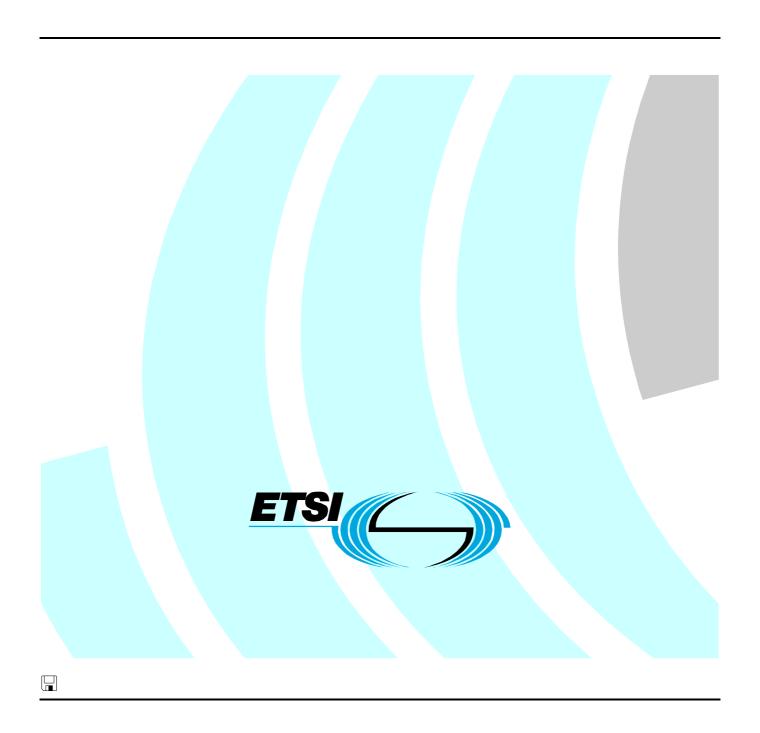
ETSITS 186 011-1 V3.1.1 (2011-06)

Technical Specification

IMS Network Testing (INT); IMS NNI Interoperability Test Specifications; Part 1: Test Purposes for IMS NNI Interoperability



Reference

RTS/INT-00032-1

Keywords

IMS, interworking, interoperability, NNI, testing

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee IMS Network Testing (INT).

The present document is part 1 of a multi-part deliverable covering the IMS NNI Interoperability Test Specifications, as identified below:

- Part 1: "Test Purposes for IMS NNI Interoperability";
- Part 2: "Test Descriptions for IMS NNI Interoperability".
- Part 3: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT)".

Introduction

The IP Multimedia core network Subsystem (IMS) is a key component in the ETSI NGN architecture. Each IMS consists of multiple functional entities and interfaces. The goal of this work is to provide the interoperability tests for standardized network to network interfaces (NNI) of the IMS core network that are based on SIP messages.

Test purposes defined in the present document have been developed based on the requirements stated in the 3GPP IMS Release 8 specification.

1 Scope

The present document specifies interoperability Test Purposes (TPs) for IMS NNI interworking based on the IP Multimedia Call Control Protocol based on Stage 3 Session Initiation Protocol (SIP) and Session Description Protocol (SDP) standard, TS 124 229 [1].

TPs are defined using the TPLan notation also described in ES 202 553 [4]. Test purposes have been written based on the test specification framework described in TS 102 351 [2] and the interoperability testing methodology defined in TS 102 237-1 [3], i.e. interoperability testing with conformance checking.

The scope of these test purposes is not to cover all requirements specified in TS 124 229 [1]. TPs have been only specified for requirements that are observable at the interface between two IMS core network implementations, i.e. IMS NNI. For the purpose of the present document an IMS core network as a whole - not its components - are considered to be under test.

In a separate section a set of test purposes has been developed to cover the MGCF aspects as defined in clause 5.5 of TS 124 229 [1]. To trigger events at the Mg and Mj reference point the IMS core network will connect to a PSTN network via an MGCF. The interworking between IMS and PSTN is described in TS 129 163 [6].

NOTE: Requirements pertaining to a UE or an AS implementation or IMS core network requirements that can only be observed at the interface between UE and IMS CN are explicitly not within the scope of the present document. The latter requirements have been dealt with from a UE and conformance perspective in TS 134 229-3 [5].

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

2.1 Normative references

The following referenced documents are necessary for the application of the present document.

- [1] ETSI TS 124 229 (V8.10.0): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3 (3GPP TS 24.229 version 8.10.0 Release 8)".
- [2] ETSI TS 102 351: "Methods for Testing and Specification (MTS); Internet Protocol Testing (IPT); IPv6 Testing: Methodology and Framework".
- [3] ETSI TS 102 237-1: "Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON) Release 4; Interoperability test methods and approaches; Part 1: Generic approach to interoperability testing".
- [4] ETSI ES 202 553: "Methods for Testing and Specification (MTS); TPLan: A notation for expressing Test Purposes".
- [5] ETSI TS 134 229-3 (V7.2.0): "Universal Mobile Telecommunications System (UMTS); LTE; Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Part 3: Abstract test suite (ATS) (3GPP TS 34.229-3 version 7.2.0 Release 7)".

- [6] ETSI TS 129 163 (V8.10.0): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Interworking between the IP Multimedia (IM) Core Network (CN) subsystem and Circuit Switched (CS) networks (3GPP TS 29.163 version 8.10.0 Release 8)".
- [7] Rich Communication Suite Release 2: "Technical Realization 1.1".

2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

Not applicable.

3 Abbreviations

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

3GPP 3rd Generation Partnership Project

AS (IMS) Application Server CF (Test) Configuration CN Core Network

CSCF Call Session Control Function
DNS Domain Name System
HSS Home Subscriber Server
I-CSCF Interrogating CSCF
IMS IP Multimedia Subsystem

IBCF Interconnection Border Control Gateway

IOI Inter Operator Identifier

IP Internet Protocol
IUT Implementation U

IUTImplementation Under TestMGCFMedia Gateway Control FunctionNGNNext Generation NetworkNNINetwork-to-Network InterfacePCOPoint of Control and Observation

P-CSCF Proxy CSCF

PSTN Public Switched Telephone Network

RC Requirements Catalogue

RQ Requirement S-CSCF Serving CSCF

SDP Session Description Protocol SIP Session Initiation Protocol

TP Test Purpose

TPLan Test Purpose Notation
TSS Test Suite Structure
UE User Equipment

URI Uniform Record Identifier

4 Test Suite Structure (TSS)

The Test Suite Structure is based on a Requirements Catalogue which was established prior to test purpose specification. This RC extracts all requirements from [1] which are relevant to the scope of this work. The TSS is defined by the groups within the following TPLan specification of test purposes. The numbering is not contiguous so that new TPs can be added at a later date without the need to completely renumber the TSS groups.

NOTE: The requirements catalogue is at this point not accessible as an ETSI document. Requirement identifiers of the catalogue have been replaced in the present document with the location of the requirement in the base specification, i.e. base specification type, identifier, version, clause and paragraph.

EXAMPLE: TS 124 229 (V8.10.0), clause 5.2.6.3 ¶66

The test purposes have been divided into 5 major groups:

- 1) General Capabilities
- 2) Registration procedures
- 3) Dialog procedures
- 4) Messaging procedures
- 5) Supplementary services
- 6) MGCF tests for IMS-PSTN interconnection

These groups have been further divided into subgroups according to IMS components as follow:

```
Group 1: IMST2 NNI IOP
Group 1.1: General Capabilities
Group 1.2: Registration procedures
Group 1.2.1: Registration at P-CSCF
Group 1.2.2: Registration at S-CSCF
Group 1.2.3: Registration at I-CSCF
Group 1.2.4: Registration at IBCF
Group 1.3: Dialog procedures
Group 1.3.1: Dialog at P-CSCF
Group 1.3.2: Dialog at S-CSCF
Group 1.3.3: Dialog at I-CSCF
Group 1.3.4: Dialog at IBCF
Group 1.4: Messaging procedures
Group 1.4.1: Messaging at P-CSCF
Group 1.4.2: Messaging at S-CSCF
Group 1.5: Supplementary service procedures
Group 1.5.1: Supplementary services at S-CSCF
```

5 Test Purposes (TP)

The test purposes have been written in the notation TPLan [4] which has been developed at ETSI to express test purposes in a more formal manner. All TPLan TPs have been converted into a symbolic tabular presentation format which is shown in this clause. TPs in the standardized textual TPLan syntax are collected in archive ts_18601101v030101p0.zip that is included in the electronic annex of the present document. The two presentation formats, i.e. textual and symbolic tabular, contain the same information and shall therefore be considered equivalent. In the case that there appears to be syntactical or semantic differences between the two then the files in the electronic annex take precedence over the following tables. Configurations that are referenced by test purposes are shown in Annex B.

5.1 The tabular symbolic TPLan presentation format

Each table contains header fields and a description part. The header fields identify the TP, list the related clause reference the base specification that the TP was derived from, introduce the TP with a short summary, references the related test configuration and test case in the ATS.

The description part presents the TP using two sections:

- a) initial conditions that have to be fulfilled for the test purpose body to be valid; and
- b) the test purpose body which is illustrated with one or more stimulus/response pairs.

Both sections are further substructured with columns for affected entities from the test configurations, i.e. IUT, UE, UE2, IMS (test system component) and AS.

