request State (State 2.3) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_ApplyCharging_Continue_2* to the IUT which causes the IUT to issue an ApplyCharging operation with sendCalculationToSCPIndication=TRUE and a Continue operation to the SSF.
Postamble:	TC_U_ABORT
Testbody:	
IN136107 [1], 7.2.5.2.3	Ensure that the IUT when receiving an ApplyChargingReport operation from SSF does not return any error or reject any components within operation time.

Preamble 11: The IUT transits to the Waiting for Notification or Request State (State 2.3) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_CallInformationRequest_Continue* to the IUT which causes the IUT to issue a CallInformationRequest and a Continue operation to the SSF.

Postamble: TC_U_ABORT

Testbody:

IN136108 [1], 7.2.5.2.3: Ensure that the IUT when receiving a CallInformationReport operation from SSF does not return any error or reject any components within operation time.

Preamble 12: The IUT transits to the Waiting for Notification or Request State (State 2.3) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_RequestNotificationChargingEvent_ReqRepBCSM* to the IUT which causes the IUT to issue a RequestNotificationChargingEvent operation followed by RequestReportBCSMEvent with monitorMode being NotifyAndContinue to the SSF.

Postamble: TC_U_ABORT

Testbody:

IN136109 [1], 7.2.5.2.3: Ensure that the IUT when receiving an EventNotificationCharging (EDP-R) operation from SSF does not return any error or reject any components within operation time.

Preamble 13: The IUT transits to the Waiting for Notification or Request State (State 2.3) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_ApplyCharging_Continue_1* to the IUT which causes the IUT to issue an ApplyCharging operation followed by Continue operation to the SSF.

Postamble: TC_U_ABORT

Testbodies:

IN136301 [1], 7.2.5.2.3: Ensure that the IUT is able to receive operation error MissingParameter on a previously sent ApplyCharging operation.

IN136302 [1], 7.2.5.2.3: Ensure that the IUT is able to receive operation error ParameterOutOfRange on a previously sent ApplyCharging operation.

IN136303 [1], 7.2.5.2.3: Ensure that the IUT is able to receive operation error SystemFailure on a previously sent ApplyCharging operation.

IN136304 [1], 7.2.5.2.3: Ensure that the IUT is able to receive operation error Taskrefused on a previously sent ApplyCharging operation.

IN136305 [1], 7.2.5.2.3: Ensure that the IUT is able to receive operation error UnexpectedDataValue on a previously sent ApplyCharging operation.

IN136306 [1], 7.2.5.2.3: Ensure that the IUT is able to receive operation error UnexpectedParameter on a previously sent ApplyCharging operation.

Preamble 14: The IUT is in the Waiting for Notification or Request State (State 2.3, monitoring required) by issuing an InitialDP operation with parameter calledPartyNumber as indicated in the testbodies to the SSF.

Postamble: TC_U_ABORT

Testbodies:

IN136106 [1], 7.2.5.2.3	Ensure that the IUT after having sent an InitialDP operation with calledPartyNumber having the value *SL_AC_Continue* is able to receive an ApplyChargingReport operation from SSF and does not return any error or reject components within operation time.
IN136107 [1], 7.2.5.2.3	Ensure that the IUT after having sent an InitialDP operation with calledPartyNumber having the value *SL_CIR_Continue* is able to receive an CallInformationReport operation from SSF and does not return any error or reject components within operation time.
IN136108 [1], 7.2.5.2.3	Ensure that the IUT after having sent an InitialDP operation with calledPartyNumber having the value *SL_RRBE_Continue* is able to receive an EventReportBCSM operation (for EDP_N) from SSF and does not return any error or reject components within operation time.
IN136109 [1], 7.2.5.2.3	Ensure that the IUT after having sent an InitialDP operation with calledPartyNumber having the value *SL_RNCE_Continue* is able to receive an EventNotificationCharging operation from SSF and does not return any error or reject components within operation time.

Preamble 15:	The IUT is in the Service Filtering Idle state (State M3).
Postamble:	TC_U_ABORT

Testbodies:

IN13C401 [1], 7.2.4.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_Filtering_Request_To_SSF_1* issues an ActiviateServiceFiltering operation with at least filteredCallTreatment including sFBillingChargingCharacteristics filteringCharacteristics being interval filteringTimeOut being duration filteringCriteria being serviceKey
IN13C402 [1], 7.2.4.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_Filtering_Request_To_SSF_2* issues an ActiviateServiceFiltering operation with at least filteredCallTreatment including sFBillingChargingCharacteristics filteringCharacteristics being numberOfCalls filteringTimeOut being stopTime filteringCriteria being addressAndService including calledAddressValue and ServiceKey
IN13C403 [1], 7.2.4.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_Filtering_Request_To_SSF_3* issues an ActiviateServiceFiltering operation with at least filteredCallTreatment including sFBillingChargingCharacteristics and informationToSend filteringCharacteristics being interval filteringTimeOut being duration filteringCriteria being ServiceKey
IN13C404 [1], 7.2.4.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_Filtering_Request_To_SSF_4* issues an ActiviateServiceFiltering operation with at least filteredCallTreatment including sFBillingChargingCharacteristics and maximumNumberOfCounters filteringCharacteristics being interval filteringTimeOut being duration filteringCriteria being ServiceKey
IN13C405 [1], 7.2.4.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_Filtering_Request_To_SSF_5* issues an ActiviateServiceFiltering operation with at least filteredCallTreatment including sFBillingChargingCharacteristics and releaseCause filteringCharacteristics being interval filteringTimeOut being duration filteringCriteria being serviceKey

Preamble 16: The IUT transits to the state Waiting for SSF Service Filtering Response (State M4) by issuing an InitialDP with parameter calledPartyNumber having the value *SL_Filtering_Request_To_SSF_1* to the IUT which causes the IUT to issue an ActivateServiceFiltering operation to the SSF.

Postamble: TC_U_ABORT

Testbodies:

IN13D101 [1], 7.2.4.2 Ensure that the IUT when receiving a ServiceFilteringResponse operation from the SSF does not return any error or reject components within operation time.

IN13D301 [1], 7.2.4.2 Ensure that the IUT when receiving a MissingComponent operation error on a previously sent ActivateServiceFiltering operation to an SSF, does not return any TC-error or reject components within operation time.

IN13D302 [1], 7.2.4.2 Ensure that the IUT when receiving a MissingParameter operation error on a previously sent ActivateServiceFiltering operation to an SSF, does not return any TC-error or reject components withinoperation time.

IN13D303 [1], 7.2.4.2 Ensure that the IUT when receiving a SystemFailure operation error on a previously sent ActivateServiceFiltering operation to an SSF, does not return any TC-error or reject components within operation time.

IN13D304 [1], 7.2.4.2 Ensure that the IUT when receiving a TaskRefused operation error on a previously sent ActivateServiceFiltering operation to an SSF, does not return any TC-error or reject components within operation time.

IN13D305 [1], 7.2.4.2 Ensure that the IUT when receiving an UnexpectedDataValue operation error on a previously sent ActivateServiceFiltering operation to an SSF, does not return any TC-error or reject components within operation time.

IN13D306 [1], 7.2.4.2 Ensure that the IUT when receiving an UnexpectedParameter operation error on a previously sent ActivateServiceFiltering operation to an SSF, does not return any TC-error or reject components within operation time.

5.2.2.4 Invalid behaviour (BI)

Preamble 17: IUT is in state Idle (State 1)

Postamble: None

Testbodies:

IN141101 [1], 7.2.5.1, 9.19 Ensure that the IUT after receiving an invalid InitialDP operation notifies the Service Logic and issues operation error MissingCustomerRecord to the SSF.

IN141102 [1], 7.2.5.1, 9.19 Ensure that the IUT after receiving an invalid InitialDP operation notifies the Service Logic and issues operation error MissingParameter to the SSF.

IN141103 [1], 7.2.5.1, 9.19 Ensure that the IUT after receiving an invalid InitialDP operation notifies the Service Logic and issues operation error SystemFailure to the SSF.

IN141104 [1], 7.2.5.1, 9.19 Ensure that the IUT after receiving an invalid InitialDP operation notifies the Service Logic and issues operation error TaskRefused messages to the SSF.

IN141105 [1], 7.2.5.1, 9.19 Ensure that the IUT after receiving an invalid InitialDP operation notifies the Service Logic and issues operation error UnexpectedDataValue to the SSF.

IN141106 [1], 7.2.5.1, 9.19 Ensure that the IUT after receiving an invalid InitialDP operation notifies the Service Logic and issues operation error UnexpectedParameter to the SSF.

Preamble 18: The IUT transits to state Waiting for Notification or Request (State 2.3) by issuing an InitialDP operation with parameter calledPartyNumber having the value SL_ApplyCharging_1 to the IUT which causes the IUT to issue an ApplyCharging operation followed by a Continue operation to the IUT.

Postamble: TC_U_ABORT

Testbodies:

IN146101 [1], 7.2.5.2.3: Ensure that the IUT is able to receive an invalid ApplyChargingReport operation (network specific) and issues operation error MissingParameter to the SSF.

IN146102 [1], 7.2.5.2.3: Ensure that the IUT is able to receive an invalid ApplyChargingReport operation (network specific) and issues operation error ParameterOutOfRange to the SSF.

IN146103 [1], 7.2.5.2.3: Ensure that the IUT is able to receive an invalid ApplyChargingReport operation (network specific) and issues operation error SystemFailure to the SSF.

IN146104 [1], 7.2.5.2.3: Ensure that the IUT is able to receive an invalid ApplyChargingReport operation (network specific) and issues operation error TaskRefused to the SSF.

IN146105 [1], 7.2.5.2.3: Ensure that the IUT is able to receive an invalid ApplyChargingReport operation (network specific) and issues operation error UnexpectedDataValue to the SSF.

IN146106 [1], 7.2.5.2.3: Ensure that the IUT is able to receive an invalid ApplyChargingReport operation (network specific) and issues operation error UnexpectedParameter to the SSF.

Preamble 19: The IUT transits to state Waiting for Notification or Request (State 2.3) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_ApplyCharging_1* to the IUT which causes the IUT to issue an ApplyCharging operation and a Continue operation to the IUT.

Postamble: None

Testbody:

IN146107 [1], 7.2.5.2.3: Ensure that the IUT is able to receive an invalid ApplyChargingReport operation (network specific) and a TC_U_ABORT to the SSF.

5.2.2.5 Inopportune behaviour (BO)

Preamble 20: IUT is in state Idle (State 1)

Postamble: None

Testbody:

IN151101 [1], 7.2.5.1, 9.4: Ensure that the IUT is able to receive a semantically incorrect ApplyChargingReport operation and issues an UnexpectedComponentSequence error to the SSF.

Preamble 21: The IUT transits to state Preparing SSF instructions (State 2.1) by issuing an InitialDP operation to the IUT.

Postamble: TC_U_ABORT

Testbodies:

IN152101 [1], 7.2.5.1, 9.4 — Ensure that the IUT is able to receive a semantically incorrect ApplyChargingReport operation and issues an UnexpectedComponentSequence error to the SSF.

IN152102 [1], 7.2.5.2.1, 9.19 — Ensure that the IUT is able to receive a semantically incorrect InitialDP operation and issues an UnexpectedComponentSequence error to the SSF.

Preamble 22: The IUT transits to state Waiting for Notification or Request (State 2.3) by issuing an InitialDP operation to the IUT with parameter calledPartyNumber having the value *SL_Continue* (an EDP is set).

Postamble: TC_U_ABORT

Testbodies:

IN156101 [1], 7.2.5.2.3, 9.4 — Ensure that the IUT is able to receive a semantically incorrect ApplyChargingReport operation and issues an UnexpectedComponentSequence error to the SSF.

IN156102 [1], 7.2.5.2.3, 9.19 — Ensure that the IUT is able to receive a semantically incorrect InitialDP operation and issues an UnexpectedComponentSequence error to the SSF.

5.2.3 SCF-SSF relay handling (rC)

5.2.3.1 Valid behaviour (VB)

Preamble 23: The IUT transits to state Determine Mode (State 3.1) by issuing an InitialDP operation to the IUT with parameter calledPartyNumber having the value as indicated in the testbody.

Postamble: TC_U_ABORT

Testbodies:

IN237401 [1], 7.2.5.3.1 — Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_1 sends a ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being inbandInfo including messageID being elementaryMessageID to the Initiating SSF.

IN237402 [1], 7.2.5.3.1 — Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_2 sends a ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being inbandInfo including messageID being text to the Initiating SSF.

IN237403 [1], 7.2.5.3.1 — Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_3 sends a ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being inbandInfo including messageID being elementaryMessageIDs including multiple elementaryMessageID to the Initiating SSF.

IN237404 [1], 7.2.5.3.1 — Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_4 sends a ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being tone including toneID to the Initiating SSF.

IN237405 [1], 7.2.5.3.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_5 sends a ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being displayInfo to the initiating SSF.
IN237406 [1], 7.2.5.3.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_6 sends a ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being inbandInfo including messageID and numberOfRepetitions to the Initiating SSF.
IN237407 [1], 7.2.5.3.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_7 sends a ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being inbandInfo including messageID and duration to the Initiating SSF.
IN237408 [1], 7.2.5.3.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_8 sends a ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being inbandInfo including messageID and interval to the Initiating SSF.
IN237409 [1], 7.2.5.3.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_9 sends a ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being inbandInfo requestAnnouncementComplete(FALSE) to the Initiating SSF.
IN237410 [1], 7.2.5.3.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_10 sends a ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend extensions to the Initiating SSF.
IN237411 [1], 7.2.5.3.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_11 sends a ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits to the Initiating SSF.
IN237412 [1], 7.2.5.3.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_12 sends a ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and minimumNumberOfDigits to the Initiating SSF.
IN237413 [1], 7.2.5.3.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_13 sends a ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and endOfReplyDigit to the Initiating SSF.
IN237414 [1], 7.2.5.3.1	Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_14 sends a ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend

collectedInfo being collectedDigits including maximumNbOfDigits and cancelDigit to the Initiating SSF.

IN237415 [1], 7.2.5.3.1 — Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_15 sends a ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and startDigit to the Initiating SSF.

IN237416 [1], 7.2.5.3.1 — Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_16 sends a ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and firstDigitTimeOut to the Initiating SSF.

IN237417 [1], 7.2.5.3.1 — Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_17 sends a ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and interDigitTimeOut to the Initiating SSF.

IN237418 [1], 7.2.5.3.1 — Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_18 sends a ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and errorTreatment to the Initiating SSF.

IN237419 [1], 7.2.5.3.1 — Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_19 sends a ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and interruptableAnnInd to the Initiating SSF.

IN237420 [1], 7.2.5.3.1 — Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_20 sends a ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and voiceInformation to the Initiating SSF

IN237421 [1], 7.2.5.3.1 — Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_21 sends a ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and voiceBack to the Initiating SSF

IN237422 [1], 7.2.5.3.1 — Ensure that the IUT after having received the InitialDP with parameter calledPartyNumber having the value SL_SR_F_Needed_I_Ready_22 sends a ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least collectedInfo being collectedDigits extensions

Preamble 24: — The IUT transits to state Waiting for Response from the SRF (State 4.1) by issuing an InitialDP operation to the IUT with calledPartyNumber having the value as indicated in the testbody.

Postamble: — TC_U_ABORT

Testbodies:

IN239001 [1], 7.2.5.4.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_SR_F_Needed_R_Timer_Exp* issues a ResetTimer operation to the Initiating SSF after expiration of the timer $T_{SCF-SSF}$.
IN239101 [1], 7.2.5.4.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_SR_F_Needed_I_Ready_1* is able to receive operation SpecializedResourceReport (non-final).
IN239201 [1], 7.2.5.4.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_SR_F_Needed_I_Ready_2* is able to receive the return result from operation PromptAndCollectUserInformation (non-final).
IN239301 [1], 7.2.5.4.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_SR_F_Needed_I_Ready_3* is able to receive return error for PlayAnnouncement operation from SRF
IN239302 [1], 7.2.5.4.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_SR_F_Needed_I_Ready_4* is able to receive return error for PromptAndCollectUserInformation operation from SRF
IN239401 [1], 7.2.5.4.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_SR_F_Needed_I_Ready_More_I_Needed_1* issues another PlayAnnouncement operation to the SRF.
IN239402 [1], 7.2.5.4.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_SR_F_Needed_I_Ready_More_I_Needed_2* issues another PromptAndCollectUserInformation operation to the SRF.
IN239403 [1], 7.2.5.4.1	Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_SR_F_Needed_I_Ready_Cancellation_Required* issues the Cancel operation to the Assisting SSF in the SSF relay case or to the SRF in the SCF-SRF direct case

5.2.3.2 Invalid behaviour (BI)

No test purposes:	no error handling exists for the only two SSF-to-SCF operations involved in the relay case: SpecializedResourceReport and return result of PromptAndCollectUserInformation.

5.2.3.3 Inopportune behaviour (BO)

Preamble 25:	The IUT transits to state Determine Mode (State 3.1) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_SR_F_Needed* to the IUT.
Postamble:	TC_U_ABORT

Testbodies:

IN257101 [1], 7.2.5.2.3, 9.4	Ensure that the IUT on reception of a semantically incorrect ApplyChargingReport operation, issues an UnexpectedComponentSequence operation error to the SSF.

IN257102 [1], 7.2.5.2.3, 9.5 — Ensure that the IUT on reception of a semantically incorrect AssistRequestInstructions operation issues an UnexpectedComponentSequence operation error to the SSF.

IN257103 [1], 7.2.5.2.3, 9.19 — Ensure that the IUT on reception of a semantically incorrect InitialDP operation issues an UnexpectedComponentSequence operation error to the SSF.

Preamble 26: — The IUT transits to state Waiting for Response from the SRF (State 4.1) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_SR_F_Needed* to the IUT.

Postamble: — TC_U_ABORT

Testbodies:

IN259101 [1], 7.2.5.2.3, 9.4 — Ensure that the IUT is able to receive a semantically incorrect ApplyChargingReport operation and issues an UnexpectedComponentSequence error to the SSF.

IN259102 [1], 7.2.5.2.3, 9.5 — Ensure that the IUT is able to receive a semantically incorrect AssistRequestInstructions operation and issues an UnexpectedComponentSequence error to the SSF.

IN259103 [1], 7.2.5.2.3, 9.19 — Ensure that the IUT is able to receive a semantically incorrect InitialDP operation and issues an UnexpectedComponentSequence error to the SSF.

5.2.4 SCF assist with relay handling (aC)

5.2.4.1 Valid behaviour (VB)

Preamble 27: — The IUT transits to the Determine Mode State (State 3.1) by issuing an InitialDP (with parameter calledPartyNumber having the value as indicated in the testbody) to the IUT.

Postamble: — TC_U_ABORT

Testbodies:

IN337401 [1], 7.2.5.3.1 — (hand-off) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value SL_*SR_F_Needed_Hand-off_Needed* issues a Connect operation to the initiating SSF.

Preamble 28: — The IUT is (back) in state Idle (State 1) by issuing an InitialDP operation with parameter calledPartyNumber having the value SL_*SR_F_Needed_Hand-off_Needed* to the IUT which causes the IUT to send a Connect operation to the initiating SSF.

Postamble: — TC_U_ABORT

Testbodies:

IN331101 [1], 7.2.5.1 — (hand-off) Ensure that the IUT is able to receive an AssistRequestInstructions operation from an assisting SSF and does not return any error or reject components within operation time.

IN331301 [1], 7.2.5.1 — (hand-off) Ensure that the IUT is able to receive operation error MissingParameter on a previously sent Connect operation and does not return any error or reject components within operation time.

IN331301 [1], 7.2.5.1	(hand-off) Ensure that the IUT is able to receive operation error SystemFailure on a previously sent Connect operation and does not return any error or reject components within operation time.
IN331302 [1], 7.2.5.1	(hand-off) Ensure that the IUT is able to receive operation error Taskrefused on a previously sent Connect operation and does not return any error or reject components within operation time.
IN331303 [1], 7.2.5.1	(hand-off) Ensure that the IUT is able to receive operation error UnexpectedDataValue on a previously sent Connect operation and does not return any error or reject components within operation time.
IN331304 [1], 7.2.5.1	(hand-off) Ensure that the IUT is able to receive operation error UnexpectedParameter on a previously sent Connect operation and does not return any error or reject components within operation time.