The condition section lists one or more conditions that have to be fulfilled in order for the test purpose body to apply. Each condition has a description and either " \checkmark " or " \times " marks to indicate all the entities affected by this condition. " \checkmark " marks indicates a positive condition, e.g. "A is registered in B", whereas " \times " marks indicate a negative condition, e.g. "B *not* configured for feature Z". If there is no mark in a column then the condition does not apply for that entity, e.g. entity A is not involved in the condition "B not configured for feature Z". It is assumed that all listed conditions have to be fulfilled in the order listed, i.e. the list reflects an "and" relation.

Table 1 shows an example condition section illustrating all of the above examples.

Table 1: Example TP condition section

Entitie	es	Condition
A B		
✓	✓	A registered in B
	x	B not configured for feature Z

The test purpose body section contains one or more steps identified with a number in the first column. Steps belonging IUT stimuli are shown with a green background whereas steps related to IUT responses are shown with a beige background. All listed steps are assumed to be carried out in increasing step number, i.e. they reflect an "and" relation. "or" relations at the level of entire messages are shown with lowercase letters following the step number identifying the different alternatives, e.g. "2a" versus "2b". Each step indicates the exchange of a message from a source entity (identified by the direction symbols "�" or "�"), e.g. entity A sends the message, to a destination entity (identified by the direction symbols "�" or "�"), e.g. entity B receives the message. The use of the "||" symbol in combination with the direction symbols, e.g. "||�", indicates that a particular message shall either not be sent or received by an entity, e.g. entity B did not send the message.

Additional information about valid as well as invalid message content is presented in the "Message" column. First general information about message, e.g. its type, destination, attributes, etc, are shown in bold font. Below this information message headers or parameter content that must be present in that message are listed using "\scriments" symbols whereas headers or parameter content that must *not* be present are listed using the "\scriments" symbols. The "\scriments" symbol indicates a valid message parameter value where as the "\scriments || "symbol indicates an invalid message parameter value. Any content, e.g. header or parameter, which is not explicitly mentioned in a message description of a TP is not restricted by that TP. The "\scriments || "symbol together with "\scriments || "symbol means that the message header MUST be present but it cannot contain a specific message parameter value. The "\scriments || "symbol together with "\scriments || "symbol means that the message header MAY be present but it cannot contain a specific message parameter value.

Finally, the interface identifier to which a message exchange pertains may be shown in the column labelled "IF".

Table 2 shows an example test purpose body section illustrating all of the above examples.

Table 2: Example TP body section

	Α	В		
Step	Dire	ction	Message	IF
1	Ų,	£	some request ✓ this header ✓ this one parameter → this value ✓ this other parameter → that value ✗ that parameter ✗ that header	Xx
2a	Ŷ <u>t</u>	Ŷħ	failure response	Xx
2b	€ ∥	ПĄ	no message	Xx

5.2 General Capabilities

					Test Purpose			
Identif	dentifier: TP_IMS_4002_01							
Summ	ary:	IMS CN components shall support SIP messages > 1300 bytes						
IUT Role: IMS A								
Refere	nces:	TS 124 229	9 (V8.10.0)	[1],	Config Ref:	CF_INT_CALL		
clause 4.2A ¶1								
	Entities				Condition	n		
	UE A	IMS A	IMS B	UE B				
	✓	✓			UE A registered in IMS A			
			✓	✓	UE B registered in IMS B			
	UE A	IMS A	IMS B	UE B				
Step		Direc	tion		Message		IF	
4	\$	Ð			MESSAGE addressed to UE B			
ı	♦	ΣV			✓ a Message Body greater than 1 300 bytes			
2		₩,	Ð		MESSAGE			
_		V	2		✓ the Message Body greater that	an 1 300 bytes		

5.3 Registration Procedures

5.3.1 Registration at P-CSCF

				Test Purpose		
Identif	ier:	TP_IMS_5005_01		<u>-</u>		
Summary: The P-CSCF shall support the Path header						
IUT Ro	ole:	IMS A	••			
Refere	ences:	TS 124 229 (V8.10 clause 5.2.1 ¶8	0.0),	Config Ref:	CF_ROAM_REG	
	Entities		Cond	tion		
	IMS A IMS B		UE B			
		✓	✓	IMS B has challenged with a REGISTER request of UE B	101 response the	
	IMS A	IMS B	UE B	·		
Step		Direction		Mess	age	IF
1	Ŷ Ŀ		À	protected REGISTER addres ✓ a Path header	sed to IMS B	
2	₩	Đ		REGISTER ✓ a Path header		

				Test Purpose		
Identif	ier:	TP_IMS_5011_01		•		
Summ	Summary: In case of IMS AKA as security m from the UE to the entry point in the UE to th			mechanism the P-CSCF shall forward REGISTER requests the home network	received	
IUT Ro	IUT Role: IMS A					
References:		TS 124 229 (V8.10 clause 5.2.2.1 ¶16 (2 nd numbered list)		Config Ref: CF_ROAM_REG		
		Entities		Condition		
	IMS A	IMS B	UE B			
	x			IMS A not configured for topology hiding		
		✓	✓	user of UE B existing in IMS B		
	×		×	UE B has not established a security association with IUT		
	IMS A	IMS B	UE B			
Step		Direction		Message	IF	
1	Ŷ Ŀ		À	unprotected REGISTER ✓ a Security-Client header		
2	₩	₽		REGISTER ✓ a Path header ✓ P-CSCF SIP URI of IMS A ✓ a Require header ✓ a path option tag ✓ a P-Charging-Vector header ✓ an icid-value parameter ✓ an orig-ioi parameter ✓ an orig-ioi parameter ✓ a term-ioi parameter ✓ a Authorization header ✓ an integrity-protected parameter → no × a Security-Verify header × a Security-Client header ✓ a P-Visited-Network-ID header → the visited network at the home network		

				Test Purpose		
Identif	ier:	TP_IMS_5011_02		<u> </u>		
Summ	ary:			mechanism the P-CSCF shall forward REGISTER request the home network	sts received	
IUT Ro	ole:	IMS A				
References:		TS 124 229 (V8.10.0) [1], clause 5.2.2.1 ¶1 ¶16 (2 nd numbered list) and 5.2.2.2		Config Ref: CF_ROAM_REG		
		Entities		Condition		
	IMS A	IMS B	UE B			
	x	√	√	IMS A not configured for topology hiding user of UE B existing in IMS B		
	✓		✓	UE B has established a security association with IUT		
	IMS A	IMS B	UE B	,		
Step		Direction		Message	IF	
1	ींद		4	protected REGISTER ✓ a Security-Client header		
2	₩	∌		REGISTER ✓ a Path header ✓ P-CSCF SIP URI of IMS A ✓ a Require header ✓ a path option tag ✓ a P-Charging-Vector header ✓ an icid parameter ✓ an orig-ioi parameter → IMS A ✗ a term-ioi parameter ✓ a Authorization header ✓ an integrity-protected parameter → yes ✗ a Security-Verify header ✗ a P-Visited-Network-ID header → the visited network at the home network		

				Test Purpose		
Identif	fier:	TP_IMS_5011_0	3			
Summ	nary:			mechanism the P-CSCF shall forw point in the home network	ard REGISTER requests	
IUT R d	IUT Role: IMS A					
Refere	ences:	TS 124 229 (V8.1 clauses 5.2.2.1 ¶ (2 nd numbered lis	16	Config Ref:	CF_ROAM_REG	
		Entities		Conditio	n	
	IMS A	IMS B	UE B			
	×			IMS A not configured for topolog	y hiding	
		✓	✓	user of UE B existing in IMS B		
	x		×	UE B has not established a secu	rity association with IUT	
	IMS A	IMS B	UE B			
Step		Direction		Messag	<u>e</u>	IF
1	ݱ		¢ <u>h</u>	unprotected REGISTER		
2	Ą	<i>ਜ਼ੀ</i>		REGISTER ✓ a Path header ✓ P-CSCF SIP URI of IMS A ✓ a Require header ✓ a path option tag ✓ a P-Charging-Vector header ✓ an icid-value parameter ✓ an orig-ioi parameter → IMS A ✗ a term-ioi parameter ✓ a Authorization header ✓ an integrity-protected para → ip-assoc-pending or ✗ an integrity-protected para ✓ a P-Visited-Network-ID head → the visited network at the	nmeter meter der	

				Test Purpose		
Identif	ier:	TP_IMS_5011_04				
Summary: In case of IMS digest as security r		mechanism the P-CSCF shall forw	ard REGISTER requests			
		received from the I	JE to the entry	y point in the home network		
IUT Ro	ole:	IMS A				
Refere	ences:	TS 124 229 (V8.10).0) [1],	Config Ref:	CF_ROAM_REG	
		clauses 5.2.2.1 ¶1	¶16			
		(2 nd numbered list)	and 5.2.2.3			
		Entities		Condition	1	
	IMS A	IMS B	UE B			
	×			IMS A not configured for topology	hiding	
		✓	✓	user of UE B existing in IMS B		
	×		×	UE B has established a security as	ssociation with IUT	
	IMS A	IMS B	UE B			
Step		Direction		Message		IF
1	ݱ.		À	protected REGISTER		
				REGISTER		
				✓ a Path header		
				✓ P-CSCF SIP URI of IMS A		
				✓ a Require header		
				✓ a path option tag		
				√ a P-Charging-Vector header		
				✓ an icid parameter		
2	₩	Ð		✓ an orig-ioi parameter		
				→ IMS A		
				* a term-ioi parameter		
				✓ a Authorization header	-1	
				✓ an integrity-protected param	ieter	
				→ ip-assoc-yes		
				✓ a P-Visited-Network-ID heade		
				the visited network at the ho	ome network	

				Test Purpose			
Identif	dentifier: TP_IMS_5203_01						
Summary: The P-CSCF have received a R and forwarded the request to an					UE and modified a number of hease	ders	
IUT Ro	le:	IMS A					
References:		TS 124 229 (V8.10.0) [1], clause 5.2.2.1 ¶33 (item 6 in 2 nd numbered list)		Config Ref:	CF_ROAM_REG		
		Entities		C	Condition		
	IMS A	IMS B	UE B				
	✓		✓	UE B having sent an initi	al REGISTER to IMS A		
	✓	✓		IMS A configured with mu	ultiple entry points for IMS B		
	IMS A	IMS B	UE B	_	•		
Step	Step Direction			Message	IF		
1	€ ₽		Any response				
2	\$	Ð		REGISTER addressed to	another entry point		

				Test Purpose	
Identif	ier:	TP_IMS_5203_02		•	
Summary: The P-CSCF have received a RE and forwarded the request to an e				EGISTER request from the UE and modified a number o entry point with 3xx	f headers
IUT Ro	ole:	IMS A	•	•	
References:		TS 124 229 (V8.10.0) [1], clause 5.2.2.1 ¶33 (item 6 in 2 nd numbered list)		Config Ref: CF_ROAM_REG	
		Entities		Condition	
	IMS A	IMS B	UE B		
	✓		✓	UE B having sent an initial REGISTER to IMS A	
	✓	✓		IMS A configured with multiple entry points for IMS B	
	IMS A	IMS B	UE B		
Step	Direction			Message	IF
1	Æ Å			3xx response	
2	₩	Ð		REGISTER addressed to another entry point	

				Test Purpose		
Identifier: TP_IMS_5203_03						
Summary: The P-CSCF have received a RE and forwarded the request to an order.					UE and modified a number of hea	aders
IUT Ro	ole:	IMS A				
Refere	ences:	TS 124 229 (V8.10.0) [1], clause 5.2.2.1 ¶33 (item 6 in 2 nd numbered list)		Config Ref:	CF_ROAM_REG	
		Entities		Condition		
	IMS A	IMS B	UE B			
	✓		✓	UE B having sent an initia	UE B having sent an initial REGISTER to IMS A	
	✓	✓		IMS A configured with mu	IMS A configured with multiple entry points for IMS B	
	IMS A	IMS B	UE B			
Step	Step Direction			Message	IF	
1	€ ₽		480 response			
2	₩	Ð		REGISTER addressed to	another entry point	

				Test Purpose			
Identifier: TP_IMS_5044_01 Summary: The P-CSCF have received a RE		•					
Summ	nary:	The P-CSCF have and forwarded the		EGISTER request from the UE and entry point	modified a number of headers	6	
IUT R	ole:	IMS A	•	Confin Boti			
Refere	ences:	TS 124 229 (V8.10 clause 5.2.3 ¶2 (1 list)		Config Ref:	CF_ROAM_REG		
	Entities		Condition	1			
	IMS A	IMS B	UE B				
	✓		✓	UE B having sent a protected REG			
	x			IMS A not configured for topology h	niding		
	IMS A	IMS B	UE B			_	
Step	^	Direction		Message		IF	
1	Ŷ Ŀ	4	_	200 response			
2	₩	₽		SUBSCRIBE ✓ a Request URI ✓ "the resource to which the P subscribe to" and ✓ a From header ✓ P-CSCF_SIP_URI of IM ✓ a To_header ✓ the default_public_user_ ✓ an Event_header ✓ the reg event package at ✓ an Expires_header ✓ an Expires_header of the 20 ✓ a P-Asserted-Identity_header ✓ the P-CSCF_SIP_URI of ✓ a P-Charging-Vector header ✓ an icid-value parameter	identity of UE_B and ind e one in the 00_response" and		

5.3.2 Registration at S-CSCF

					Test Purpose	
Identif			IMS_5088_01			
Summ	ary:		SCF shall dere rmation	gister unexpire	d registration upon receipt of a new REGISTER with new c	ontact
IUT Role: IMS B						
References: TS 124 229 (V8.10.0) [1], clause 5.4.1.2.1 ¶7 (item numbered list)		0.0) [1], 7 (item 2 in 1 st	Config Ref: CF_ROAM_REG			
			Entities		Condition	
	IMS A	١	IMS B	UE B		
	✓		✓	✓	UE B registered in IMS B via IMS A	
	✓		✓		IMS A within the trust domain of IMS B	
			x	×	UE B not de-registered in IMS B	
	IMS A	١	IMS B	UE B		
Step			Direction		Message	IF
1a			Ŷ£	À	initial REGISTER ✓ an Authorization header ✓ an integrity-protected parameter → no or tls-pending or ip-assoc-pending	
1b			Ŷ Ŀ	À	initial REGISTER	
2	€±		₽		NOTIFY ✓ a Request URI → the P-CSCF SIP URI of IMS A ✓ an Event header → the reg event package ✓ a P-Charging-Vector header ✓ an icid-value parameter ✓ a Route header → the original Route header from SUBSCRIBE ✓ a Message Body ✓ for each registered public identity of UE B a registration element ✓ an aor attribute → registered public identity of UE B ✓ a state attribute → terminated ✓ a contact subelement ✓ an event attribute → deactivated or rejected ✓ a state attribute → terminated ✓ a URI subelement → the contact address of UE B	

				Test Purpose	
Identif	ier:	TP_IMS_5089_01		•	
Summ	Summary: In case of IMS AKA as security m of a REGISTER from an UE not p			mechanism the S-CSCF shall return of previously registered	n 401 (Unauthorized) upon receipt
IUT Ro	ole:	IMS B			
Refere	ences:	TS 124 229 (V8.10 clause 5.4.1.2.1A		Config Ref:	CF_ROAM_REG
		Entities		Conditio	n
	IMS A	IMS B	UE B		
		✓	✓	user of UE B existing in IMS B	
		×	×	UE B not registered in IMS B	
	✓		✓	UE B visiting IMS A	
	✓	✓		IMS A within the trust domain of II	MS B
	IMS A	IMS B	UE B		
Step		Direction		Messag	e IF
1	\$	Ð		initial REGISTER ✓ an Authorization header ✓ an integrity-protected paran → no	neter
2	€ ±	Ф		401 response ✓ an WWW-Authenticate heade ✓ a realm parameter → the operator identifier of ✓ a nonce parameter ✓ a RAND parameter ✓ an AUTN parameter) ✓ an algorithm parameter → AKAv1-MD5 ✓ an ik parameter ✓ a ck parameter	

				Test Purpose	
Identif	ier:	TP_IMS_5089_02		•	
Summ	Summary: In case of SIP digest as security mare receipt of a REGISTER from an Ul			mechanism the S-CSCF shall return 401 (Unauthorized) up UE not previously registered	on
IUT Ro	ole:	IMS B			
Refere	ences:	TS 124 229 (V8.10 clause 5.4.1.2.1B		Config Ref: CF_ROAM_REG	
		Entities		Condition	
	IMS A	IMS B	UE B		
		✓	✓	user of UE B existing in IMS B	
		×	×	UE B not registered in IMS B	
	✓	✓ ✓		UE B visiting IMS A	
	✓	✓		IMS A within the trust domain of IMS B	
	IMS A	IMS B	UE B		
Step		Direction		Message	IF
1	₩	卦		initial REGISTER ✓ an Authorization header	
2	िंद	Ф		 401 response ✓ an WWW-Authenticate header ✓ a realm parameter → the operator identifier of IMS B ✓ a nonce parameter ✓ an algorithm parameter → MD5 ✓ a qop parameter → auth 	

				Test Purpose	
Identi	fier:	TP_IMS_509	2_01	•	
Sumn	nary:	200 OK on R	EGISTER from U	E to the S-CSCF	
IUT R	ole:	IMS B			
Refere	References: TS 124 229 (V8.10.0) [1],		V8.10.0) [1],	Config Ref: CF_ROAM_REG	
	clause 5.4.1.2.2F ¶1				
		Entitie	S	Condition	
	IMS A IMS B UE B				
		\checkmark	✓	user of UE B existing in IMS B	
	\checkmark		✓	UE B visiting IMS A	
		×	×	UE B not registered in IMS B IMS B has challenged with a 401 response the REGISTER	
		1		IMS B has challenged with a 401 response the REGISTER	
		· ·		request	
	IMS A	IMS E	B UE B		
Step		Direction	on	Message	IF
1	₩	,		protected REGISTER	
	·				
				200 response	
				✓ the same Path header as in the protected	
				REGISTER	
				✓ a P-Associated-URI header	
				✓ all registered public identities its	
				associated set of implicitly registered	
				public user identities	
_		м		first the default public user identity no	
2	€	₩		barred public user identities	
				✓ a Service-Route header	
				→ the S-CSCF SIP URI of IMS B	
				✓ a P-Charging-Vector header	
				✓ a term-ioi parameter	
				operator identifier of IMS B	
				✓ a Contact header	
				→ all contact addresses for the default	
				public user identity of UE B	

				Test Purpose		
Identif	ier:	TP_IMS_5096_01		•		
Summ	mary: The network shall handle incoming SUBSCRIBE correctly					
IUT Ro	ole:	IMS B				
Refere		TS 124 229 (V8.10		Config Ref:	CF_ROAM_REG	
		clause 5.4.2.1.1 ¶1				
		Entities		Condition	ı	
	IMS A	IMS B	UE B			
		✓	✓	UE B registered in IMS B		
	✓		✓	UE B visiting IMS A		
	IMS A	IMS B	UE B			
Step		Direction		Message		IF
				SUBSCRIBE		
1	₩	Ð		✓ an Event header		
				the reg event package		
				2xx response		
2	2 🔖 🕏		✓ an Expires header			
2			→ the same or lower expiry tin	ne than		
				specified in the initial SUBS		