Preamble 29: The IUT transits to the Determine Mode State (State 3.1) by issuing an InitialDP (with parameter calledPartyNumber having the value as indicated in the testbody) to the IUT.

Postamble: TC_U_ABORT

Testbodies:

IN337402 [1], 7.2.5.3.1	(assist case) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value *SL_SR_F_Needed_A_Needed_1* issues an EstablishTemporaryConnection operation with at least assistingSSPIPRoutingAddress to the initiating SSF.
IN337403 [1], 7.2.5.3.1	(assist case) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value *SL_SR_F_Needed_A_Needed_2* issues an EstablishTemporaryConnection operation with at least assistingSSPIPRoutingAddress correlationID and sCFID to the initiating SSF.
IN337404 [1], 7.2.5.3.1	(assist case) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value *SL_SR_F_Needed_A_Needed_3* issues an EstablishTemporaryConnection operation with at least assistingSSPIPRoutingAddress and extensions to the initiating SSF.
IN337405 [1], 7.2.5.3.1	(assist case) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value *SL_SR_F_Needed_A_Needed_4* issues an EstablishTemporaryConnection operation with at least assistingSSPIPRoutingAddress and serviceInteractionIndicators to the initiating SSF.

Preamble 30: The IUT transits to the Waiting for Assist Request Instructions State (State 3.2) by issuing an InitialDP (with parameter calledPartyNumber having the value as indicated in the testbody) to the IUT.

Postamble: TC_U_ABORT

Testbodies:

IN338101 [1], 7.2.5.3.2	(assist case) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value *SL_SR_F_Needed_A_Needed_5* issues a ResetTimer operation to the initiating SSF

IN338102 [1], 7.2.5.3.2	(assist case) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value *SL_SR_F_Needed_A_Needed_6* is able to receive an AssistRequestInstructions from the assisting SSF and issues a ReleaseCall operation including parameter Cause having a non default cause value.
IN338103 [1], 7.2.5.3.2	(assist case) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value *SL_SR_F_Needed_A_Needed_7* is able to receive an AssistRequestInstructions operation from the assisting SSF and issues a ConnectToResource operation with at least resourceAddress accompanied by a PlayAnnouncement operation with at least informationToSend being inbandInfo disconnectFromIPForbidden(FALSE) to the Assisting SSF.
IN338104 [1], 7.2.5.3.2	(assist case) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value *SL_SR_F_Needed_A_Needed_8* is able to receive an AssistRequestInstructions operation from the assisting SSF and issues a ConnectToResource operation with at least resourceAddress accompanied by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits disconnectFromIPForbidden(FALSE) to the Assisting SSF.
IN338105 [1], 7.2.5.3.2	(assist case) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value *SL_SR_F_Needed_A_Needed_9* is able to process a TC_U_ABORT from SSF.
IN338301 [1], 7.2.5.3.2	(assist case) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value *SL_SR_F_Needed_A_Needed_1* when receiving operation error ETCFailed on a previously sent EstablishTemporaryConnection operation does return any TC-error or reject components and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN338302 [1], 7.2.5.3.2	(assist case) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value *SL_SR_F_Needed_A_Needed_1* when receiving operation error MissingParameter on a previously sent EstablishTemporaryConnection operation does not return any TC-error or reject components and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN338303 [1], 7.2.5.3.2	(assist case) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value *SL_SR_F_Needed_A_Needed_1* when receiving operation error SystemFailure on a previously sent EstablishTemporaryConnection operation does not return any TC-error or reject components and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN338304 [1], 7.2.5.3.2	(assist case) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value *SL_SR_F_Needed_A_Needed_1* when receiving operation error Taskrefused on a previously sent EstablishTemporaryConnection operation does not return any TC-error or reject components and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN338305 [1], 7.2.5.3.2	(assist case) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value

SL_SR_F_Needed_A_Needed_1 when receiving operation error UnexpectedDataValue on a previously sent EstablishTemporaryConnection operation does not return any TC-error or reject components and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).

IN338306 [1], 7.2.5.3.2: (assist case) Ensure that the IUT after having received the InitialDP operation with parameter calledPartyNumber containing the value *SL_SR_F_Needed_A_Needed_1* when receiving operation error UnexpectedParameter on a previously sent EstablishTemporaryConnection operation does not return any TC-error or reject components and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).

5.2.4.2 Invalid behaviour (BI)

Preamble 31: The IUT is (back) in state Idle (State 1) by issuing an InitialDP operation with parameter calledPartyNumber having the value SL_*SR_F_Needed_Hand-off_Needed* to the IUT.

Postamble: TC_U_ABORT

Testbodies:

IN341101 [1], 7.2.5.1, 9.5: (Hand-off case) Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error MissingCustomerRecord to the SSF.

IN341102 [1], 7.2.5.1, 9.5: (Hand-off case) Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error MissingParameter to the SSF.

IN341103 [1], 7.2.5.1, 9.5: (Hand-off case) Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error TaskRefused to the SSF.

IN341104 [1], 7.2.5.1, 9.5: (Hand-off case) Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error UnexpectedDataValue to the SSF.

IN341105 [1], 7.2.5.1, 9.5: (Hand-off case) Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error UnexpectedDataValue to the SSF.

IN341106 [1], 7.2.5.1, 9.5: (Hand-off case) Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error UnexpectedParameter to the SSF.

Preamble 32: The IUT transits to state Waiting for Assisst Request Instructions (State 3.2) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_SR_F_Needed_A_Needed_1* to the IUT.

Postamble: TC_U_ABORT

Testbodies:

IN348101 [1], 7.2.5.3.2, 9.5: (Assist case) Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error MissingCustomerRecord to the SSF.

IN348102 [1], 7.2.5.3.2, 9.5: (Assist case) Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error MissingParameter to the SSF.

IN348103 [1], 7.2.5.3.2, 9.5	(Assist case) Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error TaskRefused to the SSF.
IN348104 [1], 7.2.5.3.2, 9.5	(Assist case) Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error UnexpectedDataValue to the SSF.
IN348105 [1], 7.2.5.3.2, 9.5	(Assist case) Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error UnexpectedParameter to the SSF.
IN348106 [1], 7.2.5.3.2, 9.5	(Assist case) Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and a TC_U_ABORT message to the SSF.

5.2.4.3 Inopportune behaviour (BO)

Preamble 33: The IUT transits to state Waiting for Assisst Request Instructions (State 3.2) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_SR_F_Needed_A_Needed_1* to the IUT.

Postamble: TC_U_ABORT

Testbodies:

IN358101 [1], 7.2.5.3.2, 9.4	Ensure that the IUT is able to receive a semantically incorrect ApplyChargingReport operation and issues an UnexpectedComponentSequence error to the SSF.
IN358102 [1], 7.2.5.3.2, 9.19	Ensure that the IUT is able to receive a semantically incorrect InitialDP operation and issues an UnexpectedComponentSequence error to the SSF.

Preamble 34: The IUT transits to state Waiting for Assisst Request Instructions (State 3.2) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_SR_F_Needed_A_Needed_1* to the IUT.

Postamble: -

Testbodies:

IN358103 [1], 7.2.5.3.2, 9.4	Ensure that the IUT is able to receive a semantically incorrect ApplyChargingReport operation and issues a TC_U_ABORT message to the SSF.
IN358104 [1], 7.2.5.3.2, 9.19	Ensure that the IUT is able to receive a semantically incorrect InitialDP operation and issues a TC_U_ABORT message to the SSF.

5.2.5 SCF direct path IP handling (pC)

5.2.5.1 Valid behaviour (BV)

Preamble 35: The IUT transits to state Determine Mode (State 3.1) by issuing an InitialDP operation (with parameter calledPartyNumber having the value as indicated in the testbody) to the IUT.

Postamble: TC_U_ABORT

Testbody:

IN437401 [1], 7.2.5.3.1 — Ensure that the IUT after having received InitialDP with parameter calledPartyNumber having the value *SL_SR_F_Needed_A_Needed_10* issues an EstablishTemporaryConnection operation to the initiating SSF.

Preamble 36: The IUT transits to state Waiting for Assisst Request Instructions (State 3.2) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_SR_F_Needed_A_Needed_10* to the IUT wich causes the IUT to send an EstablishTemporaryConnection to the initiating SSF

Postamble: TC_U_ABORT

Testbodies:

IN438001 [1], 7.2.5.3.2 — Ensure that the IUT after expiration of $T_{SCF-SSF}$ issues a ResetTimer operation to the SSF.

IN438002 [1], 7.2.5.3.2 — Ensure that the IUT after expiration of $T_{ASSIST/HAND-OFF}$ informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).

Preamble 37: The IUT transits to state Waiting for Assisst Request Instructions (State 3.2) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_SR_F_Needed_A_Needed_10* to the IUT which causes the IUT to send an EstablishTemporaryConnection fo the initiating SSF.

Postamble: TC_U_ABORT

Testbodies:

IN438101 [1], 7.2.5.3.2 — Ensure that the IUT is able to receive an AssistRequestInstructions operation from the SRF and issues a PlayAnnouncement operation to the SRF.

IN438102 [1], 7.2.5.3.2 — Ensure that the IUT is able to receive an AssistRequestInstructions operation from the SRF and issues a PromptAndCollectUserInformation operation to the SRF.

IN438301 [1], 7.2.5.3.2 — Ensure that the IUT is able to process operation error ETCFailed on a previous sent EstablishTemporaryConnection operation to an SSF and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).

IN438302 [1], 7.2.5.3.2 — Ensure that the IUT is able to process operation error MissingParameter on a previous sent EstablishTemporaryConnection operation to an SSF and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).

IN438303 [1], 7.2.5.3.2 — Ensure that the IUT is able to process operation error SystemFailure on a previously sent EstablishTemporaryConnection operation to an SSF and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).

IN438304 [1], 7.2.5.3.2 — Ensure that the IUT is able to process operation error TaskRefused on a previously sent EstablishTemporaryConnection operation to an SSF and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).

IN438305 [1], 7.2.5.3.2	Ensure that the IUT is able to process operation error UnexpectedDataValue on a previously sent EstablishTemporaryConnection operation to an SSF and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN438306 [1], 7.2.5.3.2	Ensure that the IUT is able to process operation error UnexpectedParameter on a previously sent EstablishTemporaryConnection operation to an SSF and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
Preamble 38:	The IUT transits to state Waiting for Response from the SRF (State 4.1) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_SR_F_Needed_A_Needed_11* to the IUT which causes the IUT to send a EstablishTemporaryConnection to the initiating SSF. Then the IUT receives an AssistRequestIntructions from the assisting SSF and sends a ConnectToResource and a PlayAnnouncement operation to the assisting SSF.
Postamble:	TC_U_ABORT
Test bodies:	
IN439001 [1], 7.2.5.4.1	Ensure that the IUT after expiration of $T_{SCF-SSF}$ issues a ResetTimer operation to the initiating SSF
IN439101 [1], 7.2.5.4.1	Ensure that the IUT is able to receive a SpecializedResourceReport operation from the SRF in response to a previous sent PlayAnnouncement with permission of SRF_initiated disconnect.
IN439102 [1], 7.2.5.4.1	Ensure that the IUT is able to receive a return error for the previously sent PlayAnnouncement from the SRF
IN439301 [1], 7.2.5.4.1	Ensure that the IUT is able to receive operation error Cancelled on a previously sent PlayAnnouncement operation and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN439302 [1], 7.2.5.4.1	Ensure that the IUT is able to receive operation error MissingParameter on a previously sent PlayAnnouncement operation and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN439303 [1], 7.2.5.4.1	Ensure that the IUT is able to receive operation error SystemFailure on a previously sent PlayAnnouncement operation and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN439304 [1], 7.2.5.4.1	Ensure that the IUT is able to receive operation error UnavailableResource on a previously sent PlayAnnouncement operation and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN439305 [1], 7.2.5.4.1	Ensure that the IUT is able to receive operation error UnexpectedDataValue on a previously sent PlayAnnouncement operation and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN439306 [1], 7.2.5.4.1	Ensure that the IUT is able to receive operation error UnexpectedParameter on a previously sent PlayAnnouncement operation and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
Preamble 39:	The IUT transits to state Waiting for Response from the SRF (State 4.1) by issuing an InitialDP operation with parameter calledPartyNumber having the

value *SL_SR_F_Needed_A_Needed_12* to the IUT which causes the IUT to send a EstablishTemporaryConnection to the initiating SSF. Then the IUT receives an AssistRequestIntructions from the assisting SSF and sends a ConnectToResource and a PromptAndCollectUserInformation operation to the SRF.

Postamble: TC_U_ABORT

Test bodies:

IN439002 [1], 7.2.5.4.1	Ensure that the IUT after expiration of $T_{SCF-SSF}$ issues a ResetTimer operation to the initiating SSF
IN439103 [1], 7.2.5.4.1	Ensure that the IUT is able to receive a return result from the SRF in response to a previously sent PromptAndCollectUserInformation operation with permission of SRF-initiated disconnect.
IN439104 [1], 7.2.5.4.1	Ensure that the IUT able to receive a return error for PromptAndCollectUserInformation from the SRF
IN439201 [1], 7.2.5.4.1	Ensure that the IUT is able to receive a return result from PromptAndCollectUserInformation operation from the SRF in response to a previously sent PromptAndCollectUserInformation operation without permission of SRF-initiated disconnect.
IN439307 [1], 7.2.5.4.1	Ensure that the IUT is able to receive operation error Cancelled on a previously sent PromptAndCollectUserInformation operation and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN439308 [1], 7.2.5.4.1	Ensure that the IUT able to receive operation error ImproperCallerResponse on a previously sent PromptAndCollectUserInformation operation and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN439309 [1], 7.2.5.4.1	Ensure that the IUT able to receive operation error MissingParameter on a previously sent PromptAndCollectUserInformation operation and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN439310 [1], 7.2.5.4.1	Ensure that the IUT is able to receive operation error SystemFailure on a previously sent PromptAndCollectUserInformation operation and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN439311 [1], 7.2.5.4.1	Ensure that the IUT is able to receive operation error TaskRefused on a previously sent PromptAndCollectUserInformation operation and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN439312 [1], 7.2.5.4.1	Ensure that the IUT is able to receive operation error UnavailableResource on a previously sent PromptAndCollectUserInformation operation and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN439313 [1], 7.2.5.4.1	Ensure that the IUT is able to receive operation error UnexpectedDataValue on a previously sent PromptAndCollectUserInformation operation and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall operation to the SSF (for testing purposes only).
IN439314 [1], 7.2.5.4.1	Ensure that the IUT is able to receive operation error UnexpectedParameter on a previously sent PromptAndCollectUserInformation operation and informs the Service Logic; the Service Logic then triggers the SCF to issue the ReleaseCall

operation to the SSF (for testing purposes only).

Preamble 40: The IUT transits to state Waiting for Response from the SRF (State 4.1) by issuing an InitialDP operation (with parameter calledPartyNumber having the value as indicated in the test body) to the IUT which causes the IUT to send a EstablishTemporaryConnection to the initiating SSF. Then the IUT receives an AssistRequestIntructions from the SRF and, depending on the value for the calledPartyNumber, sends a PlayAnnouncement or PromptAndCollectUserInformation operation to the SRF.

Postamble: TC_U_ABORT

Test bodies:

IN439401 [1], 7.2.5.4.1: Ensure that the IUT after receiving the InitialDP operation with parameter calledPartyNumber having the value *SL_SR_F_Needed_A_Needed_More_I_Needed_1* issues another PlayAnnouncement operation to the SRF.

IN439402 [1], 7.2.5.4.1: Ensure that the IUT after receiving the InitialDP operation with parameter calledPartyNumber having the value *SL_SR_F_Needed_A_Needed_More_I_Needed_2* issues another PromptAndCollectUserInformation operation to the SRF.

IN439403 [1], 7.2.5.4.1: Ensure that the IUT after receiving the InitialDP operation with parameter calledPartyNumber having the value *SL_SR_F_Needed_A_Needed_More_I_Needed_1* after issueing the internal event Cancelation_Required to the IUT issues a Cancel operation to the SRF.

IN439404 [1], 7.2.5.4.1: Ensure that the IUT after receiving the InitialDP operation with parameter calledPartyNumber having the value *SR_F_Needed_A_Needed_C_SCF_Proc_1* issues a DisconnectForwardConnection operation to the initiating SSF.

IN439405 [1], 7.2.5.4.1: Ensure that the IUT after receiving the InitialDP operation with parameter calledPartyNumber having the value *SR_F_Needed_A_Needed_C_SCF_Proc_2* issues another PlayAnnouncement (containing a request for returning a SpecializedresourceReport operation as an indication of completion of the operation) with permission of SRF-initiated disconnect to the SRF.

IN439406 [1], 7.2.5.4.1: Ensure that the IUT after receiving the InitialDP operation with parameter calledPartyNumber having the value *SR_F_Needed_A_Needed_C_SCF_Proc_3* issues PromptAndCollectUserInformation with permission of SRF-initiated disconnect to the SRF

IN439407 [1], 7.2.5.4.1: Ensure that the IUT after receiving the InitialDP operation with parameter calledPartyNumber having the value *SR_F_Needed_A_Needed_C_SCF_Proc_4* issues another PlayAnnouncement (**not** containing a request for returning a SpecializedResourceReport operation as an indication of completion of the operation) with permission of SRF-initiated disconnect to the SRF.

IN439408 [1], 7.2.5.4.1: Ensure that the IUT after receiving an InitialDP operation with parameter calledPartyNumber having the value *SR_F_Needed_A_Needed_C_Req* issues a Cancel operation to the SRF.

5.2.5.2 Invalid behaviour (BI)

Preamble 41: The IUT transits to state Waiting for Assisst Request Instructions (State 3.2) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_SR_F_Needed_A_Needed_10* to the IUT which causes the IUT to send an EstablishTemporaryConnection to the initiating SSF.

Postamble: TC_U_ABORT

Testbodies:

IN448101 [1], 7.2.5.3.2, 9.5	Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error MissingCustomerRecord to the SSF.
IN448102 [1], 7.2.5.3.2, 9.5	Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error MissingParameter to the SSF.
IN448103 [1], 7.2.5.3.2, 9.5	Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error TaskRefused to the SSF.
IN448104 [1], 7.2.5.3.2, 9.5	Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error UnexpectedDataValue to the SSF.
IN448105 [1], 7.2.5.3.2, 9.5	Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues operation error UnexpectedParameter to the SSF.
IN448106 [1], 7.2.5.3.2, 9.5	Ensure that the IUT is able to receive a syntactically invalid AssistRequestInstructions operation and issues a TC_U_ABORT message to the SSF.

5.2.5.3 Inopportune behaviour (BO)

Preamble 42:	The IUT transits to state Waiting for Response from the SRF (State 4.1) by issuing an InitialDP operation with parameter calledPartyNumber having the value *SL_SR_F_Needed_A_Needed_10* to the IUT which causes the IUT to send a EstablishTemporaryConnection to the initiating SSF. Then the IUT receives an AssistRequestIntructions from the SRF and sends a PlayAnnouncement operation to the SRF.
Postamble:	TC_U_ABORT

Testbodies:

IN459101 [1], 7.2.5.4.1, 9.5	Ensure that the IUT is able to receive a semantically incorrect AssistRequestInstructions operation and issues an UnexpectedComponentSequence operation error to the SRF.
IN459102 [1], 7.2.5.4.1, 9.5	Ensure that the IUT is able to receive a semantically incorrect AssistRequestInstructions operation and issues a TC_U_ABORT message to the SRF.

Annex A (normative): Service Logic control values

In this annex all the symbolic names are listed for the values of the calledPartyNumber parameter of the InitialDP operation that are used to remotely control the behaviour of the test functionality at the Service Logic side of the SCF. Also a description is given of every symbolic name in which the behaviour of the SCF is described that should be provoked by the test functionality when receiving an InitialDP with the concerning value for the calledPartyNumber parameter.

It is strongly recommended to use the same symbolic names in the ATS that is based on this TSS&TP document.