		I		Test Purpose	
Identif		TP_IMS_5093_01			
Summ			egister in networ	k-initiated de-registration	
IUT Ro		IMS B TS 124 229 (V8.10		Config Ref: CF_ROAM_REG	
		clause 5.4.1.5 ¶6 (numbered list)	Candidan	
	IMS A	Entities IMS B	UE B	Condition	
	IIVIS A	IIVIS D	UE B	UE B registered in IMS B via IMS A	
	✓	→	V	IMS A within the trust domain of IMS B	
	IMS A	IMS B	UE B	INO A WITHIN THE TRUST GOTHAIN OF TWO D	
Step	1111071	Direction	U	Message	IF
1	₽	Ð		network initiated deregistration event	
2	Ĉ±	ф		NOTIFY ✓ a Request URI → UE_B ✓ an Event header → the reg event package ✓ a P-Charging-Vector header ✓ an icid-value parameter ✓ a Route header → the original Route header from SUBSCRIBE ✓ a Message Body ✓ for each registered public identity of UE B a registration element ✓ an aor attribute → registered public identity of UE B ✓ a state attribute → terminated ✓ a contact subelement ✓ an event attribute → deactivated or rejected ✓ a state attribute → terminated ✓ a URI subelement → the contact address of UE B	
3	र्देस	Ŷ		NOTIFY ✓ a Request URI → UE_A ✓ an Event header → the reg event package ✓ a P-Charging-Vector header ✓ an icid-value parameter ✓ a Route header → the original Route header from SUBSCRIBE ✓ a Message Body ✓ for each registered public identity of UE A a registration element ✓ an aor attribute → registered public identity of UE A ✓ a state attribute → terminated ✓ a contact subelement ✓ an event attribute → deactivated or rejected ✓ a state attribute → terminated ✓ a URI subelement → the contact address of UE A	

				Test Purpose	
Identif		TP_IMS_5094_01		•	
Summ			ster in netwo	rk-initiated re-authentication	
IUT Ro		IMS B TS 124 229 (V8.10	0 0) [1]	Config Ref: CF_ROAM_REG	
Kelele	illes.	clause 5.4.1.6 ¶2	J.O) [1],	CF_ROAW_REG	
		Entities		Condition	
	IMS A	IMS B	UE B		
	✓	√	✓	UE B registered in IMS B via IMS A	
	✓	√		IMS A within the trust domain of IMS B	
	IMC A	IMS B	UE B	IMS B receives an event to reauthenticate UE_B	
Step	IMS A	Direction	UEB	Message	IF
1	₽	±ŷ		network initiated reauthentication event	- "
2	ĈШ	Ŷħ		NOTIFY ✓ a Request URI → UE_B ✓ an Event header → the reg event package ✓ a P-Charging-Vector header ✓ an icid-value parameter ✓ a Route header → the original Route header from SUBSCRIBE ✓ a Message Body ✓ for each registered public identity of UE B a registration element ✓ an aor attribute → registered public identity of UE B ✓ a state attribute → active ✓ a contact subelement ✓ an event attribute → shortened ✓ a state attribute → active ✓ a URI subelement	
3	€a	Ŷ		NOTIFY ✓ a Request URI → the P-CSCF_SIP_URI of IMS_A ✓ an Event header → the reg event package ✓ a P-Charging-Vector header ✓ an icid-value parameter ✓ a Route header → the original Route header from SUBSCRIBE ✓ a Message Body ✓ for each registered public identity of UE A a registration element ✓ an aor attribute → registered public identity of UE B ✓ a state attribute → active ✓ a contact subelement ✓ an event attribute → shortened ✓ a state attribute → active ✓ a URI subelement → the contact address of UE B	

5.3.3 Registration at I-CSCF

	Interoperability Test Purpose								
Identif	ier:	TP_IMS_5129_01	-	•					
Summ	ary:	If a request is rece I-CSCF	ived from a no	n-trusted domain, a 403 (F	Forbidden) response shall be retu	rned by			
IUT Ro	IUT Role: IMS B								
Refere	References: TS 124 229 (V8.10.0) [1], clause 5.3.1.2 ¶1			Config Ref:	CF_ROAM_REG				
	Entities		Condition						
	IMS A	IMS B	UE B						
		✓	✓	user of UE B existing in	IMS B				
	×	x		IMS A not within the trus	st domain of IMS B				
	IMS A	IMS B	UE B						
Step	p Direction		Message		IF				
1	\$		valid initial REGISTER						
2	ŶĿ	ф		403 response					

5.3.4 Registration at IBCF

	Interoperability Test Purpose							
Identif	ier:	TP_IMS_5134_01						
Summ	Summary: If a request includes a Path header the IBCF shall add the routeable SIP URI of an IBCF to the top of the Path header							
IUT R d	ole:	IMS A						
References: TS 124 229 (V8.10.0) [1], clause 5.10.4.1 ¶5		Config Ref:	CF_ROAM_REG					
	Entities			Condition				
	IMS A	IMS B	UE B					
	✓			IMS A configured for to	pology hiding			
	IMS A	IMS B	UE B					
Step		Direction			Message	IF		
1	Ŷ		Ą	REGISTER				
2	\$		REGISTER ✓ an additional topm → the IBCF SIP UF					

		·	Interd	perability Test Purpose	·	
Identif	ier:	TP IMS 5401 01				
Summ	ary:	IBCF shall, if topol	ogy hiding is	required, apply the encryp	tion for the Path header	
IUT R	IT Role: IMS A					
Refere		TS 124 229 (V8.10 clause 5.10.2.1 ¶1	0.0) [1],	Config Ref: CF_ROAM_REG		
	Entities				Condition	
	IMS A	IMS B	UE B			
	✓		IMS A configured for to	IMS A configured for topology hiding		
	IMS A	IMS B	UE B			
Step		Direction			Message	IF
1	Ŷ Ŀ		Å	REGISTER ✓ Path header		
2	₩	±Ĵ∕		REGISTER ✓ a Path header ✓ encrypted conse ✓ tokenized-by par	cutive header entries	

			Interc	pperability Test Purpose		
Identif	ier: T	P_IMS_5	402_01			
Summ	ary:	BCF shall	select a new entry po	pint and forward the original REGIST	ER request on no respons	se.
IUT Ro	ole: IMS A					
clause 5.10.2.1 ¶1 (item 3 in		Config Ref:	CF_ROAM_REG			
	1 st bulleted list) Entities		Condition			
				Condition		
	IMS	Α	IMS B			
	✓			IMS A configured for topology hiding		
	✓		\checkmark	IMS A configured with multiple entr	ry points in IMS B	
	✓		✓	IMS A having sent an initial REGIS	TER to IMS B	
	IMS	Α	IMS B			
Step	ep Direction		Message	Message		
1 1		Any response				
2	₽		£	original REGISTER addressed to	another entry point	

Interoperability Test Purpose										
Identif	ier:	TP_IMS_5	402_02	-						
Summ	ary:	IBCF shall	select a new entry poi	nt and forward the original REGIS	TER request on 3xx respor	nse.				
IUT Ro	le:	IMS A	•	-						
References: TS 124 229 (V8.10.0) [1], clause 5.10.2.1 ¶1 (item 3 in 1st bulleted list)		Config Ref:	CF_ROAM_REG							
	Entities			Conditi	on					
	IMS	SA	IMS B							
	١	/		IMS A configured for topology h	iding					
	١		✓	IMS A configured with multiple	entry points for IMS B					
	١	/	✓	IMS A having sent an initial REG	GISTER to IMS B					
	IM	S A	IMS B							
Step	Direction		ction	Messag	ge	IF				
1	Ĉ⊑ d [#]		Ą	3xx response						
2	\$		Ð	original REGISTER addressed	to another entry point					

	Interoperability Test Purpose										
Identif	ier:	TP_IMS_5	402_03								
Summ	ary:	IBCF shall	select a new entry p	oint and forward the original REGIST	ER request on 480 respon	nse.					
IUT Ro	ole:	IMS A									
References: TS 124 229 (V8.10.0) [1], clause 5.10.2.1 ¶1 (item 3 in 1 st bulleted list)		Config Ref:	CF_ROAM_REG								
		Entit	ies	Condition	1						
	IMS	S A	IMS B								
	✓			IMS A configured for topology hidir	ng						
	✓	/	✓	IMS A configured with multiple entr	ry points for IMS B						
	✓	/	✓	IMS A having sent an initial REGIS	TER to IMS B						
	IMS	S A	IMS B								
Step		Direc	tion	Message		IF					
1	Ŷ	Σ	Â	480 response							
2	Ŕ	·	Ð	original REGISTER addressed to	another entry point						

			Interd	perability Test Purpose		
Identif	ier:	TP_IMS_5				
Summ	ary:	If a request IBCF	t is received from a n	on-trusted domain, a 403 (Fo	orbidden) response shall be retur	ned by
IUT Ro	ole:	IMS B				
		9 (V8.10.0) [1], 0.3.1 ¶1 (item 1 in ed list)	Config Ref:	CF_ROAM_REG		
		Ent	ities	С	ondition	
	IMS	S A	IMS B			
			✓	IMS B configured for topo		
	:	x	×	IMS A not within the trust	domain of IMS B	
	IMS	SA	IMS B			
Step			ction	IV	lessage	IF
1	\$		Ð	valid REGISTER		
2	<	Ę.	Ą	403 response		

5.4 Dialog Procedures

5.4.1 Dialog at P-CSCF

					Test Purpose		
Identif	ier:	TP_IMS_50					
Summ	ary:	When the P	-CSCF rec	eives an init	al INVITE request for a dialog from	m a UE for which a Servic	e-
			er list exist	s without top	ology hiding		
IUT Ro	le:	IMS A					
Refere	nces:	TS 124 229	(V8.10.0)	[1],	Config Ref:	CF_ROAM_CALL	
		clause 5.2.6	5.3.3 ¶1 (1 ^s	^t numbered			
		list)					
		Enti			Conditio	n	
	UE A	IMS A IMS B UE B		UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
		×			IMS A not configured for topolog	y hiding	
	UE A	IMS A	IMS B	UE B			
Step		Direction			Messag	e	IF
1		Ý c		¢ħ	initial INVITE		
2		₩,	∌ੇ		invite ✓ a topmost Route header → the P-CSCF SIP URI of IN ✓ a Route header ✓ the list of Service Route header ✓ the list of Service Route header ✓ the P-CSCF via port numb ✓ the P-CSCF-IP address of ✓ an additional topmost Recor ✓ the P-CSCF port number of the P-CSCF-IP address of	eader URIs er es or f the IMS A d-Route header where it awaits UE A es or the e IMS A	

	Test Purpose										
Identifier	:	TP_IMS_5									
Summary	y:				al INVITE request for a dialog fro	om a UE for which a Servic	ce-				
			der list exi	sts with topolo	gy hiding						
IUT Role		IMS A									
Reference	es:	TS 124 22	9 (V8.10.0) [1],	Config Ref:	CF_ROAM_CALL					
			.6.3.3 ¶1 (1 st numbered							
		list)									
			tities		Condition	<u>on</u>					
	UE A	IMS A	IMS B	UE B							
	✓	✓			UE A registered in IMS A						
			✓	✓	UE B registered in IMS B						
		√			IMS A configured for topology hi	ding					
	UE A	IMS A	IMS B	UE B							
Step			ection	Т	Messag	<u>e</u>	IF				
1	_	Ŷ Ŀ	_	ŶŊ.	initial INVITE						
2		₩	Ð		INVITE						
					✓ a topmost Route header						
					→ the IBCF SIP URI of IMS						
					→ the P-CSCF SIP URI of II	MS A					
					✓ a Route header						
					✓ the list of Service Route h	eader URIs					
					from the registration						
					✓ an additional Via header						
					✓ the P-CSCF via port num						
					✓ the P-CSCF-FQDN addre						
					the P-CSCF-IP address of						
					✓ an additional topmost Reco						
					✓ the P-CSCF port number						
					subsequent requests from						
					✓ the P-CSCF-FQDN address of the						
					P-CSCF-IP address of th	e IIVIS A					
					 ▶ P-Preferred-Identity header ✓ a P-Asserted-Identity header 	ar.					
					✓ an address of UE A	71					
					✓ a P-Charging-Vector heade						
					✓ an icid-value parameter						

					Test Purpose	
Identifie	er:	TP_IMS_5	046_03		•	
Summa	ry:	When the I			nitial request for a dialog from a UE for which a Service-Rou ly hiding	ite
IUT Rol	e:	IMS A				
Referen	ices:	TS 124 229 (V8.10.0) [1], clause 5.2.6.3.3 ¶1 (1 st numbered list)		[1],	Config Ref: CF_ROAM_CALL	
	115 4		ities	UE B	Condition	
	UE A	IMS A	IMS B	UE B		
	V	V	✓	✓	UE A registered in IMS A	
		x	v	•	UE B registered in IMS B	
	UE A	IMS A	IMS B	UE B	IMS A not configured for topology hiding	
Step	UEA		Direction Message		Mossago	IF
1		र्फ	Ction	প্র	SUBSCRIBE	- 11
2		45	±₽		SUBSCRIBE ✓ a topmost Route header → the P-CSCF SIP URI of IMS A ✓ a Route header ✓ the list of Service Route header URIs from the registration ✓ an additional Via header ✓ the P-CSCF via port number ✓ the P-CSCF-FQDN address or the P-CSCF-IP address of the IMS A ✓ an additional topmost Record-Route header ✓ the P-CSCF port number where it awaits subsequent requests from UE A ✓ the P-CSCF-FQDN address or the P-CSCF-IP address of the IMS A × P-Preferred-Identity header ✓ a P-Asserted-Identity header ✓ an address of UE A	

			Test Purpose								
Identifie	er:	TP_IMS_50	46_04		•						
Summa	ry:	When the P	-CSCF rec	eives an ii	nitial request for a dialog from a UE	for which a Service-Route					
		header list e	exists with t	opology h	iding						
IUT Rol	e:	IMS A									
Referen	ices:	TS 124 229		[1],	Config Ref:	CF_ROAM_CALL					
		clause 5.2.6									
		(1 st number									
		Entit			Condition	n					
	UE A	IMS A	IMS B	UE B							
	✓	✓			UE A registered in IMS A						
			✓	✓	UE B registered in IMS B						
		√			IMS A configured for topology hidi	ng					
01	UE A	IMS A	IMS B	UE B							
Step		Direct	ion	М М	Message		IF				
1		Ŷ.		Å	SUBSCRIBE						
					SUBSCRIBE						
					✓ a topmost Route header						
					→ the IBCF SIP URI of IMS A						
					→ the P-CSCF SIP URI of IMS	5 A					
					✓ a Route header						
					✓ the list of Service Route hea	ader URIS					
					from the registration						
					✓ an additional Via header	_					
					✓ the P-CSCF via port numbe ✓ the P-CSCF-FQDN address						
2		#	,₽̂		the P-CSCF-PQDN address of						
		⇒	±√		✓ an additional topmost Record						
					✓ the P-CSCF port number where ✓ the point number where where the point number						
					subsequent requests from U						
					✓ the P-CSCF-FQDN address						
					P-CSCF-IP address of the						
					➤ P-Preferred-Identity header						
					✓ a P-Asserted-Identity header						
					✓ an address of UE A						
					✓ a P-Charging-Vector header						
					✓ an icid-value parameter						

					Test Purpose		
Identif	ier:	TP_IMS_5	048_01		•		
Summ	ary:	P-CSCF fo	rwards a ta	rget refresh	request from the UE		
IUT Ro	ole:	IMS A					
Refere	ences:	TS 124 229 (V8.10.0) [1], clause 5.2.6.3.5 ¶1 (1 st numbered list)			Config Ref:	CF_ROAM_CALL	
Entities					Condition	n	
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
	✓			✓	UE B has initiated a dialog with UE A		
	UE A	IMS A	IMS B	UE B			
Step		Dire	ction		Messag	e	IF
1		Ŷ Ŀ		Ą	subsequent INVITE		
2		₩	₽̂		INVITE ✓ a topmost Route header → the P-CSCF SIP URI of IMS A ✓ an additional Via header ✓ the P-CSCF via port number ✓ the P-CSCF-FQDN address or the P-CSCF-IP address of the IMS A		

					Test Purpose		
Identif	ier:	TP_IMS_5	052_01		•		
Summ	ary:			a request, est for a dia	other than a target refresh request, f	from the UE subsequent	to a
IUT Ro	ole:	IMS A	•				
References:		TS 124 229 (V8.10.0) [1], clause 5.2.6.3.9 ¶1 (1 st numbered list)			Config Ref:	CF_ROAM_CALL	
	Entities				Condition		
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A	UE A registered in IMS A	
			✓	✓	UE B registered in IMS B		
	✓			✓	UE B has initiated a dialog with UE A		
	UE A	IMS A	IMS B	UE B			
Step		Direc	ction		Message		IF
1		Ŷ Ŀ		Ą	BYE		
2		₩	Ð		BYE * a Route header √ the P-CSCF SIP URI of IMS A ✓ the same Record-Route header as in the previous ACK ✓ a P-Charging-Vector header ✓ an icid-value parameter		

					Test Purpose		
Identif	ier:	TP_IMS_5	053_01		•		
Summ	ary:	P-CSCF re	ceives from	the UE a	request for an unknown method w	ithout topology hiding	
IUT Ro	IUT Role: IMS A						
Refere	nces:		9 (V8.10.0)	[1],	Config Ref:	CF_ROAM_CALL	
		clause 5.2.6.3.11 ¶1 (1 st numbered list)					
	Entities				Conditio	n	
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
		×			IMS A not configured for topology hiding		
	UE A	IMS A	IMS B	UE B			
Step		Direc	tion		Messag	e	IF
1	₩	Ð			Unknown Method addressed to	UE B	
2		\$	₽Ŷ		Unknown Method ✓ a Route header → the list of Service Route header from the registration * a P-Preferred-Identity header ✓ a P-Asserted-Identity header ✓ an address of UE A	r	

					Test Purpose		
Identif	ier:	TP_IMS_5	053_02		•		
Summ	ary:	P-CSCF re	ceives fron	n the UE a	request for an unknown method wit	th topology hiding	
IUT Ro	ole:	IMS A			•		
Refere	ences:	TS 124 229 (V8.10.0) [1], clause 5.2.6.3.11 ¶1 (1 st numbered list)			Config Ref:	CF_ROAM_CALL	
Entities					Condition	ı	
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	\checkmark	UE B registered in IMS B	UE B registered in IMS B	
		✓			IMS A configured for topology hiding		
	UE A	IMS A	IMS B	UE B			
Step		Direc	tion		Message		IF
1	₿	Ð			Unknown Method addressed to U	JE B	
2		₩	∌		Unknown Method ✓ a Route header → the list of Service Route header from the registration * a P-Preferred-Identity header ✓ a P-Asserted-Identity header ✓ an address of UE A		