Table A.1

Symbolic Name	Description
SL_InitiateCallAttempt_1	Triggers the SCF to issue to the SSF the InitiateCallAttempt operation with at least destinationRoutingAddress
SL_InitiateCallAttempt_2	Triggers the SCF to issue to the SSF the InitiateCallAttempt operations with at least destinationRoutingAddress and alertingPattern
SL_InitiateCallAttempt_3	Triggers the SCF to issue to the SSF the InitiateCallAttempt operation with at least destinationRoutingAddress and extensions
SL_InitiateCallAttempt_4	Triggers the SCF to issue to the SSF the InitiateCallAttempt operation with at least destinationRoutingAddress and serviceInteractionIndicators
SL_InitiateCallAttempt_5	Triggers the SCF to issue to the SSF the InitiateCallAttempt operation with at least destinationRoutingAddress and callingPartyNumber
SL_InitiateCallAttempt	Triggers the SCF to issue to the SSF the InitiateCallAttempt operation
SL_ApplyCharging	Triggers the SCF to issue to the SSF the operation ApplyCharging
SL_CallInformationRequest	Triggers the SCF to issue to the SSF the operation CallInformationRequest
SL_FurnishChargingInformation	Triggers the SCF to issue to the SSF the operation FurnishChargingInformation
SL_RequestReportBCSMEvent	Triggers the SCF to issue to the SSF the operation RequestReportBCSMEvent
SL_RequestNotificationChargingEvent	Triggers the SCF to issue to the SSF the operation RequestNotificationChargingEvent
SL_ResetTimer	Triggers the SCF to issue to the SSF the operation ResetTimer after expiration of timer T_{SCF_SSF}.
SL_SendChargingInformation	Triggers the SCF to issue to the SSF the operation SendChargingInformation
SL_ReqRBCSME_Cancel	Triggers the SCF to issue to the SSF the operation RequestReportBCSMEvent, followed by operation Cancel
SL_FurnishChargingInformation_ReleaseCall	Triggers the SCF to issue to the SSF the operation FurnishChargingInformation, followed by operation ReleaseCall
SL_SendChargingInformation_ReleaseCall	Triggers the SCF to issue to the SSF the operation SendChargingInformation, followed by operation ReleaseCall
SL_ReqRBCSME_Cancel_ReleaseCall	Triggers the SCF to issue to the SSF the operation RequestReportBCSMEvent, followed by operation Cancel, followed by operation ReleaseCall
SL_RequestReportBE_ReleaseCall	Triggers the SCF to issue to the SSF the operation RequestReportBCSMEvent, followed by operation ReleaseCall
SL_Connect_1	Triggers the SCF to issue to the SSF the operation Connect with at least destinationRoutingAddress
SL_Connect_2	Triggers the SCF to issue to the SSF the operation Connect with at least destinationRoutingAddress and alertingPattern

(continued)

Table A.1 (continued)

Symbolic Name	Description
SL_Connect_3	Triggers the SCF to issue to the SSF the operation Connect with at least destinationRoutingAddress and routeList
SL_Connect_4	Triggers the SCF to issue to the SSF the operation Connect with at least destinationRoutingAddress and cutAndPaste
SL_Connect_5	Triggers the SCF to issue to the SSF the operation Connect with at least destinationRoutingAddress, originalCalledPartyID , redirectingPartyID and redirectionInformation
SL_Connect_6	Triggers the SCF to issue to the SSF the operation Connect with at least destinationRoutingAddress, callingPartyNumber and callingPartysCategory
SL_Connect_7	Triggers the SCF to issue to the SSF the operation Connect with at least destinationRoutingAddress and extensions
SL_Connect_8	Triggers the SCF to issue to the SSF the operation Connect with at least destinationRoutingAddress and serviceInteractionIndicators.
SL_FurnishChargingInformation_tConnect	Triggers the SCF to issue to the SSF the operation FurnishChargingInformation followed by operation Connect
SL_SendChargingInformation_-Connect	Triggers the SCF to issue to the SSF the operation SendChargingInformation followed by operation Connect
SL_ReqRBCSME_Cancel_Connect	Triggers the SCF to issue to the SSF the operation RequestReportBCSMEvent, followed by operation Cancel followed by operation Connect
SL_RequestReportBE_Connect	Triggers the SCF to issue to the SSF the operation RequestReportBCSMEvent, followed by operation Connect
SL_FurnishChargingInformation_-Continue	Triggers the SCF to issue to the SSF the operation FurnishChargingInformation followed by operation Continue
SL_SendChargingInformation_-Continue	Triggers the SCF to issue to the SSF the operation SendChargingInformation followed by operation Continue
SL_ReqRBCSME_Cancel_Continue	Triggers the SCF to issue to the SSF the operation RequestReportBCSMEvent, followed by operation Cancel followed by operation Continue
SL_RequestReportBCSMEvent_-Continue	Triggers the SCF to issue to the SSF the operation RequestReportBCSMEvent followed by operation Continue
SL_CallGap_1	Triggers the SCF after transiting from state 1 (Idle) to state 2.1 (Preparing SSF instructions) to issue a CallGap operation with gapCriteria being calledAddressValue gapindicators to the SSF.
SL_CallGap_2	Triggers the SCF after transiting from state 1 (Idle) to state 2.1 (Preparing SSF instructions) to issue a CallGap operation with gapCriteria being gapOnService gapindicators to the SSF.
SL_CallGap_3	Triggers the SCF after transiting from state 1 (Idle) to state 2.1 (Preparing SSF instructions) to issue a CallGap operation with gapCriteria being calledAddressAndService gapindicators to the SSF.
SL_CallGap_4	Triggers the SCF after transiting from state 1 (Idle) to state 2.1 (Preparing SSF instructions) to issue a CallGap operation gapCriteria being callingAddressAndService including callingAddressValue and serviceKey gapindicators to the SSF.
SL_CallGap_5	Triggers the SCF after transiting from state 1 (Idle) to state 2.1 (Preparing SSF instructions) to issue a CallGap operation gapCriteria gapindicators controlType to the SSF.
SL_CallGap_6	Triggers the SCF after transiting from state 1 (Idle) to state 2.1 (Preparing SSF instructions) to issue a CallGap operation gapCriteria gapindicators gapTreatment being informationToSend to the SSF.
SL_CallGap_7	Triggers the SCF after transiting from state 1 (Idle) to state 2.1 (Preparing SSF instructions) to issue a CallGap operation gapCriteria gapindicators gapTreatment being releaseCause to the SSF.

(continued)

Table A.1 (continued)

Symbolic Name	Description
SL_CallGap_8	Triggers the SCF after transiting from state 1 (Idle) to state 2.1 (Preparing SSF instructions) to issue a CallGap gapCriteria gapindicators gapTreatment being both to the SSF.
SL_CallGap_9	Triggers the SCF after transiting from state 1 (Idle) to state 2.1 (Preparing SSF instructions) to issue a CallGap gapCriteria gapindicators extensions to the SSF.
SL_Ready_for_Queueing_-Processing	Triggers the SCF to transit to state 2.2: Queueing FSM by issueing the internal message: - Ready_for_Queueing_Processing
Ready_For_Q_Non-Call_Proc_Instr_1	Triggers the SCF after transiting from state 1 (Idle) to state 2.2.1 (Queueing FSM - Preparing SSF Instructions) to issue internal message: - Non-Call_Processing_Instructions to the IUT which causes the IUT to send operation ApplyCharging to the SSF.
Ready_For_Q_Non-Call_Proc_Instr_2	Triggers the SCF after transiting from state 1 (Idle) to state 2.2.1 (Queueing FSM - Preparing SSF Instructions) to issue internal message: - Non-Call_Processing_Instructions to the IUT which causes the IUT to send operation CallInformationRequest to the SSF.
Ready_For_Q_Non-Call_Proc_Instr_3	Triggers the SCF after transiting from state 1 (Idle) to state 2.2.1 (Queueing FSM - Preparing SSF Instructions) to issue internal message: - Non-Call_Processing_Instructions to the IUT which causes the IUT to send operation FurnishChargingInformation to the SSF.
Ready_For_Q_Non-Call_Proc_Instr_4	Triggers the SCF after transiting from state 1 (Idle) to state 2.2.1 (Queueing FSM - Preparing SSF Instructions) to issue internal message: - Non-Call_Processing_Instructions to the IUT which causes the IUT to send operation RequestReportBCSMEvent to the SSF.
Ready_For_Q_Non-Call_Proc_Instr_5	Triggers the SCF after transiting from state 1 (Idle) to state 2.2.1 (Queueing FSM - Preparing SSF Instructions) to issue internal message: - Non-Call_Processing_Instructions to the IUT which causes the IUT to send operation RequestNotificationChargingEvent to the SSF.
Ready_For_Q_Non-Call_Proc_Instr_6	Triggers the SCF after transiting from state 1 (Idle) to state 2.2.1 (Queueing FSM - Preparing SSF Instructions) to issue internal message: - Non-Call_Processing_Instructions to the IUT which causes the IUT to send operation ResetTimer to the SSF.
Ready_For_Q_Non-Call_Proc_Instr_7	Triggers the SCF after transiting from state 1 (Idle) to state 2.2.1 (Queueing FSM - Preparing SSF Instructions) to issue internal message: - Non-Call_Processing_Instructions to the IUT which causes the IUT to send operation SendChargingInformation to the SSF.
SL_IdleLineTrunk_ApplyCharging	Triggers the SCF after transiting from state 2.2 (Queueing FSM) to state 2.1 (Preparing SSF Instructions) to issue to the SSF the operation ApplyCharging
SL_QueueingTimer_ApplyCharging	Triggers the SCF after transiting from state 2.2 (Queueing FSM) to state 2.1 (Preparing SSF Instructions), after expiration of the Queueing Timer, to issue to the SSF the operation ApplyCharging.
SL_RequestBCSMEvent_Continue_1	Triggers the SCF to issue to the SSF the operation RequestReportBCSMEvent with MonitorMode being NotifyAndContinue, followed by a Continue operation.

(continued)

Table A.1 (continued)

Symbolic Name	Description
SL_RequestBCSMEvent_Continue_2	Triggers the SCF to issue to the SSF the operation RequestReportBCSMEvent with MonitorMode being Interrupted followed by a Continue operation. When the IUT receives the requested report it sends another RequestReportBCSMEvent to the SSF.
SL_RequestBCSMEvent_Continue_3	Triggers the SCF to issue to the SSF the operation RequestReportBCSMEvent with MonitorMode being Interrupted followed by a Continue operation. When the IUT receives the requested report it sends a CollectInformation operation to the SSF.
SL_RequestBCSMEvent_Continue_4	Triggers the SCF to issue to the SSF the operation RequestReportBCSMEvent with MonitorMode being Interrupted followed by a Continue operation. When the IUT receives the requested report it sends a Connect operation to the SSF.
SL_RequestBCSMEvent_Continue_5	Triggers the SCF to issue to the SSF the operation RequestReportBCSMEvent with MonitorMode being Interrupted followed by a Continue operation. When the IUT receives the requested report it sends a Continue operation to the SSF.
SL_RequestBCSMEvent_Continue_6	Triggers the SCF to issue to the SSF the operation RequestReportBCSMEvent with MonitorMode being Interrupted followed by a Continue operation. When the IUT receives the requested report it sends a ReleaseCall operation to the SSF.
SL_ApplyCharging_Continue_2	Triggers the SCF to issue to the SSF the operation ApplyCharging with sendCalculatinToSCPIndication is TRUE, followed by a Continue operation.
SL_CallInformationRequest_-Continue	Triggers the SCF to issue to the SSF the operation CallInformationRequest followed by a Continue operation
SL_RequestNotificationCE_-ReqRepBCSM	Triggers the SCF to issue to the SSF the operation requestNotificationChargingEvent followed by operation RequestReportBCSMEvent with monitorMode being NotifyAndContinue.
SL_AC_Continue	Triggers the SCF to issue to the SSF the operation ApplyCharging (Monitoring required) followed by the CallInformation operation
SL_CIR_Continue	Triggers the SCF to issue to the SSF the operation CallInformationRequest (Monitoring required) followed by the CallInformation operation
SL_RRBE_Continue	Triggers the SCF to issue to the SSF the operation RequestReportBCSMEvent followed by the CallInformation operation
SL_RNCE_Continue	Triggers the SCF to issue to the SSF the operation RequestNotificationChargingEvent followed by the CallInformation operation
SL_ApplyCharging_Continue_1	Triggers the SCF to issue to the SSF the operation ApplyCharging followed by the operation Continue
SL_Filtering_Request_To_SSF_1	Triggers the SCF to issue to the SSF the operation ActivateServiceFiltering with at least filteredCallTreatment including sFBillingChargingCharacteristics filteringCharacteristics being interval filteringTimeOut being duration filteringCriteria being serviceKey
SL_Filtering_Request_To_SSF_2	Triggers the SCF to issue to the SSF the operation ActivateServiceFiltering with at least filteredCallTreatment including sFBillingChargingCharacteristics filteringCharacteristics being numberOfCalls filteringTimeOut being stopTime filteringCriteria being addressAndService including calledAddressValue and ServiceKey
SL_Filtering_Request_To_SSF_3	Triggers the SCF to issue to the SSF the operation ActivateServiceFiltering with at least filteredCallTreatment including sFBillingChargingCharacteristics and informationToSend filteringCharacteristics being interval filteringTimeOut being duration filteringCriteria being ServiceKey

(continued)

Table A.1 (continued)

Symbolic Name	Description
SL_Filtering_Request_To_SSF_4	Triggers the SCF to issue to the SSF the operation ActivateServiceFiltering with at least filteredCallTreatment including sFBillingChargingCharacteristics and maximumNumberOfCounters filteringCharacteristics being interval filteringTimeOut being duration filteringCriteria being ServiceKey
SL_Filtering_Request_To_SSF_5	Triggers the SCF to issue to the SSF the operation ActivateServiceFiltering with at least filteredCallTreatment including sFBillingChargingCharacteristics and releaseCause filteringCharacteristics being interval filteringTimeOut being duration filteringCriteria being serviceKey
SL_Continue	Triggers the SCF to issue to the SSF the operation Continue
SL_SR_F_Needed _I_Ready_1	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being inbandInfo including messageID being elementaryMessageID.
SL_SR_F_Needed _I_Ready_2	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being inbandInfo including messageID being text.
SL_SR_F_Needed _I_Ready_3	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being inbandInfo including messageID being elementaryMessageIDs including multiple elementaryMessageID.
SL_SR_F_Needed _I_Ready_4	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being tone including toneID.
SL_SR_F_Needed _I_Ready_5	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being displayInfo.
SL_SR_F_Needed _I_Ready_6	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being inbandInfo including messageID and numberOfRepetitions.

(continued)

Table A.1 (continued)

Symbolic Name	Description
SL_SR_F_Needed _I_Ready_7	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being inbandInfo including messageID and duration.
SL_SR_F_Needed _I_Ready_8	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being inbandInfo including messageID and interval.
SL_SR_F_Needed _I_Ready_9	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend being inbandInfo requestAnnouncementComplete(FALSE).
SL_SR_F_Needed _I_Ready_10	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PlayAnnouncement operation with at least informationToSend extensions.
SL_SR_F_Needed _I_Ready_11	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits.
SL_SR_F_Needed _I_Ready_12	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and minimumNumberOfDigits.
SL_SR_F_Needed _I_Ready_13	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and endOfReplyDigit.

(continued)

Table A.1 (continued)

Symbolic Name	Description
SL_SR_F_Needed _I_Ready_14	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and cancelDigit.
SL_SR_F_Needed _I_Ready_15	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and startDigit.
SL_SR_F_Needed _I_Ready_16	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and firstDigitTimeOut.
SL_SR_F_Needed _I_Ready_17	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and interDigitTimeOut.
SL_SR_F_Needed _I_Ready_18	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and errorTreatment.
SL_SR_F_Needed _I_Ready_19	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and interruptableAnnInd.
SL_SR_F_Needed _I_Ready_20	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and voiceInformation to the Initiating SSF

(continued)

Table A.1 (continued)

Symbolic Name	Description
SL_SR_F_Needed _I_Ready_21	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits including maximumNbOfDigits and voiceBack to the Initiating SSF
SL_SR_F_Needed _I_Ready_22	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed_I_Ready which causes the IUT to issue to the initiating SSF the ConnectToResource operation with at least resourceAddress followed by a PromptAndCollectUserInformation operation with at least collectedInfo being collectedDigits extensions .
SL_SR_F_Needed_I_Ready_R_-Timer_Exp	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed - Instruction_Ready which causes the IUT to issue to the SSF the ConnectToResource operation, the PlayAnnouncement operation and finally the ResetTimer operation after expiration of timer T_{SCF_SSF}.
SL_SR_F_Needed_I_Ready_1	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed - Instruction_Ready which causes the IUT to issue to the SSF the ConnectToResource operation, and to SRF the PlayAnnouncement operation.
SL_SR_F_Needed_I_Ready_2	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed - Instruction_Ready which causes the IUT to issue to the SSF the ConnectToResource operation, and to SRF the PromptAndCollectUserInformation operation.
SL_SR_F_Needed_I_Ready_3	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed - Instruction_Ready which causes the IUT to issue to the SSF the ConnectToResource operation, and to SRF the invalid PlayAnnouncement operation.
SL_SR_F_Needed_I_Ready_4	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed - Instruction_Ready which causes the IUT to issue to the SSF the ConnectToResource operation, and to SRF the invalid PromptAndCollectUserInformation operation.
SL_SR_F_Needed_I_Ready_More_-I_Needed_1	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed - Instruction_Ready which causes the IUT to issue to the SSF the ConnectToResource operation, the PlayAnnouncement operation and to the SRF the PlayAnnouncement operation.

(continued)

Table A.1 (continued)

Symbolic Name	Description
SL_SR_F_Needed_I_Ready_More_-I_Needed_2	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed - Instruction_Ready which causes the IUT to issue to the SSF the ConnectToResource operation, the PlayAnnouncement operation and to the SRF the PromptAndCollectUserInformation.
SL_SR_F_Needed_I_Ready_-Cancelation_Required	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Response from the SRF) by issuing the internal messages: - SR_Facilities_Needed - Instruction_Ready which causes the IUT to issue to the SSF the ConnectToResource operation, the PlayAnnouncement operation and finally to the assisting SSF the Cancel operation.
SL_SR_F_Needed	Triggers the SCF to transit from state 1 (Idle) to state 3.1 (Determine Mode) by issuing the internal messages: - SR_Facilities_Needed to the IUT.
SL_SR_F_Needed_Hand-off_Needed	Triggers the SCF to transit from state 1 (Idle) to state 3.1 (Determine Mode) by issuing the internal messages: - SR_Facilities_Needed - Hand-off_Needed which causes the IUT to issue to the SSF the operation Connect.
SL_SR_F_Needed_A_Needed_1	Triggers the SCF to transit from state 1 (Idle) to state 3.2 (Waiting for Assist Request Instructions) by issuing the internal messages: - SR_Facilities_Needed - Assist_Needed which causes the IUT to issue to the SSF the operation EstablishTemporaryConnection with at least assistingSSPIPRoutingAddress.EstablishTemporaryConnection.
SL_SR_F_Needed_A_Needed_2	Triggers the SCF to transit from state 1 (Idle) to state 3.2 (Waiting for Assist Request Instructions) by issuing the internal messages: - SR_Facilities_Needed - Assist_Needed which causes the IUT to issue to the SSF the operation EstablishTemporaryConnection with at least assistingSSPIPRoutingAddress correlationID and sCFID to the initiating SSF.
SL_SR_F_Needed_A_Needed_3	Triggers the SCF to transit from state 1 (Idle) to state 3.2 (Waiting for Assist Request Instructions) by issuing the internal messages: - SR_Facilities_Needed - Assist_Needed which causes the IUT to issue to the SSF the operation EstablishTemporaryConnection with at least assistingSSPIPRoutingAddress and extensions to the initiating SSF.
SL_SR_F_Needed_A_Needed_4	Triggers the SCF to transit from state 1 (Idle) to state 3.2 (Waiting for Assist Request Instructions) by issuing the internal messages: - SR_Facilities_Needed - Assist_Needed which causes the IUT to issue to the SSF the operation EstablishTemporaryConnection with at least assistingSSPIPRoutingAddress and serviceInteractionIndicators to the initiating SSF.