					Test Purpose			
Identif	ier:	TP_IMS_5	055_01		•			
Summ	ary:	The P-CSC	CF receives	a 180 resp	ponse to an initial request for a dialog from the UE			
IUT Ro		IMS A						
Refere	ences:	TS 124 229 (V8.10.0) [1], clause 5.2.6.4.4 ¶1 (1 st numbered list)			Config Ref: CF_ROAM_CALL			
	Entities				Condition			
	UE A	IMS A	IMS B	UE B				
	✓	✓			UE A registered in IMS A			
			✓	✓	UE B registered in IMS B			
	✓			✓	UE A has received an initial request for a dialog from UE B			
	UE A	IMS A	IMS B	UE B				
Step		Direc	ction		Message	퓌		
1	₽	Ð			180 response			
2		\$	∌		180 response ✓ a Record-Route header → the P-CSCF SIP URI and port number of IMS A where it expects subsequent requests × a comp parameter × a P-Preferred-Identity header ✓ a P-Asserted-Identity header ✓ the public identity sent in P-Called Party-ID header sent in the initial request			

	Test Purpose											
Identif	fier:	TP_IMS_5	055_02									
Summ	nary:	The P-CSC	CF receives	a 2xx resp	onse to an initial request for a dialog fro	om the UE						
IUT Ro	ole:	IMS A			<u> </u>							
Refere	ences:	TS 124 229 clause 5.2. (1 st numbe	6.4.4 ¶1	[1],		_ROAM_CALL						
		Enti			Condition							
	UE A IMS A IMS B UE B											
	✓	✓			UE A registered in IMS A							
			✓	✓	UE B registered in IMS B							
	✓			✓	UE A has received an initial request for a dialog from UE B							
	UE A	IMS A	IMS B	UE B								
Step		Direc	ction		Message		IF					
1	₽	Ð			200 response							
2		\$	∌		200 response ✓ a Record-Route header → the P-CSCF SIP URI and port number of IMS A where it expects subsequent requests ✗ a comp parameter ✗ a P-Preferred-Identity header ✓ a P-Asserted-Identity header ✓ the public identity sent in P-Called Party-ID header sent in the initial request							

					Test Purpose				
Identif	ier:	TP_IMS_5	067_01						
Summ	ary:				cess-network-charging-info parameted by the UE	eter in the P-Charging-Vec	ctor		
IUT R	ole:	IMS A							
Refere	ences:	TS 124 229 clause 5.2.	9 (V8.10.0) 7.2 ¶ 5	[1],	Config Ref:	CF_ROAM_CALL			
		Ent	ities		Conditio	n			
	UE A	IMS A	IMS B	UE B					
	✓	✓			UE A registered in IMS A				
			✓	✓	UE B registered in IMS B				
	UE A	IMS A	IMS B	UE B					
Step		Dire	ction		Messag	e	IF		
1		Ý:		À	initial INVITE				
2		\$	Đ		INVITE ✓ a P-Charging-Vector header ✓ a access-network-charging				

					Test Purpose		
Identif	ier:	TP_IMS_5	070_01		<u>-</u>		
Summ	ary:	The P-CSC network	CF shall res	pond with a	100 (Trying) provisional resp	onse on initial INVITE in termin	ating
IUT Ro	ole:	IMS A					
Refere	nces:	TS 124 229 clause 5.2.		[1],	Config Ref:	CF_ROAM_CALL	
		Ent	ities		Con	dition	
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
	UE A	IMS A	IMS B	UE B			
Step		Dire	ction		Mes	ssage	IF
1		ŶĿ.		Ą	initial INVITE		
2		₿	Ð		100 response		

Test Purpose										
Identif	ier:	TP_IM	S_5072_	01		•				
Summ	ary:	P-CSC	F sends	CANCEL	in case i	ts UE goes down during dialog init	tiation			
IUT Ro	ole:	IMS A								
References: TS 124 229 (V8.10.0) [1],				3.10.0) [1]],	Config Ref:	CF_ROAM_CALL			
		clause	5.2.8.1.	1 ¶1						
			Entities			Conditio	n			
UEA NWK IMSA IMSB UEB										
	✓		✓			UE A registered in IMS A				
				\checkmark	✓	UE B registered in IMS B				
	1				1	UE B has received 180 on initial	request for dialog from			
					<u> </u>	UE A				
	UE A	NWK	IMS A	IMS B	UE B					
Step			Direction	1		Message		IF		
1		₽	Ð			an indication that UE B is no lor	nger available			
2			4			CANCEL				
	Ý .					✓ a Reason header				
	α		✓ a status code parameter							
						→ 503 Service Unavailable)			
3			₩	Ď		503 response				

						Test Purpose			
Identif	ier:	TP_IMS_5073_01							
Summary: P-CSCF sends BYE in case its calling UE goes down in ongoing dialog IUT Role: IMS B									
IUT Ro	ole:	IMS B							
Refere	ences:	clause	5.2.8.1.2 nbered li], n 1 in	Config Ref: CF_INT_CALL			
	Entities			Condition					
	UE A IMS A NWK IMS B UE B		UE B						
	✓	✓		,		UE A registered in IMS A			
	,			✓	✓	UE B registered in IMS B			
	✓				✓	UE B has initiated a dialog with UE A			
	UE A	IMS A	NWK	IMS B	UE B				
Step			Direction			Message	IF .		
1			₿	ΣŶ		an indication that UE B is no longer available			
2		€		ħ		PYE ✓ Request URI → Contact header value of UE A ✓ To header → initial 200 OK To value from UE A ✓ From header → initial INVITE From value from UE B ✓ Call-ID header → initial INVITE Call Id value from UE B ✓ CSeq header ✓ an incremented Sequence Number ✓ Route header → dialog specific routing information for UE A ✓ Reason header → 503 Service Unavailable ✓ further headers based on local policy or call release reason			

						Test Purpose				
Identif	dentifier: TP_IMS_5074_01									
Summ	Summary: P-CSCF sends BYE in case its called UE goes down in ongoing dialog									
IUT Ro	ole:	IMS A				5 5 5				
Refere	ences:	clause		3.10.0) [1] 2 ¶1 (item st)		Config Ref: CF_INT_CALL				
	Entities					Condition				
	UEA IMSA NWK IMSB UEB		UE B							
	✓	✓			UE A registered in IMS A					
				✓	✓	UE B registered in IMS B				
	✓				✓	UE A has initiated a dialog with UE B				
	UE A	IMS A	NWK	IMS B	UE B					
Step	ep Direction				·	Message	IF			
1			₿	Ď		an indication that UE B is no longer available				
2		र्देच		₽		BYE ✓ Request URI → Contact header value of UE A ✓ To header → initial 200 OK From value from UE B ✓ From header → initial INVITE To value from UE A ✓ Call-ID header → initial INVITE Call Id value from UE A ✓ Cseq header ✓ an incremented Sequence Number ✓ Route header → dialog specific routing information for UE A ✓ Reason header → 503 Service Unavailable ✓ further headers based on local policy or call release reason				

					Test Purpose					
Identif	fier:	TP_IMS_5	080_01		•					
Summ	nary:				e the updated access-network-charging-info parameter from P-Charging- ling subsequent INVITE to the S-CSCF.					
IUT R	ole:	IMS A	dei Wileli S	criding subs	requent invite to the 3-6361.					
Refere	ences:	TS 124 229 (V8.10.0), clause 5.2.9.1 ¶2			Config Ref:	CF_ROAM_CALL				
		Ent	ities		Condition	n				
	UE A	IMS A	IMS B	UE B						
	✓	✓			UE A registered in IMS A					
			✓	✓	UE B registered in IMS B					
	✓			✓	UE B has initiated a dialog with l	JE A				
	UE A	IMS A	IMS B	UE B						
Step		Dire	ction		Messag	e	IF			
1		Ŷ Ŀ		À	subsequent INVITE					
2			INVITE ✓ a P-Charging-Vector header ✓ an updated access-networ parameter							

					Test Purpose		
Identif	ier:	TP_IMS_5	080_02		•		
Summ	ary:				dated access-network-charging-inf subsequent UPDATE to the S-CSC		ging-
IUT Ro	ole:	IMS A			•		
Refere	ences:	TS 124 229 clause 5.2.	9 (V8.10.0), 9.1 ¶ 2		Config Ref:	CF_ROAM_CALL	
	Entities				Condition	n	
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
	✓			✓	UE B has initiated a dialog with UE	ĒΑ	
	UE A	IMS A	IMS B	UE B			
Step		Direc	tion		Message		IF
1		Ŷ±.		Ą	subsequent UPDATE		
2		₩	±ŷ		 UPDATE ✓ a P-Charging-Vector header ✓ an updated access-network-parameter 	PDATE ✓ a P-Charging-Vector header ✓ an updated access-network-charging-info	

					Test Purpose				
Identif	ier:	TP_IMS_5	081_01						
Summ	ary:	P-CSCF 10	00 response	e to a re-IN	/ITE				
IUT Ro	ole:	IMS A	•						
Refere	References: TS 124 229 (V8.10.0), clause 5.2.9.2 ¶1		Config Ref:	CF_ROAM_CALL					
		Ent	ities		Condition	on			
	UE A	IMS A	IMS B	UE B					
	✓	✓			UE A registered in IMS A				
			✓	✓	UE B registered in IMS B				
	✓			✓	UE A has initiated a dialog with L	JE B			
	UE A	IMS A	IMS B	UE B					
Step		Dire	ction		Messag	le .	IF		
1		ŶĿ	Ą		subsequent INVITE addressed to UE B				
2		₽	Σŷ		100 response				

					Test Purpose				
Identif	ier:	TP_IMS_5	082_01						
Summ	ary:	P-CSCF se	ends 200 re	sponse to	a target refresh request with P-Cha	a target refresh request with P-Charging-Vector			
IUT Ro	ole:	IMS A		•	· · · · · · · · · · · · · · · · · · ·				
Refere	nces:	TS 124 22	9 (V8.10.0),		Config Ref:	CF_ROAM_CALL			
		clause 5.2.	.9.2 ¶ 2						
	Entities				Condition	n			
	UE A	IMS A	IMS B	UE B					
	✓	✓			UE A registered in IMS A				
			✓	✓	UE B registered in IMS B				
	✓	✓		✓	UE A has initiated a dialog with UE	В			
		✓		✓	IMS B has received a target refres	sh request in a dialog			
	UE A	IMS A	IMS B	UE B					
Step		Direc	ction		Message	•	IF		
1		Ŷ±		À	200 response				
2 ∜ ∌		200 response ✓ a P-Charging-Vector header ✓ an updated access-network- parameter	-charging-info						

5.4.2 Dialog at S-CSCF

					Test Purpose		
Identif	ier:	TP_IMS_5	097_01		•		
Summ	ary:				ameter, remove access-network-ch ore sending initial INVITE or a initia		
IUT Ro	ole:	IMS A					
Refere		TS 124 229 clause 5.4. (1 st numbe			Config Ref:	CF_INT_CALL CF_ROAM_AS	
	Entities				Condition	n	
	UEA IMSA IMSB UEB						
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
		×			IMS A not configured for topology	hiding	
	UE A	IMS A IMS B UE B					
Step		Direction			Message		
1	₩	Ð			initial INVITE addressed to UE B SUBSCRIBE)	(also valid for	
2		₩,	÷		initial INVITE * a Route header → the S-CSCF SIP URI of IM * a P-Charging-Vector header * an icid-value parameter * an orig-ioi parameter → IMS A * an access-network-charging * a term-ioi parameter * a Record-Route header → the originating S-CSCF SIF * a P-Access-Network-Info head	g-info parameter	

					Test Purpose	
Identif	ier:	TP_IMS_5	097_02		•	
Summ	Summary: S-CSCF inserts a second P-Asse whichever is not present in initial				rted-Identity header indicating a registered tel URI or sip UR INVITE	I
IUT Ro	IUT Role: IMS A					
Refere	ences:	TS 124 229 (V8.10.0), clause 5.4.3.2 ¶11 (item 9 1 st numbered list)			Config Ref: CF_INT_CALL	
			ities		Condition	
	UE A	IMS A	IMS B	UE B		
	✓	✓			UE A registered in IMS A	
			✓	✓	UE B registered in IMS B	
	✓				UE A registered public identities containing a Tel URI and a SIP URI	
	UE A	IMS A	IMS B	UE B		
Step		Dire	ction		Message	IF
1	₩	Ď			initial INVITE addressed to UE B	
2 🔖 🕏			initial INVITE ✓ a P-Asserted-Identity header → the SIP URI of UE A ✓ a P-Asserted-Identity header → the Tel URI of UE A			

	Test Purpose								
Identif	fier:	TP_IN	IS_5097_	04		•			
Summ	Summary: S-CSCF uses ENUM/DNS to translate Tel URIs to SIP URIs in initial INVITE requests								
IUT R d	UT Role: IMS A								
Refere	ences:		4 229 (V8			Config Ref:	CF_INT_CALL		
		clause	5.4.3.2	¶11 (item	10				
		1 st nur	mbered li						
		<u> </u>	Entities			Conditio	n		
	UE A	IMS A	DNS B	IMS B	UE B				
	✓	✓				UE A registered in IMS A			
				✓	✓	UE B registered in IMS B			
			✓		✓	DNS B configured with an ENUM	l entry for Tel URI E.164		
		1040 4	DNO D	1340 D		Number of UE B			
01	UE A	IMS A	DNS B IMS B UE B				15		
Step		T	Direction	Π		Message		IF	
1	₩,	, €⁄				initial INVITE addressed to UE E	3		
'	⋄	Σν'				✓ a Request URI → a Tel URI			
2		₩,	Ð			DNS Query			
						✓ the Tel URI E.164 Number			
_			<u></u>			DNS Response			
3		Ýc.	⟨A			✓ NAPTR Resource Record			
						→ the SIP URI of UE B			
						initial INVITE			
						✓ a Request URI			
4		₩	Ð	Ð		→ a SIP URI of UE B			
						✓ a P-Charging-Vector header			
						* an access-network-chargin	g-info parameter		

					Test Purpose	
Identif	ier:	TP_IMS_5	106_01			
Summ	ary:			subseque	nt INVITE prior to sending it over NNI	
IUT Role: IMS A						
Refere	ences:	TS 124 229	9 (V8.10.0)		Config Ref: CF_INT_CALL	
clause 5			ause 5.4.3.2 ¶108 th numbered list)			
		Entit	ties		Condition	
	UE A	IMS A	IMS B	UE B		
	✓	✓			UE A registered in IMS A	
			✓	✓	UE B registered in IMS B	
	✓			✓	UE A has initiated a dialog with UE B	
	UE A	IMS A	IMS B	UE B	· ·	
Step		Direc	tion		Message	IF
1	₿	Ď			subsequent INVITE addressed to UE B	
2		₩,	€		subsequent INVITE ✓ a Record-Route header → the S-CSCF SIP URI of IMS A * Route header → the S-CSCF SIP URI of IMS A ✓ a P-Charging-Vector header * an access-network-charging-info parameter	

					Test Purpose			
Identif	Identifier: TP_IMS_5106_02							
Summary: S-CSCF must handle UPDATE prior to sending it over NNI								
IUT Ro	le:	IMS A		•				
References: TS 124 229 (V8.10.0), clause 5.4.3.2 ¶108 (6 th numbered list)			Config Ref: CF_INT_CALL					
		Enti	ties		Condition			
	UE A	IMS A	IMS B	UE B				
	✓	✓			UE A registered in IMS A			
			✓	\checkmark	UE B registered in IMS B			
	✓			✓	UE A has initiated a dialog with UE B			
	UE A	IMS A	IMS B	UE B				
Step		Direc	ction		Message	IF		
1	₿	Ð			UPDATE addressed to UE B			
2 ♥ ♪					 UPDATE ✓ a Record-Route header ✓ the S-CSCF SIP URI of IMS A ➤ Route header → the S-CSCF SIP URI of IMS A ✓ a P-Charging-Vector header ➤ an access-network-charging-info parameter 			

					Test Purpose		
Identif	ier:	TP_IMS_5	107_01				
Summ	Summary: S-CSCF removes its own SIP URI from the route header before sending BYE						
IUT Ro	ole:	IMS A					
Refere	nces:	TS 124 229	9 (V8.10.0),		Config Ref:	CF_INT_CALL	
		clause 5.4.3.2 ¶119 (item 1 in 8 th numbered list)		em 1 in			
	Entities				Conditio	n	
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
	✓			✓	UE A has initiated a dialog with U	ΕB	
	UE A	IMS A	IMS B	UE B			
Step		Direc	ction		Message	9	IF
1	\$	Ð			BYE addressed to UE B		
					BYE		
2 🖔 🖔 🕏		* Route header					
					→ the S-CSCF SIP URI of IM	SA	

					Test Purpose				
Identif	ier:	: TP_IMS_5107_02							
Summ	Summary: S-CSCF removes its own SIP L			wn SIP UR	I from the route header before sen	ding ACK			
IUT Ro	IUT Role: IMS A								
Refere	nces:		9 (V8.10.0),		Config Ref:	CF_INT_CALL			
		clause 5.4. 8 th number	clause 5.4.3.2 ¶119 (item 1 in 8 th numbered list)						
	Entities				Condition				
	UE A	IMS A	IMS B	UE B					
	✓	✓			UE A registered in IMS A				
			✓	✓	UE B registered in IMS B				
	✓			✓	UE A has received 2000K on initial	al request for dialog UE			
	UE A	IMS A	IMS B	UE B					
Step		Direc	ction		Message	•	IF		
1	₽	立			ACK addressed to UE B				
					ACK				
2		₩	Ď		* Route header				
					→ the S-CSCF SIP URI of IMS	SA			

					Test Purpose		
Identif	ier:	TP_IMS_5	107_03		•		
Summary: S-CSCF removes its own			moves its c	wn SIP UR	I from the route header before sen-	ding CANCEL	
IUT Ro	ole:	IMS A				-	
Refere	nces:	TS 124 229	9 (V8.10.0),		Config Ref:	CF_INT_CALL	
	clause 5.4.3.2 ¶119 (item 1 in 8 th numbered list)		em 1 in				
	Entities				Condition	1	
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
	✓			✓	UE A has received 180 on initial re	equest for dialog from UE	
	UE A	IMS A	IMS B	UE B			
Step	Step Direction				Message		IF
1	\$	Ď			CANCEL addressed to UE B		
					CANCEL		
2		₩	₽		≭ Route header		
					→ the S-CSCF SIP URI of IMS	S A	