(continued)

Table A.1 (continued)

Symbolic Name	Description
SL_SR_F_Needed_A_Needed_5	Triggers the SCF to transit from state 1 (Idle) to state 3.2 (Waiting for Assist Request Instructions) by issuing the internal messages: - SR_Facilities_Needed - Assist_Needed which causes the IUT to issue to the SSF the operation ResetTimer after expiration of timer T_{SCF_SSF}.
SL_SR_F_Needed_A_Needed_6	Triggers the SCF to transit from state 1 (Idle) to state 3.2 (Waiting for Assist Request Instructions) by issuing the internal messages: - SR_Facilities_Needed - Assist_Needed then the IUT receives an AssistRequestInstructions from the assisting SSF and issues a ReleaseCall operation including parameter Cause having a non default cause value.
SL_SR_F_Needed_A_Needed_7	Triggers the SCF to transit from state 1 (Idle) to state 3.2 (Waiting for Assist Request Instructions) by issuing the internal messages: - SR_Facilities_Needed - Assist_Needed which causes the IUT to issue to the SSF the ConnectToResource operation with at least resourceAddress accompanied by a PlayAnnouncement operation with at least informationToSend being inbandInfo disconnectFromIPForbidden(FALSE) to the Assisting SSF, after reception of the AssistRequestInstructions operation from the assisting SSF.
SL_SR_F_Needed_A_Needed_8	Triggers the SCF to transit from state 1 (Idle) to state 3.2 (Waiting for Assist Request Instructions) by issuing the internal messages: - SR_Facilities_Needed - Assist_Needed which causes the IUT to issue to the SSF the ConnectToResource operation with at least resourceAddress accompanied by a PromptAndCollectUserInformation operation with at least informationToSend collectedInfo being collectedDigits disconnectFromIPForbidden(FALSE) to the Assisting SSF, after reception of the AssistRequestInstructions operation from the assisting SSF.
SL_SR_F_Needed_A_Needed_9	Triggers the SCF to transit from state 1 (Idle) to state 3.2 (Waiting for Assist Request Instructions) by issuing the internal messages: - SR_Facilities_Needed - Assist_Needed so that the SCF is able to process a TC_U_ABORT from SSF.
SL_SR_F_Needed_A_Needed_10	Triggers the SCF to transit from state 1 (Idle) to state 3.2 (Waiting for Assist Request Instructions) by issuing the internal messages: - SR_Facilities_Needed - Assist_Needed which causes the IUT to issue to the SSF the operation EstablishTemporaryConnection.
SL_SR_F_Needed_A_Needed_11	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Assist Request Instructions) by issuing the internal messages: - SR_Facilities_Needed - Assist_Needed which causes the IUT to issue to the SSF the operation EstablishTemporaryConnection. After reception of the AssistRequestInstructions operation from the SRF the SCF issues a PlayAnnouncement to the assisitng SSF and transits from state 3.2 to state 4.1 (Waiting for Response from the SRF).

(continued)

Table A.1 (continued)

Symbolic Name	Description
SL_SR_F_Needed_A_Needed_12	Triggers the SCF to transit from state 1 (Idle) to state 4.1 (Waiting for Assist Request Instructions) by issuing the internal messages: - SR_Facilities_Needed - Assist_Needed which causes the IUT to issue to the SSF the operation EstablishTemporaryConnection. After reception of the AssistRequestInstructions operation from the SRF the SCF issues a PromptAndCollectUserInformation to the assisitng SSF and transits from state 3.2 to state 4.1 (Waiting for Response from the SRF).
SL_SR_F_Needed_A_Needed_-More_I_Needed_1	Triggers the SCF to transit from state 1 (Idle) to state 3.2 (Waiting for Assist Request Instructions) by issuing the internal messages: - SR_Facilities_Needed - Assist_Needed which causes the IUT to issue to the SSF the operation EstablishTemporaryConnection. After reception of the AssistRequestInstructions operation from the SRF the SCF transits from state 3.2 to state 4.1 (Waiting for Response from the SRF) by issueing the PlayAnnouncement operation.to the SRF.
SL_SR_F_Needed_I_Ready_-More_I_Needed_2	Triggers the SCF to transit from state 1 (Idle) to state 3.2 (Waiting for Assist Request Instructions) by issuing the internal messages: - SR_Facilities_Needed - Assist_Needed which causes the IUT to issue to the SSF the operation EstablishTemporaryConnection. After reception of the AssistRequestInstructions operation from the SRF the SCF transits from state 3.2 to state 4.1 (Waiting for Response from the SRF) by issueing a PromptAndCollectUserInformation operation.to the SRF.
SL_SR_F_Needed_A_Needed-_C_SCF_Proc_1	Triggers the SCF to transit first to state Waiting for AssistRequest Instructions (State 3.2) by issuing: - SR_Facilities_Needed - Assist_Needed After reception of the AssistRequestInstructions operation from the SRF the SCF transits from state 3.2 to state 4.1 (Waiting for Response from the SRF) by issueing a PlayAnnouncement operation.to the SRF. Then - Continue_SCF_Processing is issued to the IUT which causes the IUT to issue DisconnectForwardConnection to the initiating SSF.
SL_SR_F_Needed_A_Needed-_C_SCF_Proc_2	Triggers the SCF to transit first to state Waiting for AssistRequest Instructions (State 3.2) by issuing: - SR_Facilities_Needed - Assist_Needed After reception of the AssistRequestInstructions operation from the SRF the SCF transits from state 3.2 to state 4.1 (Waiting for Response from the SRF) by issueing a PlayAnnouncement operation.to the SRF. Then - Continue_SCF_Processing is issued to the IUT which causes the IUT to issue another PlayAnnouncement operation(containing a request for returning a SpecializedresourceReport operation as an indication of completion of the operation) with permission of SRF-initiated disconnect to the SRF.

(continued)

Table A.1 (concluded)

Symbolic Name	Description
SL_SR_F_Needed_A_Needed-_C_SCF_Proc_3	Triggers the SCF to transit first to state Waiting for AssistRequest Instructions (State 3.2) by issuing: - SR_Facilities_Needed - Assist_Needed After reception of the AssistRequestInstructions operation from the SRF the SCF transits from state 3.2 to state 4.1 (Waiting for Response from the SRF) by issueing a PlayAnnouncement operation.to the SRF. Then - Continue_SCF_Processing is issued to the IUT which causes the IUT to issue PromptAndCollectUserInformation with permission of SRF-initiated disconnect to the SRF.
SL_SR_F_Needed_A_Needed-_C_SCF_Proc_4	Triggers the SCF to transit first to state Waiting for AssistRequest Instructions (State 3.2) by issuing: - SR_Facilities_Needed - Assist_Needed After reception of the AssistRequestInstructions operation from the SRF the SCF transits from state 3.2 to state 4.1 (Waiting for Response from the SRF) by issueing a PlayAnnouncement operation.to the SRF. Then - Continue_SCF_Processing is issued to the IUT which causes the IUT to issue another PlayAnnouncement operation(not containing a request for returning a SpecializedResourceReport operation as an indication of completion of the operation) with permission of SRF-initiated disconnect to the SRF.
SL_SR_F_Needed_A_Needed_C_Req	Triggers the SCF to transit first to state Waiting for AssistRequest Instructions (State 3.2) by issuing: - SR_Facilities_Needed - Assist_Needed After reception of the AssistRequestInstructions operation from the SRF the SCF transits from state 3.2 to state 4.1 (Waiting for Response from the SRF) by issueing a PlayAnnouncement operation.to the SRF. Then - Cancellation_Required is issued to the IUT which causes the IUT to issue operation Cancel to the SRF.

Annex B (informative): Global Service Logic

Below an overview of Global Service Logic (GSL) for the Test Purposes as described in the ETS is given.

The contents of this annex is meant to give the developers an idea about how to design the test service scripts for the conformance tests for the Core INAP SCF interfaces. Completeness has not been one of the objectives during the specification of this annex. At the end of this annex a list is given of the test cases that are not covered by the GSL specifications. However, the GSLs of these TPs can quite easily be designed taking the depicted ones as a basis.

The GSL for the TPs are depicted using figures that indicate the involved SIBs and their relations. The first COMPARE SIB in each figure is used to select between the different test scripts. For readability, not all logical ends of all SIBs are shown. For the COMPARE SIB, the indicated logical end represents "equal to". For the other SIBs, the indicate logical end represents the first logical end, unless indicated otherwise. The detailed Service Support Data has not been included.

Several GSLs are shown with an "open" SIB at the end of the SIB chain in case no specific chain completion is given. The "open" SIB indicates the location where the GSL designer has to extend the GSL with at least one additional SIB. However the actual extension is out of the TP scope.

The abbreviations used in this annex are:

BCP	Basic Call Process (SIB)
CID	Call Instance Data
CIDFP	Call Instance Data Field Pointer
GSL	Global Service Logic
POI	Point Of Initiation
POR	Point Of Return
SIB	Service Independent Building Block
SSD	Service Support Data

B.1 Test_GSL_001

This GSL is used for TPs IN111101, IN131101.

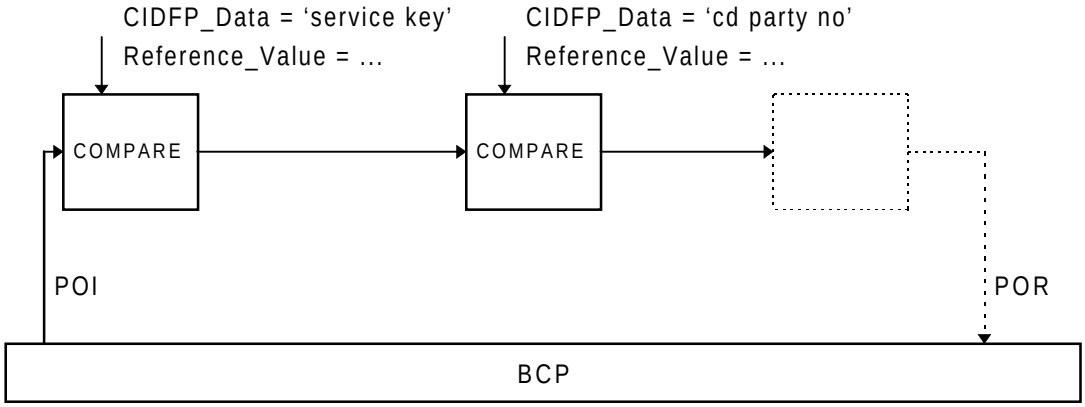


Figure B.1

B.2 Test_GSL_002

This GSL is used for TPs IN131102.

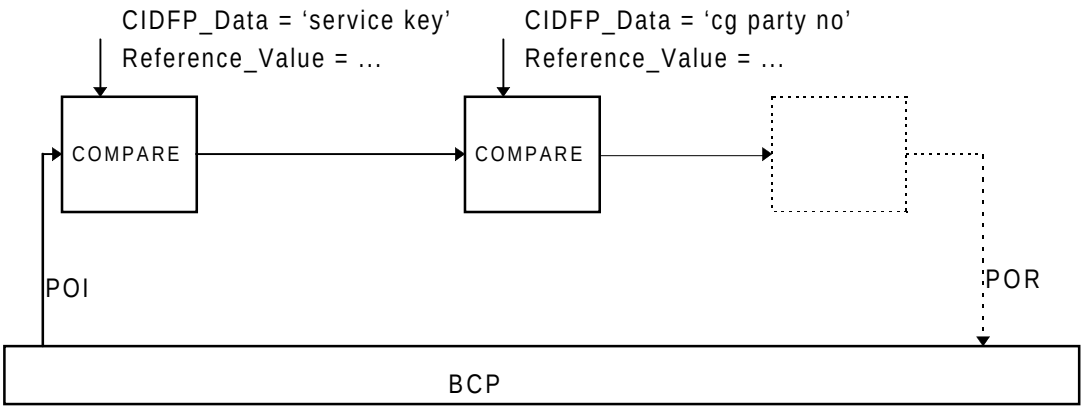


Figure B.2

B.3 Test_GSL_003

This GSL is used for TPs IN131103.

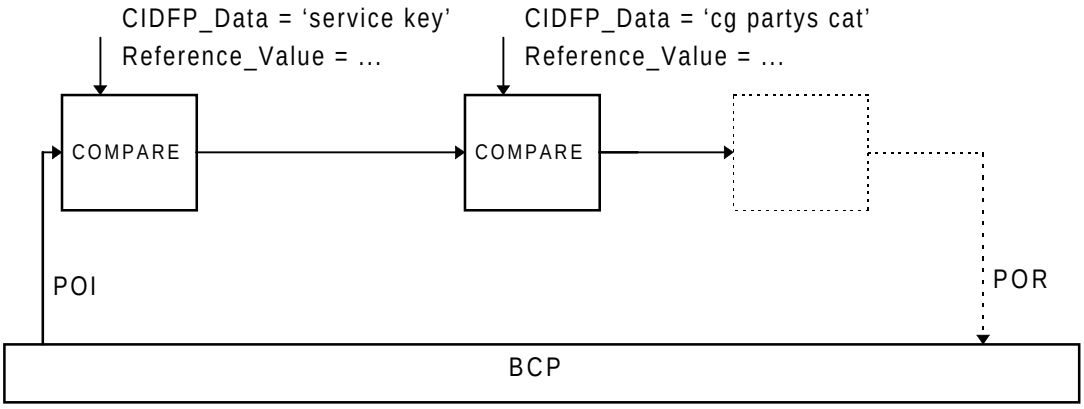


Figure B.3

B.4 Test_GSL_004

This GSL is used for TPs IN131104.

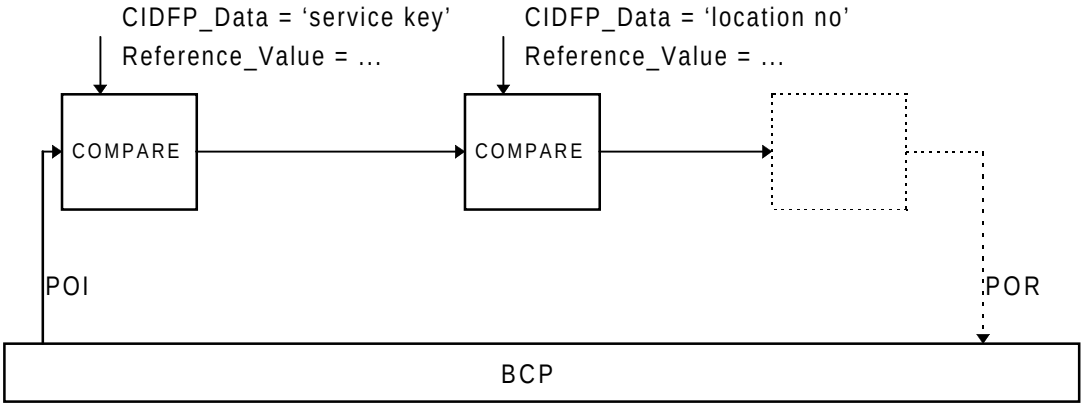


Figure B.4

B.5 Test_GSL_005

This GSL is used for TPs IN131105.

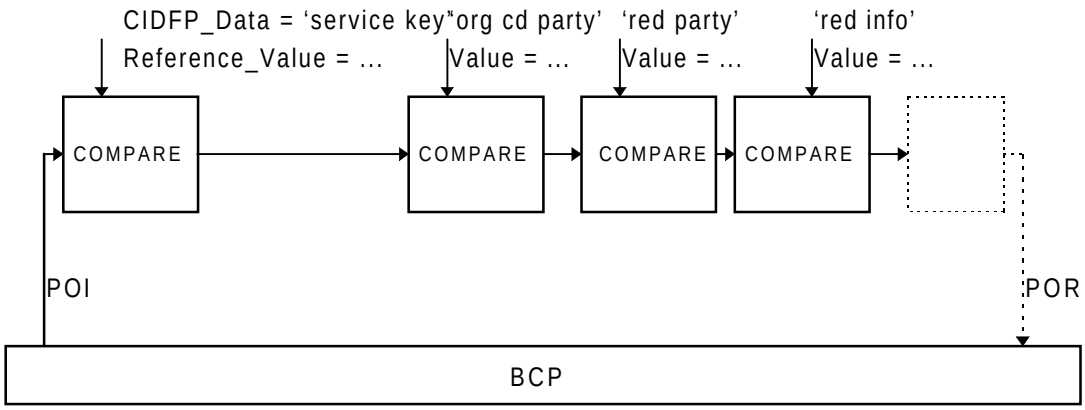


Figure B.5

B.6 Test_GSL_006

This GSL is used for TPs IN131106.

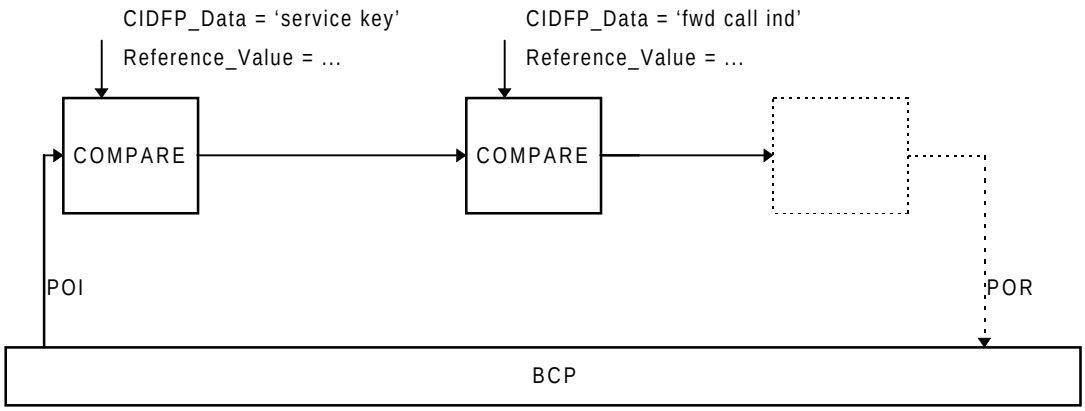


Figure B.6

B.7 Test_GSL_007

This GSL is used for TPs IN131107.

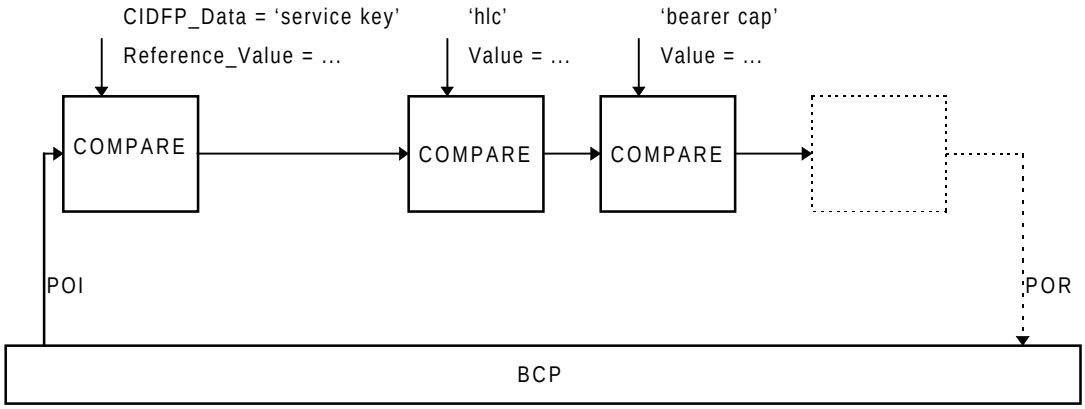


Figure B.7

B.8 Test_GSL_008

This GSL is used for TPs IN131108.

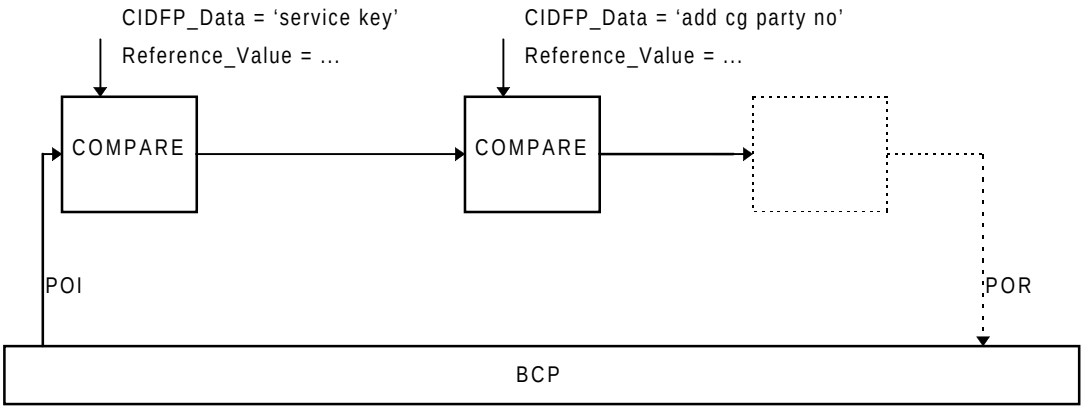


Figure B.8

B.9 Test_GSL_009

This GSL is used for TPs IN131109.

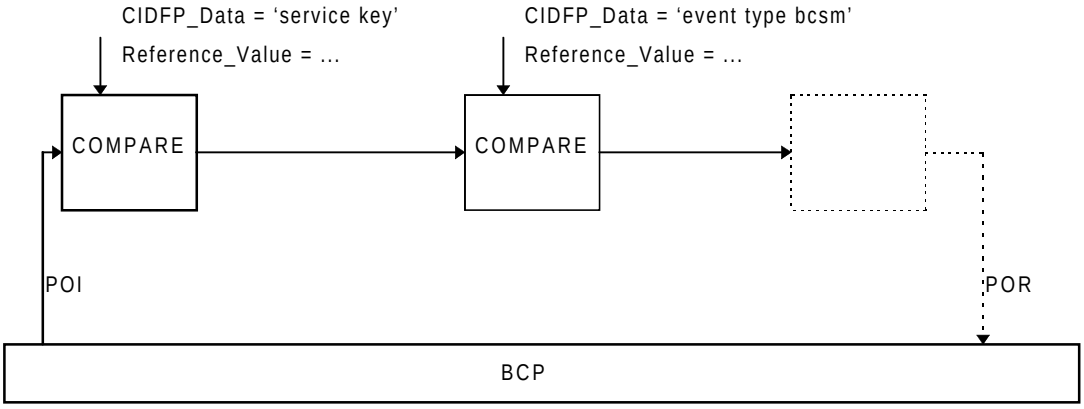


Figure B.9

B.10 Test_GSL_010

This GSL is used for TPs IN131110.

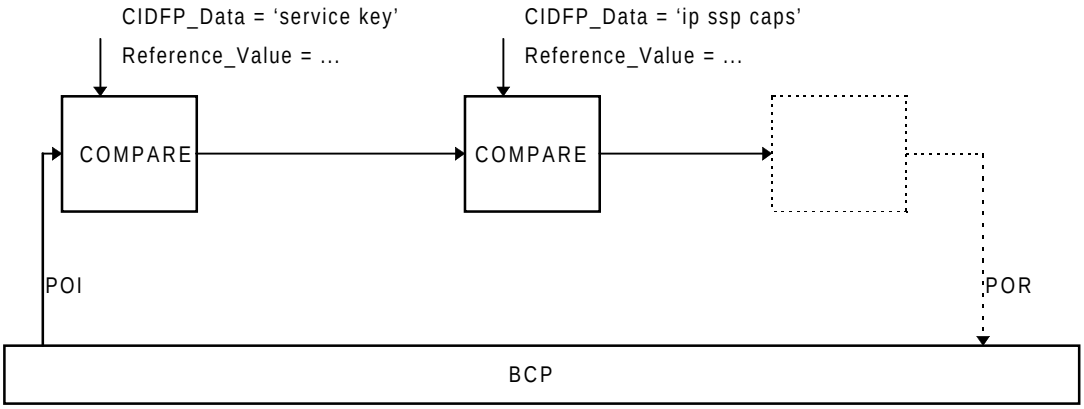


Figure B.10

B.11 Test_GSL_011

This GSL is used for TPs IN131111.

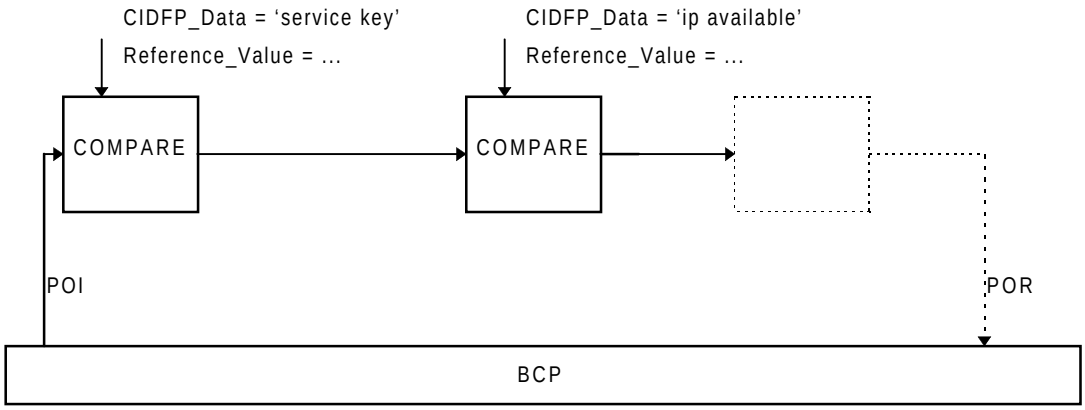


Figure B.11

B.12 Test_GSL_012

This GSL is used for TPs IN131112.

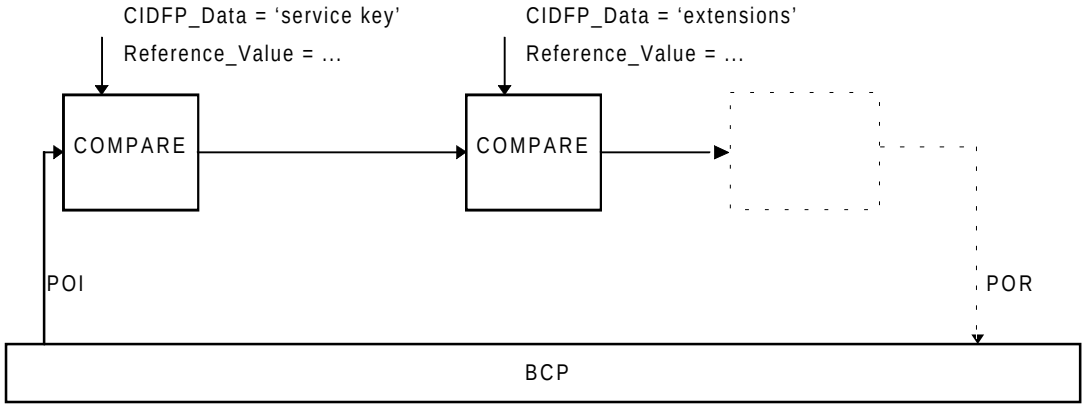


Figure B.12

B.13 Test_GSL_013

This GSL is used for TPs IN131113.

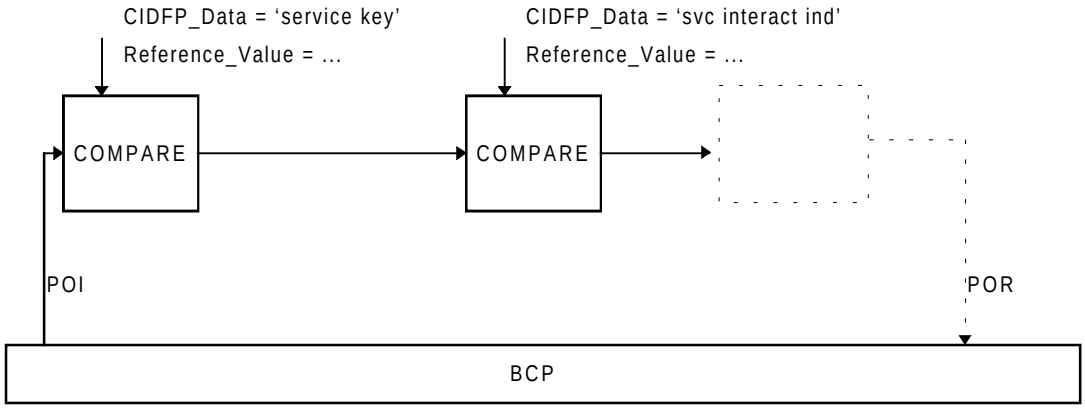


Figure B.13

B.14 Test_GSL_014

This GSL is used for TPs IN131114.

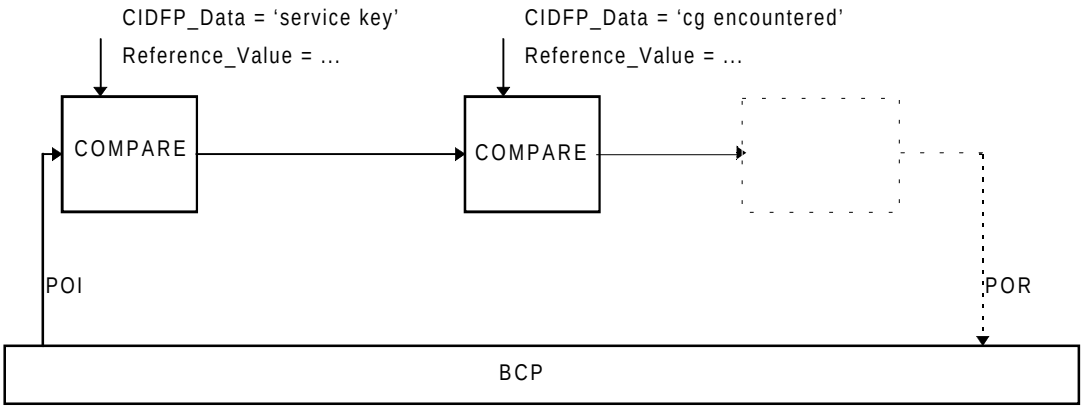


Figure B.14

B.15 Test_GSL_015

This GSL is used for TPs IN131401.

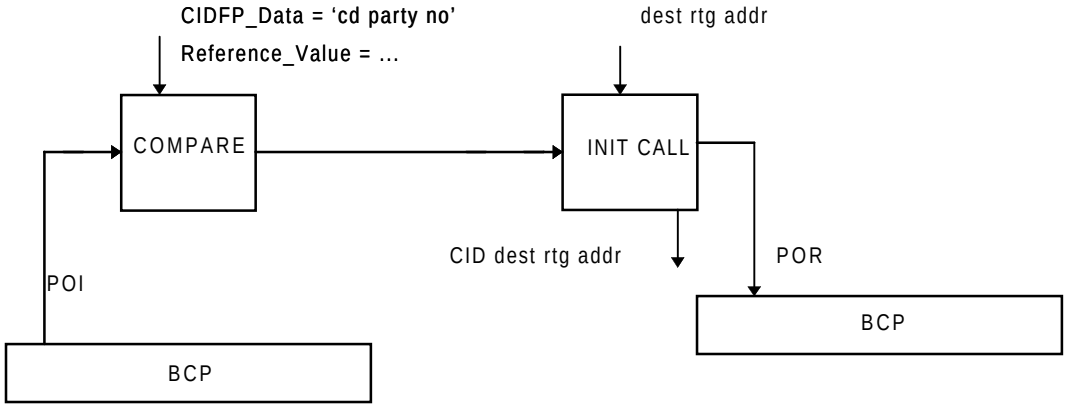


Figure B.15

B.16 Test_GSL_016

This GSL is used for TPs IN131402.

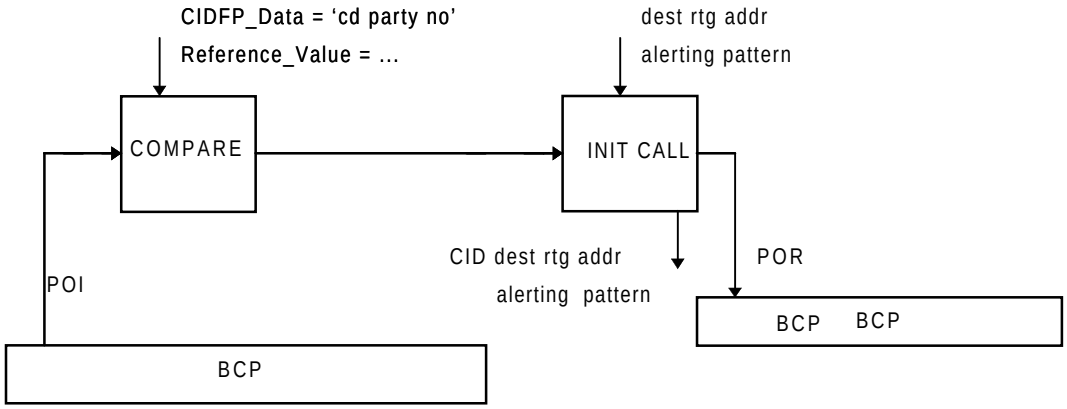


Figure B.16

B.17 Test_GSL_017

This GSL is used for TPs IN131403.

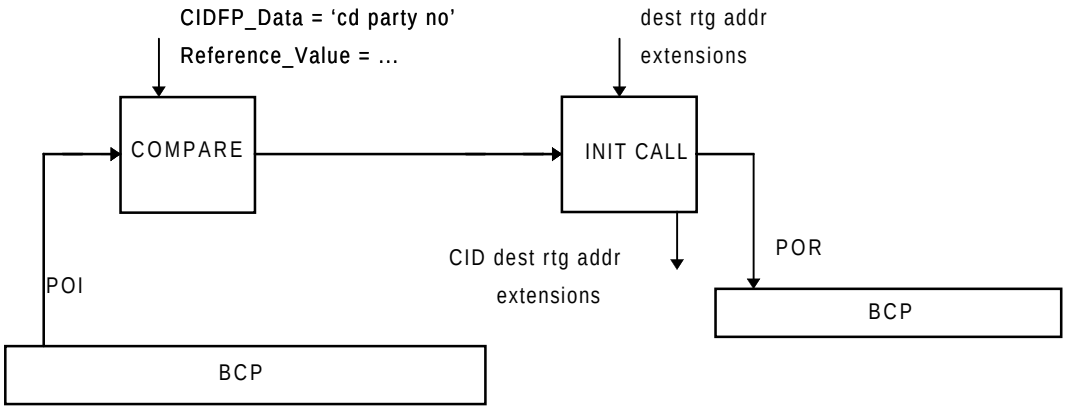


Figure B.17

B.18 Test_GSL_018

This GSL is used for TPs IN131404.

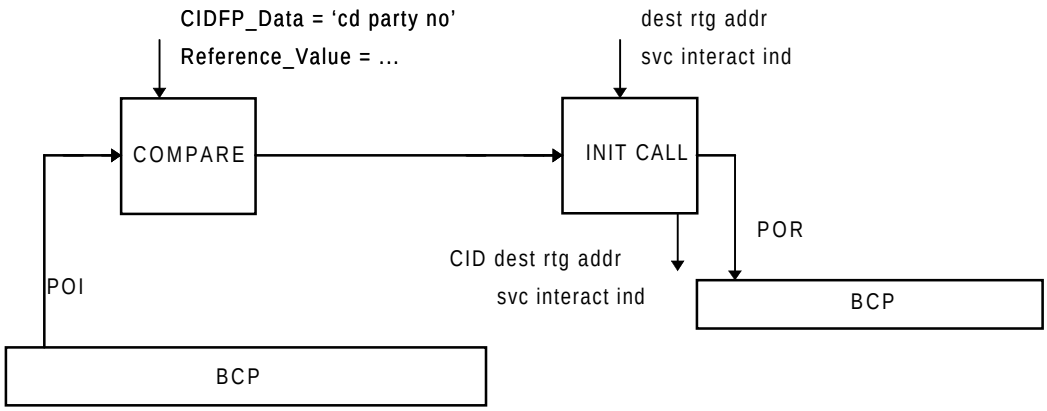


Figure B.18

B.19 Test_GSL_019

This GSL is used for TPs IN131405.

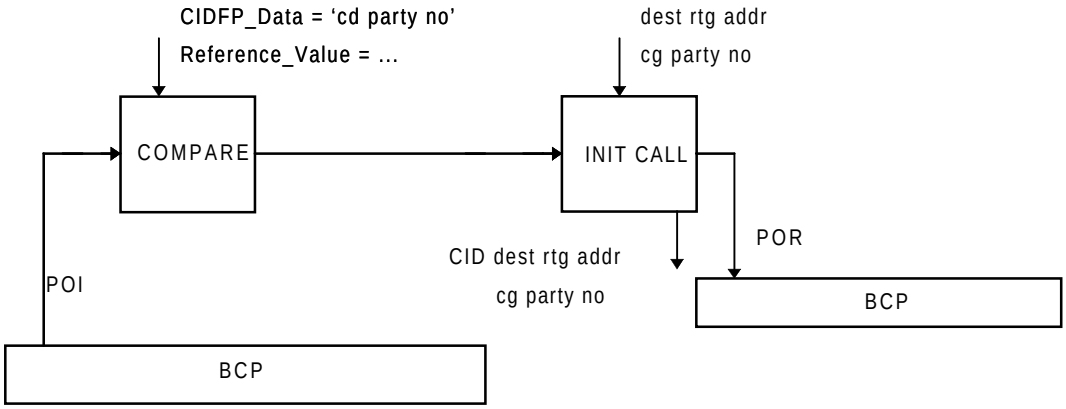


Figure B.19

B.20 Test_GSL_020

This GSL is used for TPs IN132301, IN132302, IN132303, IN132304, IN132305.

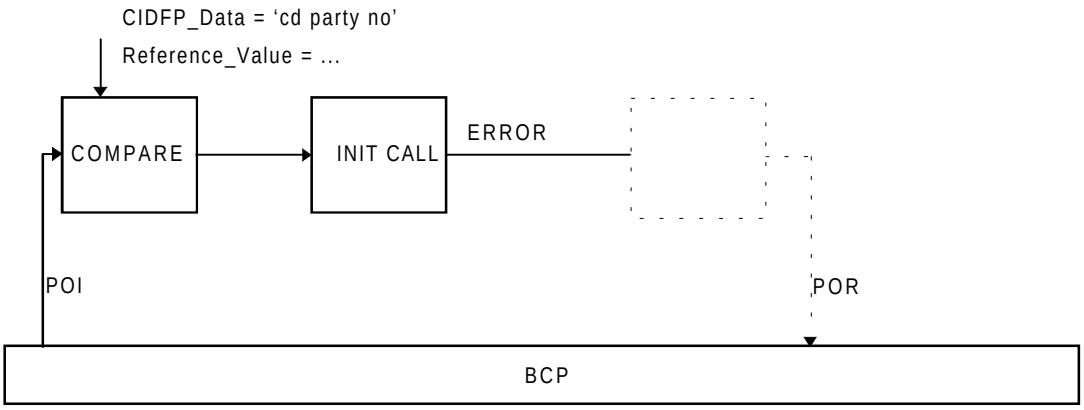


Figure B.20

B.21 Test_GSL_021

This GSL is used for TPs IN132401, IN132403, IN132405, IN132407.

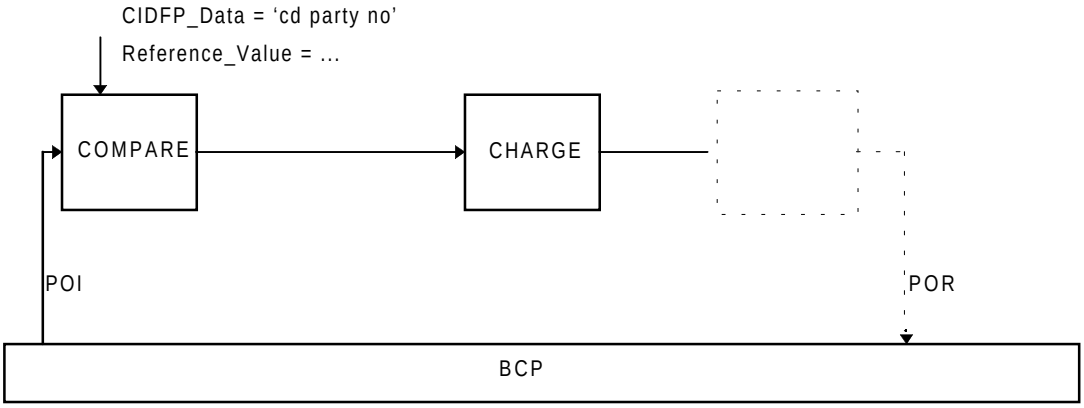


Figure B.21

B.22 Test_GSL_022

This GSL is used for TPs IN132402.

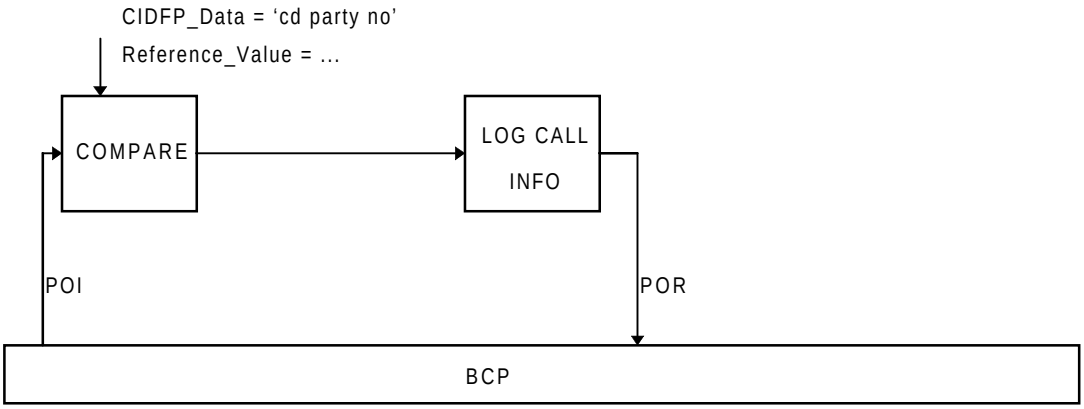


Figure B.22

B.23 Test_GSL_023

This GSL is used for TPs IN132404.

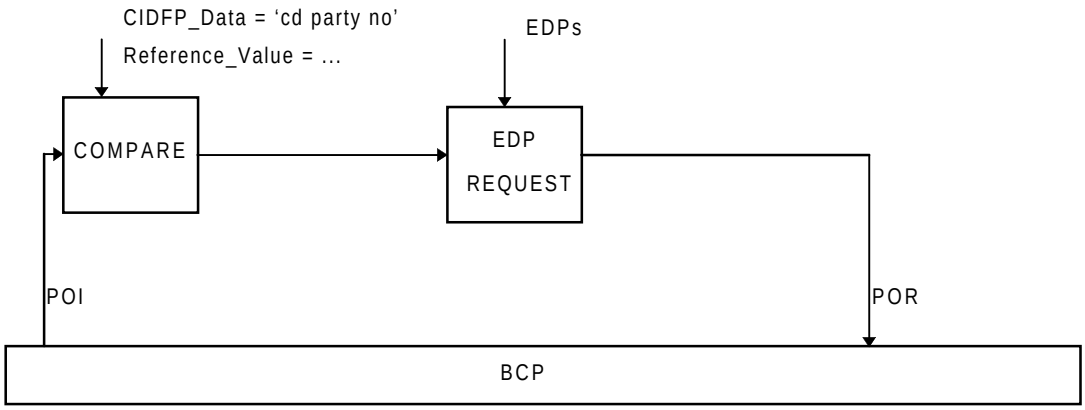


Figure B.23

B.24 Test_GSL_024

This GSL is used for TPs IN132406, IN133001, IN134406, IN135101, IN135401.

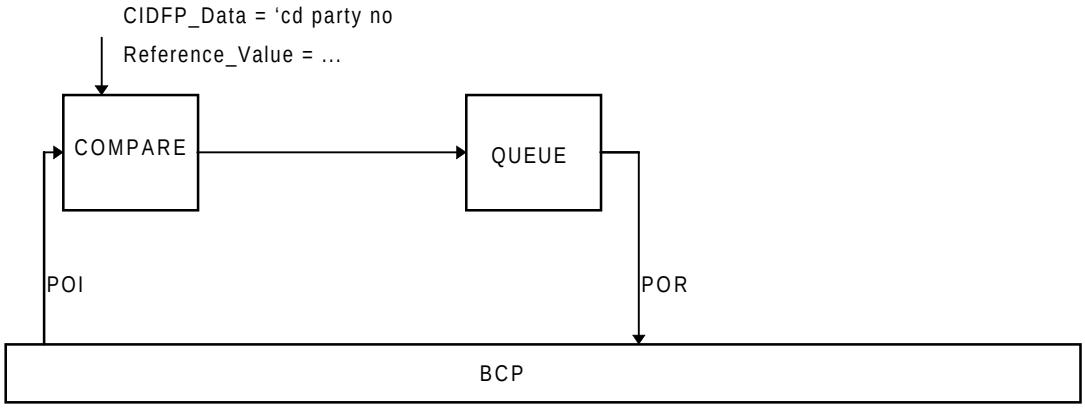


Figure B.24

B.25 Test_GSL_025

This GSL is used for TPs IN132409, IN132410.

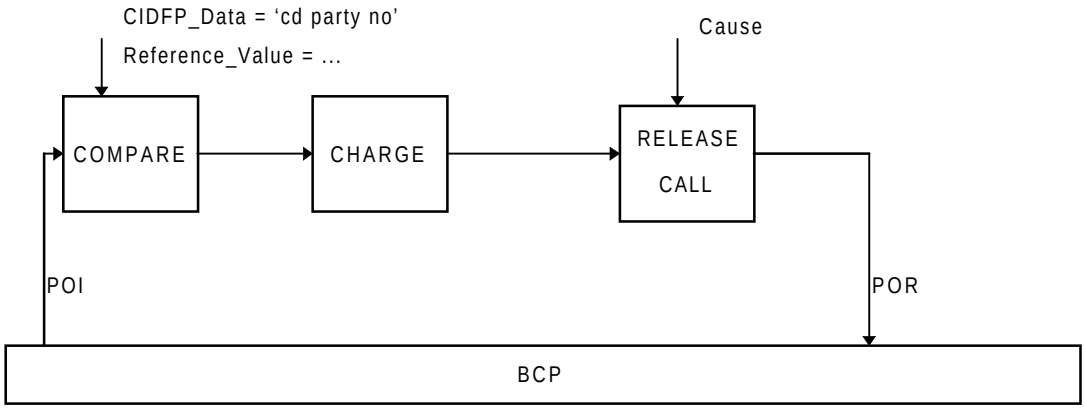


Figure B.25

B.26 Test_GSL_026

This GSL is used for TPs IN132412.

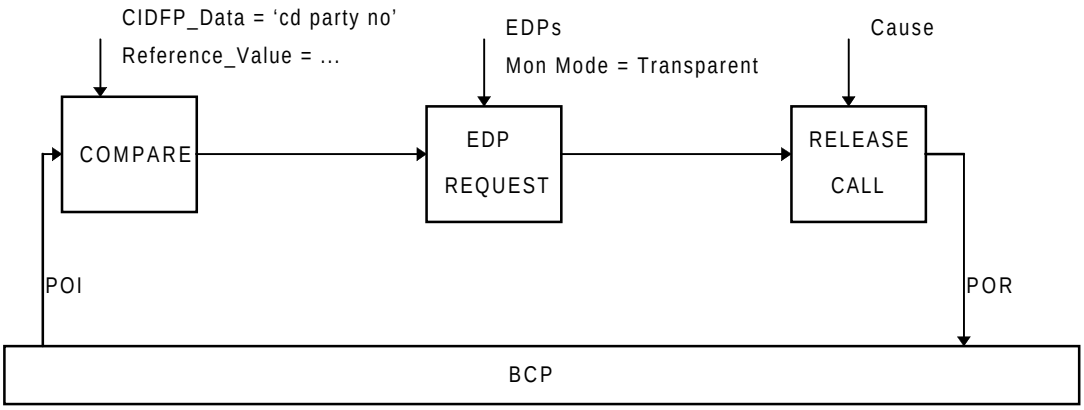


Figure B.26

B.27 Test_GSL_027

This GSL is used for TPs IN132413.

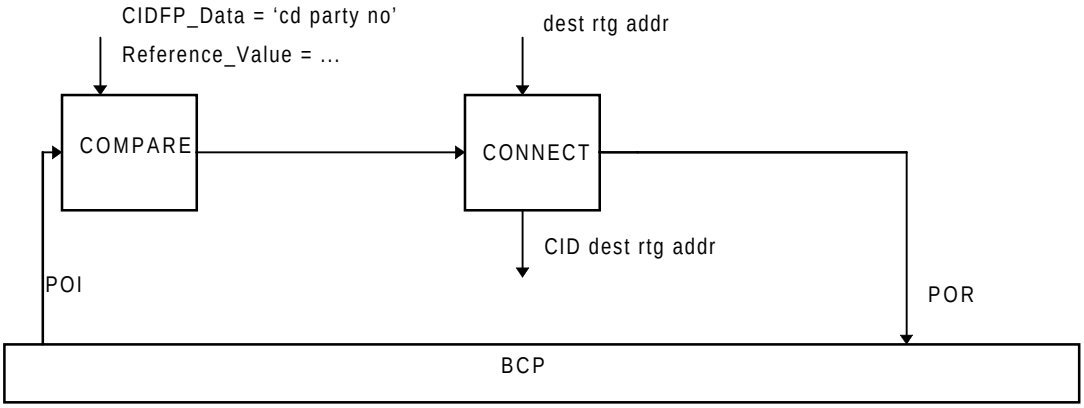


Figure B.27

B.28 Test_GSL_028

This GSL is used for TPs IN132414.

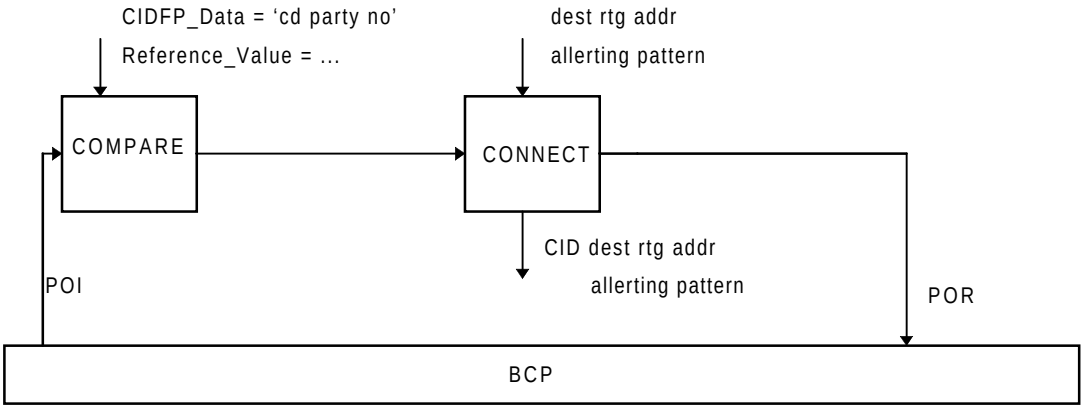


Figure B.28

B.29 Test_GSL_029

This GSL is used for TPs IN132415.

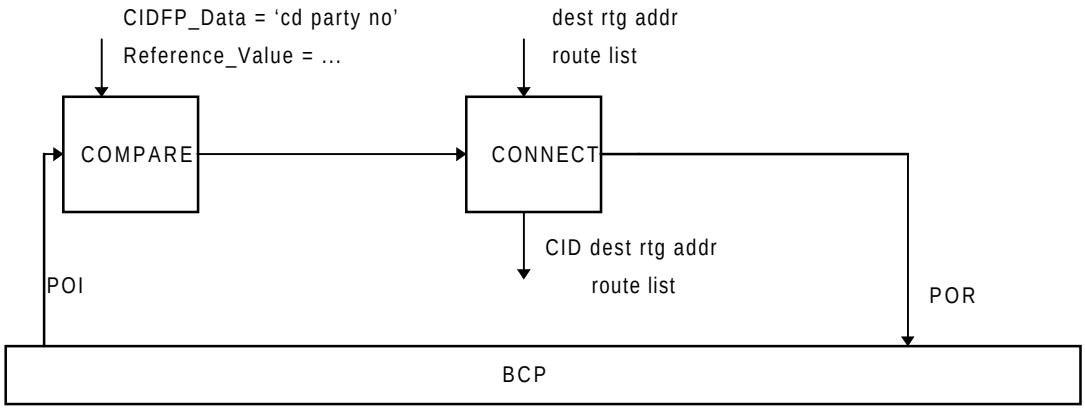


Figure B.29

B.30 Test_GSL_030

This GSL is used for TPs IN132416.

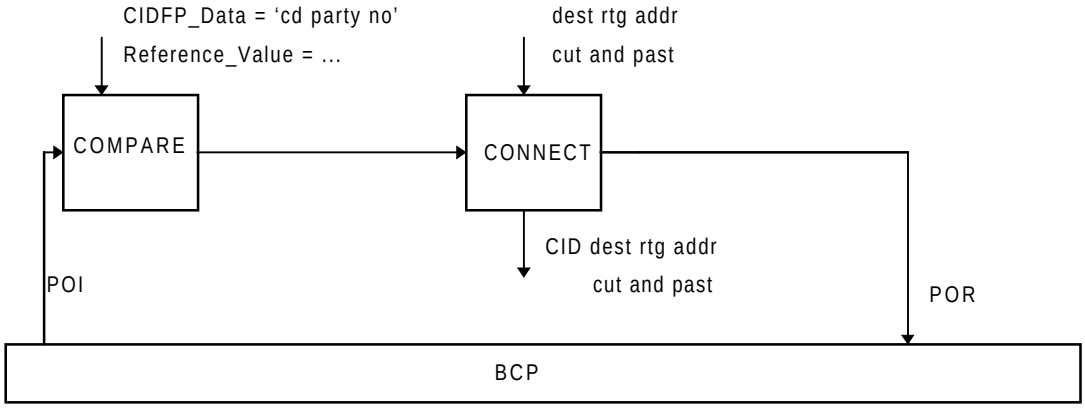


Figure B.30

B.31 Test_GSL_031

This GSL is used for TPs IN132417.

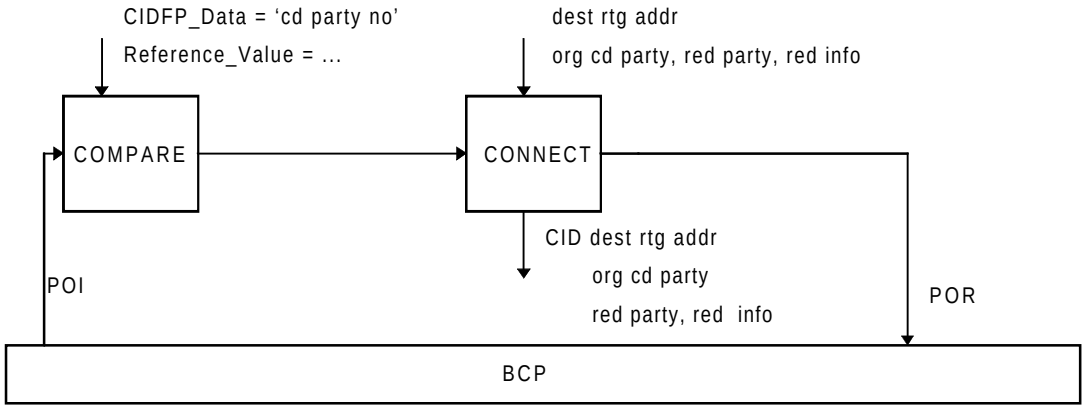


Figure B.31

B.32 Test_GSL_032

This GSL is used for TPs IN132418.

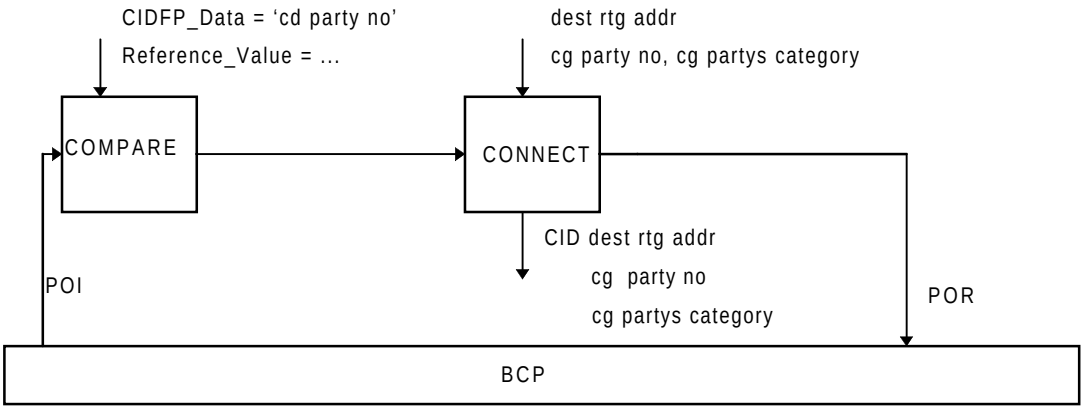


Figure B.32

B.33 Test_GSL_033

This GSL is used for TPs IN132419.

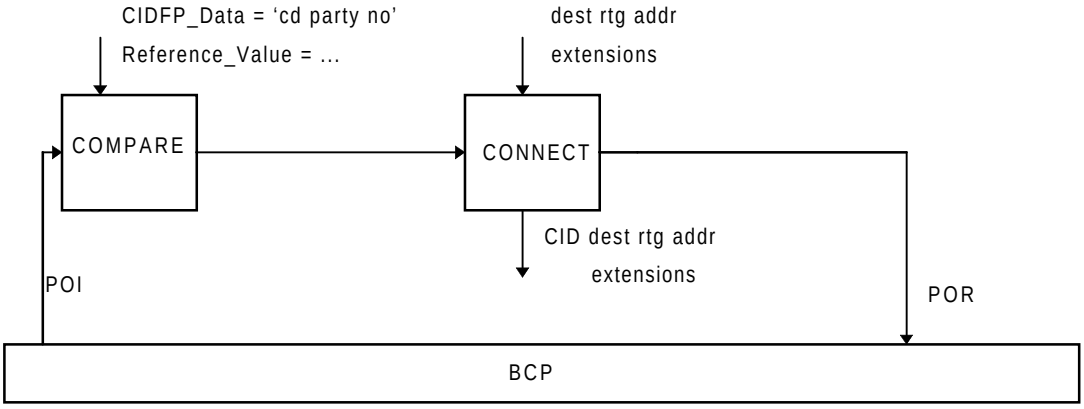


Figure B.33

B.34 Test_GSL_034

This GSL is used for TPs IN132420.

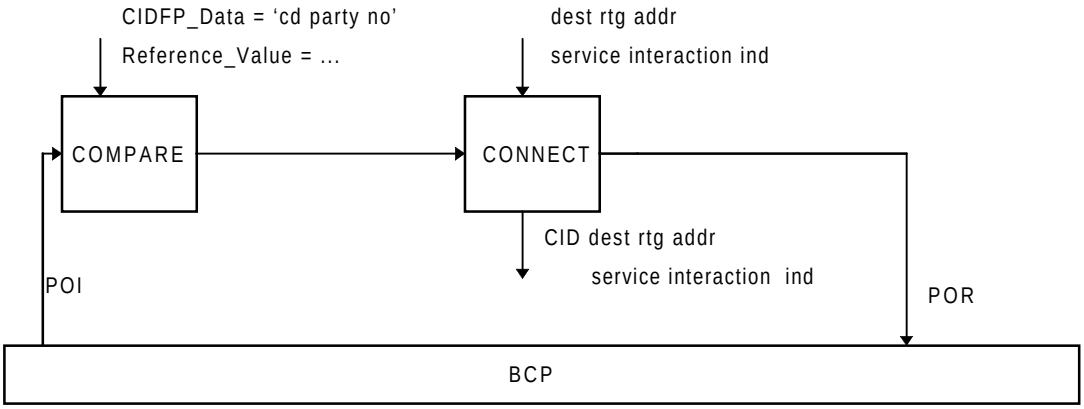


Figure B.34

B.35 Test_GSL_035

This GSL is used for TPs IN132421, IN132422, IN136301 - 136306.

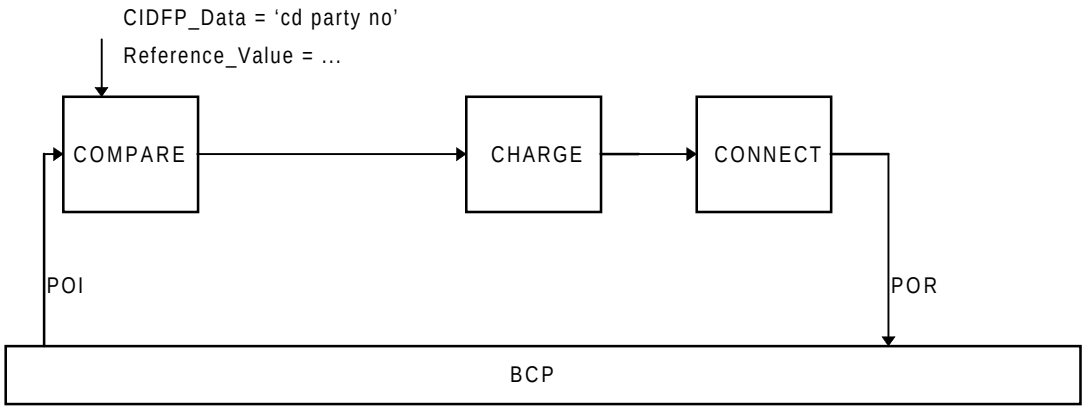


Figure B.35

B.36 Test_GSL_036

This GSL is used for TPs IN132424.

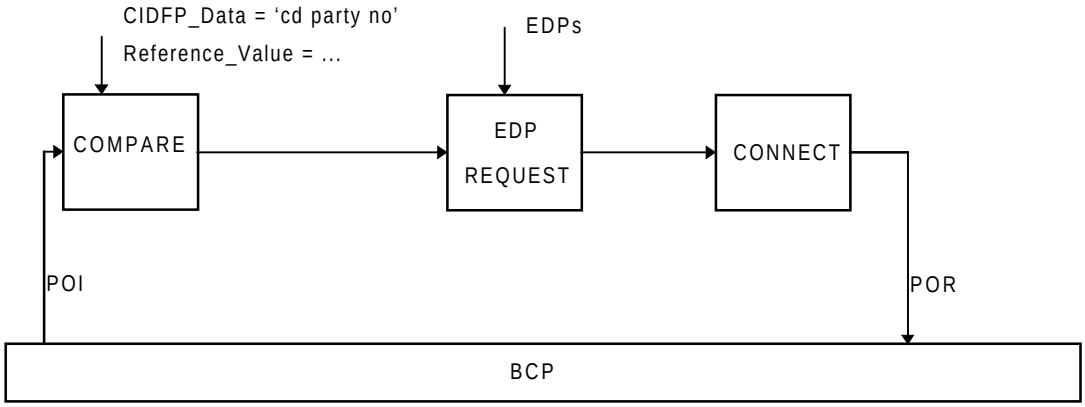


Figure B.36

B.37 Test_GSL_037

This GSL is used for TPs IN132425, IN132426, IN136107, IN136301-136306.

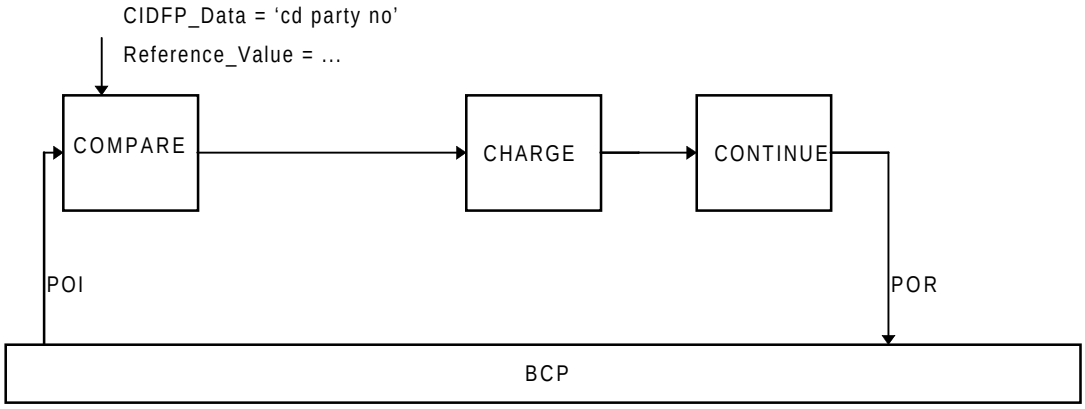


Figure B.37

B.38 Test_GSL_038

This GSL is used for TPs IN132428.

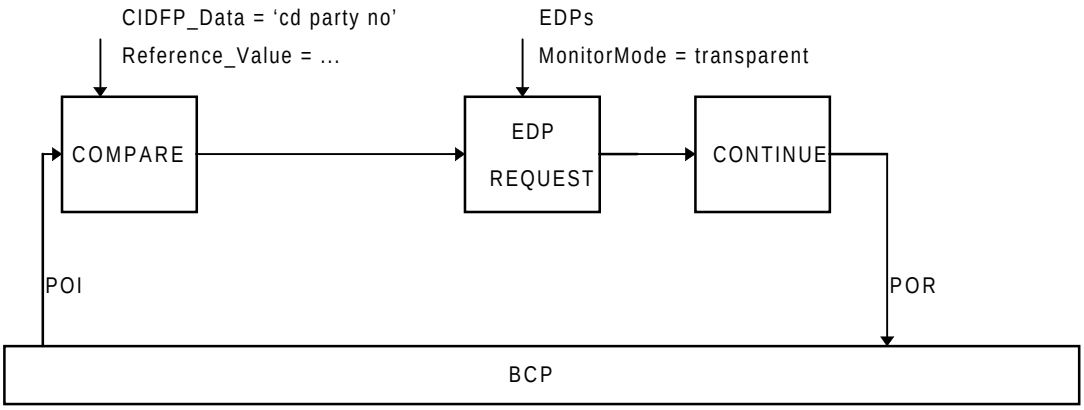


Figure B.38

B.39 Test_GSL_039

This GSL is used for TPs IN136101.

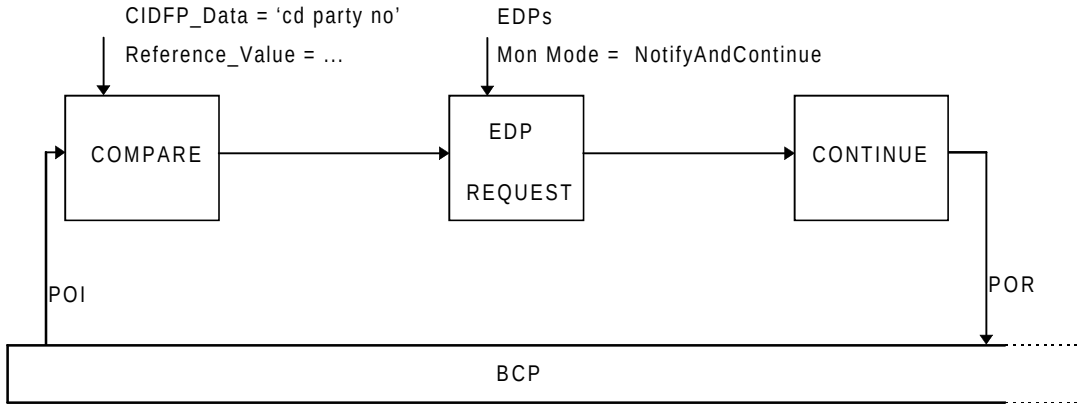


Figure B.39

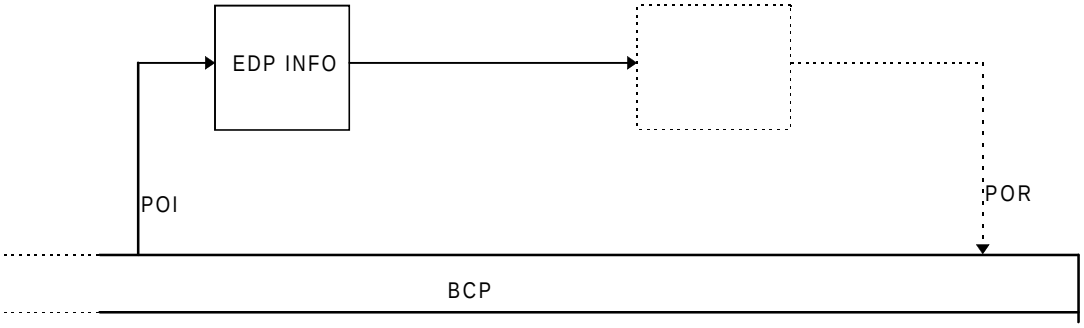


Figure B.40

B.40 Test_GSL_040

This GSL is used for TPs IN136102 - IN136105.

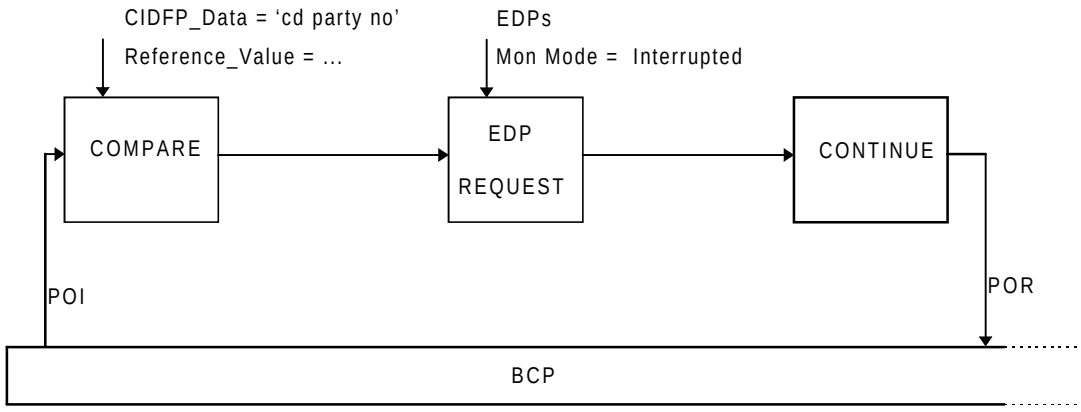
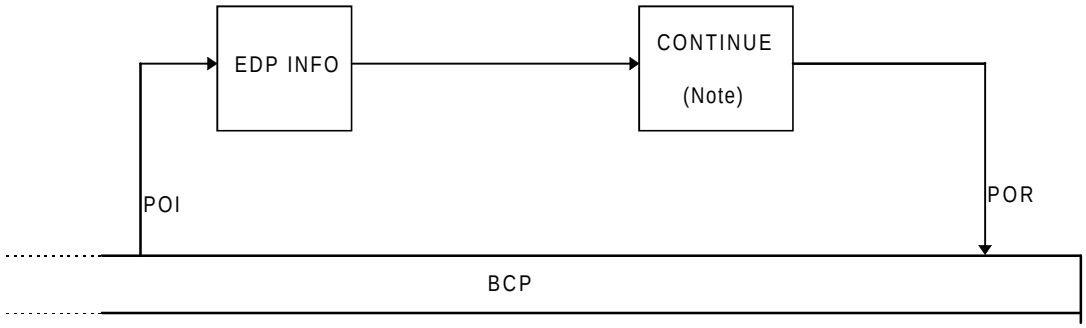


Figure B.41



NOTE: The CONTINUE SIB need to be replaced by:
- EDP REQUEST SIB for sending of RequestReportBCSMEvent invoke,
- LOG CALL INFORMATION SIB for sending of CollectInformation invoke,
- CONNECT SIB for sending of Connect invoke,
- RELEASE CALL SIB for sending of ReleaseCall invoke.

Figure B.42

B.41 Test_GSL_041

This GSL is used for TPs IN136108.

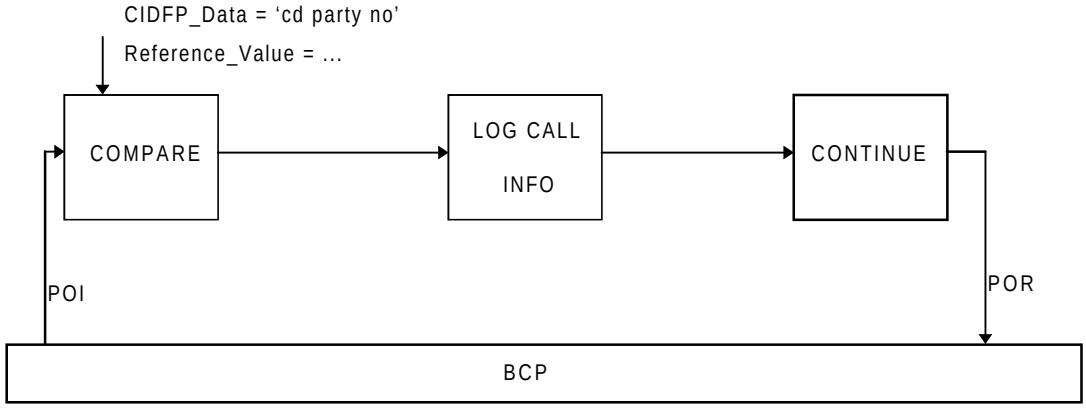


Figure B.43

B.42 Test_GSL_042

This GSL is used for TPs IN136109.

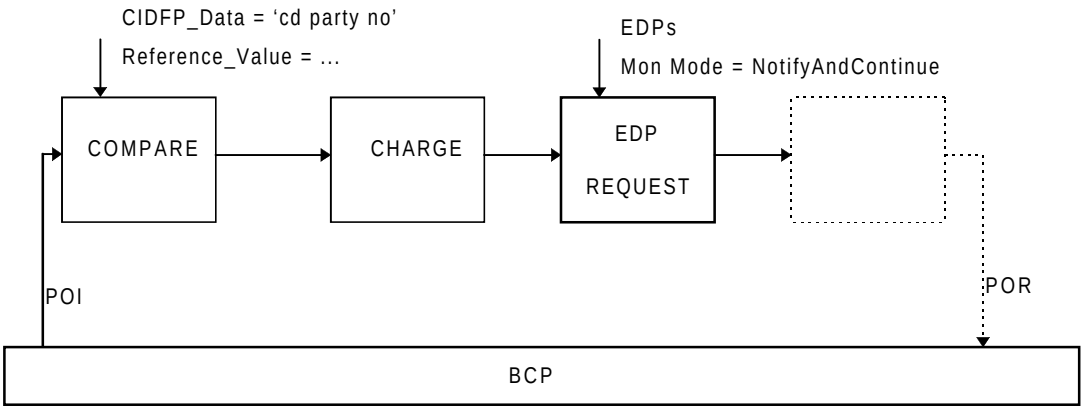


Figure B.44

B.43 Test_GSL_043

This GSL is used for TPs IN136106, IN136107, IN136108, IN136109.

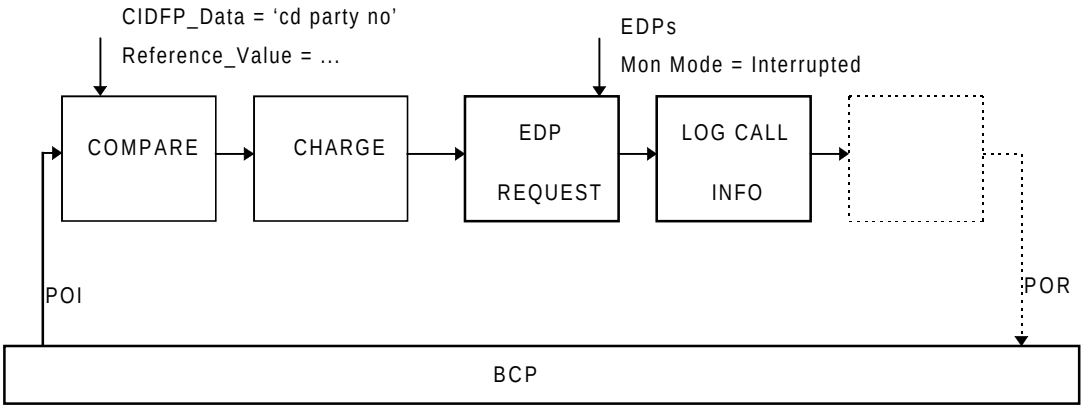
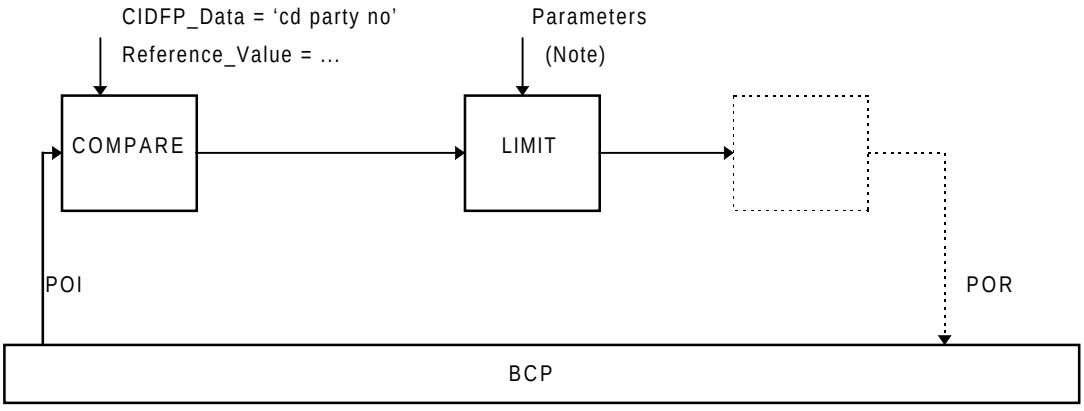


Figure B.45

B.44 Test_GSL_044

This GSL is used for TPs IN13C401-13C405, IN13D101-13D306.



NOTE: The SSD Parameters is dependent on the TP.

Figure B.46

TP IN13C41 SSD Parameters include:

- filterCallTreatment including sFBillingChargingCharacteristics
- filteringCharacteristics being interval
- filteringTimeOut being duration
- filteringCriteria being serviceKey

TP IN13C42 SSD Parameters include:

- filterCallTreatment including sFBillingChargingCharacteristics
- filteringCharacteristics being numberOfCalls
- filteringTimeOut being stopTime
- filteringCriteria being addressAdService including calledAddressValue and ServiceKey

TP IN13C43 SSD Parameters include:

- filterCallTreatment including sFBillingChargingCharacteristics and informationToSend
- filteringCharacteristics being interval
- filteringTimeOut being duration
- filteringCriteria being serviceKey

TP IN13C43 SSD Parameters include:

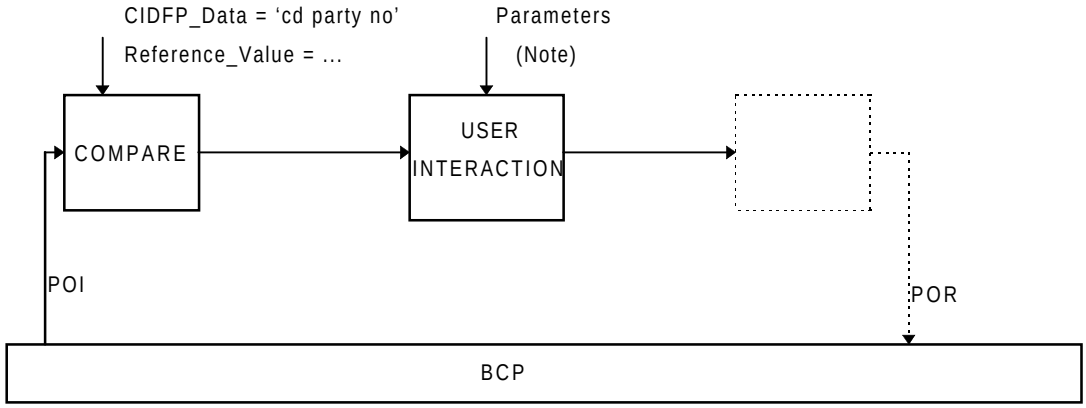
- filterCallTreatment including sFBillingChargingCharacteristics and maximumNumberOfCounters
- filteringCharacteristics being interval
- filteringTimeOut being duration
- filteringCriteria being serviceKey

TP IN13C45 SSD Parameters include:

- filterCallTreatment including sFBillingChargingCharacteristics and releaseCause
- filteringCharacteristics being interval
- filteringTimeOut being duration
- filteringCriteria being serviceKey

B.45 Test_GSL_045

This GSL is used for TPs IN237401-237422, IN239001-239403.



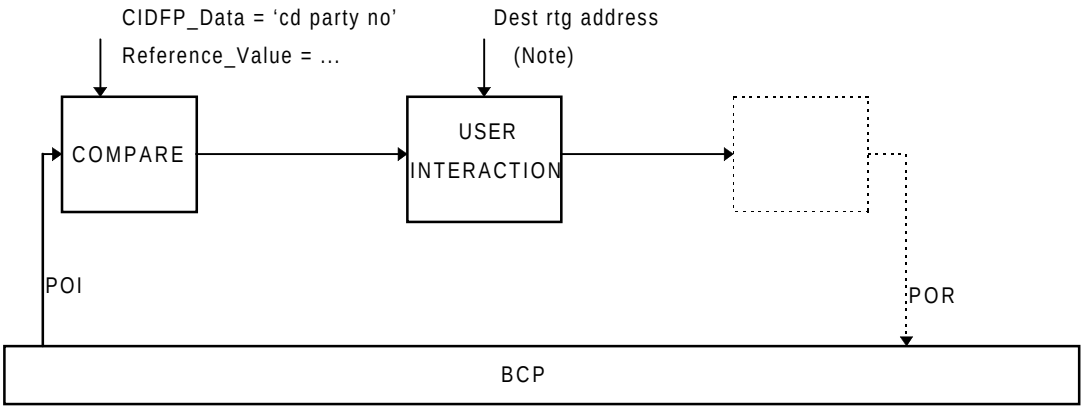
NOTE: Different kind of SSD need to be provided to the USER INTERACTION SIB to get the desired behaviour and message sequences from the IUT for the different TPs.

Figure B.47

ConnectToResource invocation requires SSD Parameters with at least resourceAddress. PlayAnnouncement and PromptAndCollectUserInformation invocation requires SSD Parameters specific for the valid TP.

B.46 Test_GSL_046

This GSL is used for TPs IN337401, IN331101-331304.



NOTE: SSD destinationRoutingAddress provides the USER INTERACTION SIB with the information elements required to advance the call/service attempt with result a Connect invoke.

Figure B.48

B.47 Test_GSL_047

This GSL is used for TPs IN337402-337405, IN338101, IN338103-338105, IN437401, IN438001, IN438101, IN438102, IN439001-439002, IN439102-439104, IN439201, IN439401-439408.

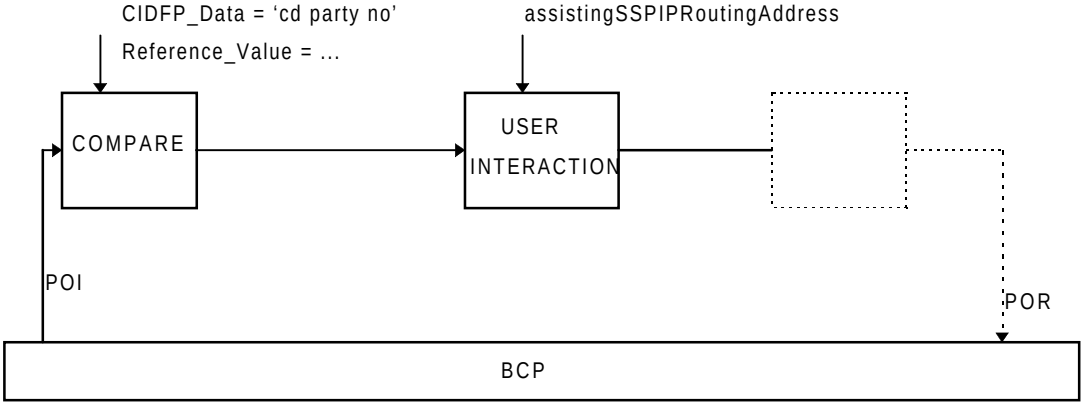


Figure B.49

B.48 Test_GSL_048

This GSL is used for TPs IN338102, IN338301-338306, IN438002, IN438301-438306 IN439307-4393104.

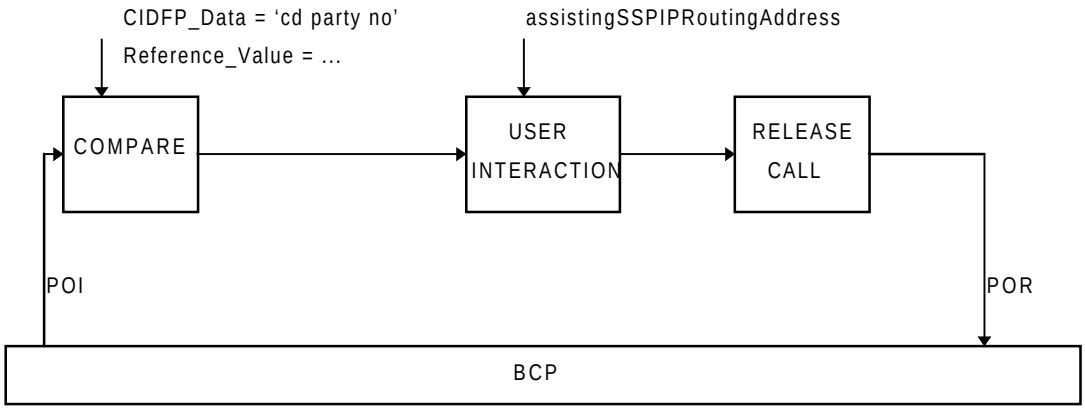


Figure B.50

B.49 Non-covered TPs

Not all test purposes are covered by the above GSLs. This is because all GSLs have a quite similar structure. The test cases that are not covered by the GSLs in this annex contain network specific features which makes it dificult to specify a GSL for it. For these test cases non-standardized SIBs or other methods for triggering have to be used.

The TPs for invalid and inopportune behaviour are not covered by the above GSLs. Further, below a list is given with the TP-identifiers of the TPs that are not covered by the above GSLs:

Test bodies of preamble 4:
IN132408, IN132411, IN132412, IN132427, IN132429, IN132430, IN132437

Test bodies of preamble 6:
IN134401-IN134407

Test bodies of preamble 7:
IN135402, IN135403

Test bodies of preamble 24:
IN239001, IN239101, IN239201, IN239301, IN239302, IN239401 - IN239403

Test bodies of preamble 38:
IN439101, IN439102, IN439301 - IN439306.

Annex C (informative): Test Methods

C.1 Introduction

This annex may be used by a manufacturer to select a suitable testmethod for conformance testing of the SCF-side of the SCF-SSF interface. Some variants of testmethods shall be discussed based on the classifications and requirements outlined in the ISO/IEC 9646-1 [3] and ISO/IEC 9646-2 [4] for conformance testing. The intension of this annex is not to force a manufacturer to use any particular test method but rather to offer different approaches which may be applied e.g. depending on stage of developement.

C.2 Test Methods

C.2.1 Selection of Abstract Test Method(s)

ISO 9646 identifies 4 different Abstract Test Methods (ATM), the local, the distributed, the coordinated and the remote test method. The main characteristics are summerized in table C1 (for a more detailed description, refer to ISO/IEC 9646-2 [4]).

Table C.1: ATM characteristics

Local - 2 Points of Control and Observation (PCO); - Lower Tester (LT) & Upper Tester (UT) within Test System; - PCO to UT is Hardware Interface; - only requirements for test coord. proc. not test coord. proc. itself specified.	*Distributed* - 2 PCO; - PCO to UT is either human user interf. or a programming interf; - only requirements for Test Management Protocol (TMP), not TMP itself specified.
Coordinated - 1 PCO to Lower Tester; - access to upper service boundary of IUT not required; - test coord. proc. realized by means of TMP; - UT is an implementation of TMP.	*Remote* - 1 PCO to Lower Tester - access to upper service boundary of IUT not required; - no assumption about test coord. proc.; - no UT; but if required then performed by System Under Test (SUT); - control of UT-functionality using PCO to LT.

Since the upper service boundary of the IUT is not a hardware interface, no closer view shall be taken on the local test method.

For the coordinated test method the specification of the test management protocol has to be done in the abstract test suite since TMP-PDU's are used as specified test events. Since this is not the case for the TP's in this TSS&TP the coordinated method is not very suitable.

Therefore the discussion shall be focussed on the distributed and remote test method.

C.2.2 The Distributed Test Method

C.2.2.1 Principle

Application of the Distributed Test Method is based on a generic test script for the upper tester. This script is invoked when the SCF receives an InitalDP operation with a particular service key value (or a particular protocol extension).

This generic script is implemented as a loop which reads in a data base (local or remote) some configuration data (parameter) which is interpreted and mapped on to protocol actions.

Application of the distributed test method is shown in figure C.1.

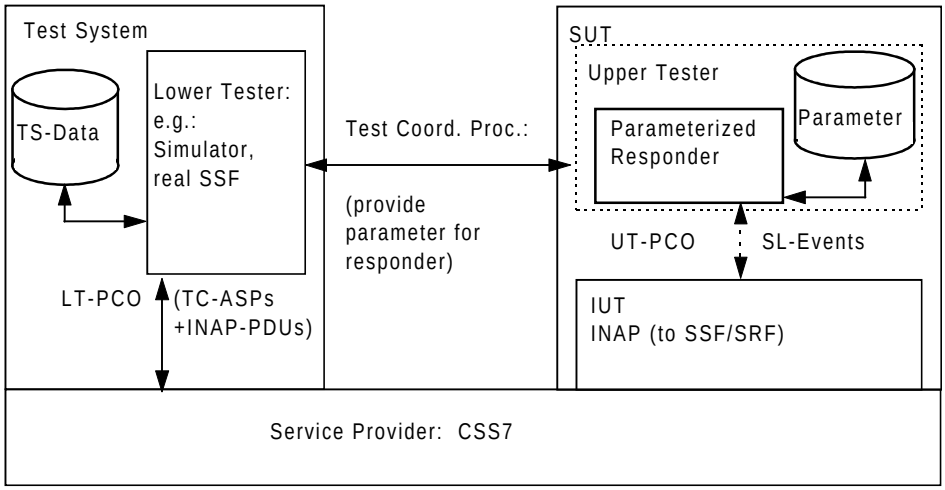


Figure C.1: Test Configuration of Distributed Test Method

C.2.2.2 Lower Tester

For the realization of the lower tester different methods are applicable:

a) The use of a real SSF implementation offers the ability to test both sides of the INAP interface simultaneously. This offers a significiant reduction of effort for implementing the test environment. The effort can be focussed on the monitoring equipment for the INAP interface. On the other Hand the resources (i.e. the SSF) probably have to be shared. It is possible that the test equipment has to be configured in a special way in order to cover the aspects of assisting SSF, direct path and SRF relay. The SSF probably cannot be used to send syntactical incorrect or inopportune INAP operations to the SCF. This means that other equipment has to be used in order to be capable of executing the BI and BO test cases.

b) The use of a simulator offers the installation of a more dedicated test environment. In that case the protocol implementation on the simulator is the reference for testing. Since most simulators are programmable it is possible to implement a fully automated test suite.

In the Distributed Test Method the lower tester has to provide predefined values of one or more parameters for the upper tester in order to ensure the expected behavior of the upper tester for the next (or next series) of test purposes.

C.2.2.3 Upper Tester

For the upper tester a generic test script (or a test responder) together with an associated data base can be used.

It shall retrieve its configuation data from its database. A TMP shall enable the test system to configure the data base before running a test case body.

Concerning the properties of the database the following considerations can be taken into account:

- **Size** of the database:

  1) The database may be very small, holding only the parameter for the next test execution (e.g.: data structure in memory);

  2) The database may be a real database based on proprietary or standardised (e.g.: X.500-accessed) principles.

- **Location** of the database:

  1) The data base can be implemented as a local data base in the SUT;

  2) The data base can be implemented as a remote data base. In that case, it can be implemented as an SDP and accessed using the search operation of the IN-X.500 protocol.

- **Structure** of the database:

  Regardless of where the data base is located it should conceptually contain a collection of attributes whose syntax allows one or more instructions to be stored. The generic test script interprets sequentially the instructions it reads. Unconditional instructions lead to the immediate invocation of an operation on the SCF-SSF or SCF-SRF interface. Conditional instructions leads the SCF to wait for some (possibly specific) events before invoking an operation.

A possible syntax for representing these instructions is:

```
TestCommands        ::=     SEQUENCE OF TestCommand
TestCommand         ::=     CHOICE {    unconditionalAction     Action,
                                        conditionalAction       ConditionalAction   }
Action              ::=     ENUMERATED {    connect,
                                            continue,
                                            releaseCall,
                                            applyCharging
                                            ... }
ConditionalAction   ::= SEQUENCE {  condition   SEQUENCE OF Condition
                                    action      Action }
Condition           ::= ENUMERATED {    wait_for_any_incoming_event,
                                        wait_for_collected_info,
                                        wait_for_o_busy, wait_for_o_answer,
                                        ...}
```

Of course this syntax can be enhanced to allow some parameterization of the operation arguments.

EXAMPLE:

```
Action::= CHOICE { connect  DestinationAddress,     ... }
```

C.2.2.4 Test Coordination Procedures

Service Provider for TMP-underlying service:

- The TMP can use any proprietary or standardised protocol for underlying service depending on the availiability on both sides (test system and SUT) of the TMP (e.g.: serial, TCP/IP, X.25, ...).

- The TMP can use the same service provider as the INAP to be tested (CSS7). The communication can be separated from the INAP on different levels (TC, MTP, separate PCM slot, separate wire).

Type of TMP:

- The TMP can be a proprietary application protocol.

- The TMP can be the SCF-SDF protocol. In that case the information stored in the data base should be modelled according to the X.500 Information Framework. A minimum model could be the following: A test_script object class is defined to hold test script information. This object class is named using a test-script_id attribute.

```
test_script     OBJECT CLASS::=
            { MUST CONTAIN {test_script_id | test_script_behaviour} ID id-oc-test-script }
test_script_id  ATTRIBUTE::=
            { WITH SYNTAX INTEGER EQUALITY MATCHING RULE integerMatch ID id-at-test-script-id }
test_script_behaviour ATTRIBUTE::=
            { WITH SYNTAX TestCommands -- see above ID id-at-test-script-behaviour }
```

Each test case starts with a preamble which sends a modifyEntry operation to the data base. This operation inserts the appropriate behaviour description in the test_script_behaviour attribute of the entry whose name (test_script_id) shall be used as a service key in the InitialDP operation send in the test body.

C.2.2.5 Advantages/Disadvantages

Advantages

This method has the advantages of any method based on a test responder. Moreover it avoids the creation of a set of specific service prior to the execution of a test suite or a test case. It does not require any access to the Service Creation Environment by the test house.

Disadvantages

The method has also the drawbacks of any method based on a test responder, except that an already standardised IN protocol (i.e. the SCF-SDF X.500 protocol) can be used as a Test Management Protocol.

C.2.3 The Remote Test Method

C.2.3.1 Principle

A possibility for the remote test method is the use of a set of SLP's for the upper tester that shall enable the SCF to initiate protocol messages as required for the test purposes. Examples of Service Logics that can be used to create such SLP's are given in annex B.

For this test method it has to be ensured that observation of the upper service boundary is not neccessary for conformance testing.

Application of the Remote Test Method is shown in figure C.2.

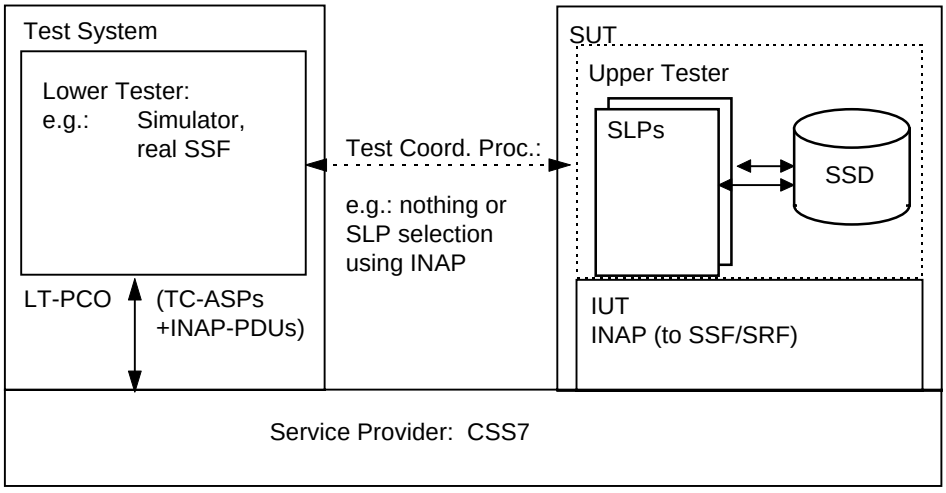


Figure C.2: Test Configuration of Remote Test Method

C.2.3.2 Lower Tester

For the Remote Test Method the same considerations are applicable as for the Distributed Test Method as far as they are not explicitely mentioned to be specific for the Distributed Test Method.

C.2.3.3 Upper Tester

There are in general two approaches in structuring the necessary "test scripts" for testing:

- The "test scripts" consist of elementary SLP's each covering a defined number of INAP operation sequences. This should give a reasonable degree of confidence that also more complex real services shall be possible to execute from the tested SCF. These "test scripts" are assumed to be prepared and installed by the SCF manufacturer prior to test execution.

- The "test scripts" consist of number of more complex SLP's possibly derived from real SLP's already implemented by a manufacturer. This approach decreases the effort of establishing test suites for conformance testing of already implemented SCP's.

C.2.3.4 Test Coordination Procedures

No explicit defined Test Coordination Procedures are necessary except that the manufacturer has to ensure, that the appropriate SLP's are activated prior to test execution.

Two main approaches are identified:

- No test management protocol is defined. Activation and selection of each SLP is done manually by the operator.

- The test management protocol is represented by the SLP selection mechanism, which is based on the use of one or more parameter of the dialogue initiating INAP operation (e.g. Called Party Address, Sevice Key, Calling Party Address parameter of the IDP-Operation). Therefore the TMP using INAP itself and underlying service provider for connecting upper and lower tester. Because this approach allows the ATS to be more specific and enables a fully automated test campaign, it should be preferred. Note that the TPs specified in this ETS use this concept.

C.2.3.5 Advantages/Disadvantages

Advantages:

- No additional demands on the SCF implementation are required.

- Proprietary mechanisms for the creation of SLPs can be used.

- The use of a SLP selection mechanism makes it easier to automize test execution.

- There is no need to coordinate Upper Tester and Lower Tester.

- The use of predefined test scripts shall be close to how a SLP would normally be designed for a real IN service application.

- A well defined set of test scripts is a good base to compare non-functional behavior (e.g. performance) of different SCF implementations.

Disadvantages:

- Installation of the test scripts shall add to the test preparation time for the SCF manufacturer.

- Preparation of additional tests shall require additional SLP design.

- The use of standardised SLP's may force a manufacturer to implement functionality for test purposes, which they shall never use in real services.

C.2.3.6 Open Issues

- A method to develop executable test scripts.

- Find out an implementation independent or formal description of Service Logic Programmes. For instance on the base of Service Independend Building blocks (SIBs) or a defined formal description language for services.

C.2.4 Advantages/disadvantages of both methods

In this subclause the two previously described methods, the remote and distributed test methods, are compared to each other. A "+" means that the concerning method has an advantage on this aspect.

Table C.2

Aspect:	remote TM Predefined Script	distributed TM Parameterized Script
Effort of implementation to SUT	+	-
Effort of test preparation for SUT	-	+
Complexity of ATS design	+	-
Realistic test configuration compared to actual applications	+	-
Suitability for benchmarking	+	-
Extendability of test cases (for same TSS&TP)	-	+
Dependancy on SCF/SLP implementation	-	+
Coverage of INAP specification	+	+
Extendability of test cases (for INAP extensions)	-	-

History

Document history			
August 1996	Public Enquiry	PE 112:	1996-08-19 to 1996-12-13