					Test Purpose		
Identif	fier:	TP_IMS_5	107_04		•		
Summ	Summary: S-CSCF removes its own SIP URI from the route header before sending REFER						
IUT Ro	ole:	IMS A					
References:		TS 124 229 (V8.10.0), clause 5.4.3.2 ¶119 (item 1 in 8 th numbered list)			Config Ref: CF_INT_CALL		
Entities					Condition		
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
	✓			✓	UE A has received 2000K on initial request for dialog to MRFC AS in IMS A		
	UE A	IMS A	IMS B	UE B			
Step		Direc	ction		Message	IF	
1	₩,	Ď			REFER addressed to UE B		
2		\$	ъŷ		REFER ★ Route header → the S-CSCF SIP URI of IMS A		

					Test Purpose		
Identif	ier:	TP_IMS_5	108_05		<u> </u>		
Summ	Summary: S-CSCF rejects barred users on initial INVITE						
IUT Ro	ole:	IMS B					
References:		TS 124 229 (V8.10.0), clause 5.4.3.3 ¶8 (item 1 in 1 st numbered list)			Config Ref:	CF_INT_CALL	
	Entities				Condition	on	
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
			✓	✓	UE B barred user in IMS B		
	UE A	IMS A	IMS B	UE B			
Step		Dire	ction		Messag	ge	IF
1		₩	Ð		initial INVITE addressed to UE B ✓ a Request URI		
, , ,		→ a barred user in IMS B					
2		Ý:	À		404 response		

					Test Purpose				
Identif	ntifier: TP_IMS_5115_01								
Summary: S-CSCF include term-ioi parameter and restores orig-ioi in 180 responses from UE to initial recining in terminating network							quests		
IUT Role: IMS B									
References:		TS 124 229 (V8.10.0), clause 5.4.3.3 ¶91 (item 2 in 4 th numbered list)			Config Ref:	CF_INT_CALL			
Entities					Condition	1			
	UE A	IMS A	IMS B	UE B					
	✓	✓			UE A registered in IMS A				
			✓	✓	UE B registered in IMS B				
	✓			✓	UE B has received an initial reque	st for a dialog from UE A			
	UE A	IMS A	IMS B	UE B					
Step		Direc	tion		Message		IF		
1			Ý£	¢ħ	180 response addressed to UE A				
2					180 response ✓ a P-Charging-Vector header ✓ an orig-ioi parameter → operator identifier of IMS ✓ a term-ioi parameter → operator identifier of IMS				

					Test Purpose		
Identif	ier:	TP_IMS_5	115_02		•		
Summ	Summary: S-CSCF include term-ioi parameter and restores orig-ioi in 2xx responses from UE to initial require terminating network						
IUT Ro	ole:	IMS B	ing notivoni	•			
Refere	ences:	TS 124 229 clause 5.4.			Config Ref: CF_IN	IT_CALL	
	4 th num						
		Entit	ies		Condition		
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
	✓			✓	UE A has received 180 on initial request for dialog from UE B		
	UE A	IMS A	IMS B	UE B			
Step		Direc	tion		Message	lF	
1			Ŷ Ŀ	Ą	2xx response addressed to UE A		
2					2xx response ✓ a P-Charging-Vector header ✓ an orig-ioi parameter → operator identifier of IMS A ✓ a term-ioi parameter → operator identifier of IMS B		

					Test Purpose	
Identif	ier:	TP_IMS_5	115_03		•	
Summ	ary:	S-CSCF ir	nserts a sec	ond P-Ass	erted-Identity header in 1xx response indicating a registered t	el URI
		or SIP UR	I whichever	is not pres	sent	
IUT Ro	ole:	IMS B				
Refere	nces:		9 (V8.10.0)		Config Ref: CF_INT_CALL	
			.3.3 ¶92 (ite	em 3 in		
		4 th numbered list)				
	Entities				Condition	
	UE A	IMS A	IMS B	UE B		
	✓	✓			UE A registered in IMS A	
			✓	✓	UE B registered in IMS B	
		✓		✓	UE B registered public identities containing a Tel URI and SIP URI	
	✓			✓	UE B has received an initial request for a dialog from UE A	
	UE A	IMS A	IMS B	UE B		
Step		Dire	ction		Message	IF
1			ÝG.	Ą	1xx response addressed to UE A	
2		Ŷŧ	À		1xx response ✓ a P-Asserted-Identity header → the SIP URI of UE B ✓ a P-Asserted-Identity header → the Tel URI of UE B	

					Test Purpose			
Identif	ier:	TP_IMS_5	115_04		•			
Summ	ary:	S-CSCF in	serts a sec	ond P-Ass	erted-Identity header in 2xx response indicating a registered tel URI			
		or SIP URI	whichever	is not pres	sent			
IUT Ro	le:	IMS B						
Refere	nces:		9 (V8.10.0) _.		Config Ref: CF_INT_CALL			
		clause 5.4.3.3 ¶92 (item 3 in 4 th numbered list)						
	Entities				Condition			
	UE A	IMS A	IMS B	UE B				
	\checkmark	✓			UE A registered in IMS A			
			✓	✓	UE B registered in IMS B			
				✓	UE B registered public identities containing a Tel URI			
				✓	UE B default registered public identity is a SIP URI			
	✓			✓	UE A has received 180 on initial request for dialog from UE B			
	UE A	IMS A	IMS B	UE B				
Step		Direc	tion		Message	IF		
1			È	Ą	2xx response addressed to UE A			
	_				2xx response			
					√ a P-Asserted-Identity header			
2		Ŷ	^A A		→ the SIP URI of			
		4	4		UE B			
					√ a P-Asserted-Identity header			
					→ the Tel URI of UE B			

					Test Purpose		
Identif	ier:	TP_IMS_5	120_01				
Summ	ary:				om the Route header and insert its	SIP-URI in the Record Rou	ute
IUT Ro	ole:	header on IMS B	a target ren	resn reques	SI		
Refere	ences:	TS 124 229 clause 5.4. in 7 th numb			Config Ref:	CF_ROAM_CALL	
		Enti	ties		Condition	n	
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
	✓			✓	UE A has initiated a dialog with UE B		
	UE A	IMS A	IMS B	UE B			
Step		Direc	tion		Message		IF
1	\$		Ð		subsequent INVITE addressed to	UE B	
					INVITE * a topmost Route header		
2		ÝE.	Δħ.		→ the S-CSCF SIP URI of IM	SB	
_			,		✓ a Record-Route header		
					✓ the S-CSCF SIP URI		

					Test Purpose			
Identif	ier:	TP_IMS_5	120_02					
Summ	ary:	S-CSCF m	ust Remove	e its URI fro	m the Route header and insert its SIP-URI in the Record Route			
		header on	a target refr	esh reques	st			
IUT Ro	le:	IMS B						
Refere	nces:		9 (V8.10.0),		Config Ref:	CF_ROAM_CALL		
		clause 5.4.		m 3 and 5				
		in 7 th numbered list)						
		Enti	ties		Condition	n		
	UE A	IMS A	IMS B	UE B				
	✓	✓			UE A registered in IMS A			
			✓		UE B registered in IMS B			
	✓			✓	UE A has initiated a dialog with UE B			
	UE A	IMS A	IMS B	UE B				
Step		Direc	tion		Message		IF	
1	₿		Ď		UPDATE addressed to UE B			
					UPDATE			
					a topmost Route header			
2		Ý L	4		→ the S-CSCF SIP URI of IM	SB		
					✓ a Record-Route header			
					✓ the S-CSCF SIP URI			

					Test Purpose		
Identif	ier:	TP_IMS_5	121_01		•		
Summ	ary:	S-CSCF re		ss-network	-charging-info parameter from 1xx	response to subsequent o	r target
IUT Ro	IUT Role: IMS B						
Refere	ences:	TS 124 229 (V8.10.0), clause 5.4.3.3 ¶123 (9 th numbered list)			Config Ref:	CF_INT_CALL	
		Enti [,]	ties		Condition		
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
				✓	UE B has received a subsequent of in a dialog	or target refresh request	
	UE A	IMS A	IMS B	UE B			
Step		Direc	tion		Message		IF
1			Ŷ _E	À	1xx response addressed to UE A		
2		Ŷ Ŀ	ф		1xx response ✓ a P-Charging-Vector header * an access-network-charging	-info parameter	

					Test Purpose	
Identif	ier:	TP_IMS_5	121_02			
Summ	ary:	S-CSCF re		ess-netwoi	rk-charging-info parameter from 2xx response to subsequent	or target
IUT Ro	ole:	IMS B				
Refere	ences:	TS 124 229 (V8.10.0), clause 5.4.3.3 ¶123 (9 th numbered list)			Config Ref: CF_INT_CALL	
		Enti [,]	ties		Condition	
	UE A	IMS A	IMS B	UE B		
	✓	✓			UE A registered in IMS A	
			✓	✓	UE B registered in IMS B	
				✓	UE B has received a subsequent or target refresh request in a dialog	
	UE A	IMS A	IMS B	UE B		
Step		Direc	tion		Message	IF
1			È	Ą	2xx response addressed to UE A	
2		Ŷ Ŀ	À		2xx response ✓ a P-Charging-Vector header * an access-network-charging-info parameter	

					Test Purpose			
Identif	ier:	TP_IMS_5	301_01		•			
Summ	ary:	S-CSCF shand add it			a subsequent request remove its own URI from the Route header			
IUT Ro	ole:	IMS A						
Refere	ences:	TS 124 229 (V8.10.0),			Config Ref:	CF_ROAM_CALL		
		clause 5.4.3.3 ¶126 (10 th numbered list)						
		Enti	ties		Condition			
	UE A	IMS A	IMS B	UE B				
	✓	✓			UE A registered in IMS A			
			✓	✓	UE B registered in IMS B			
	✓			✓	UE A has initiated a dialog with UE B			
	UE A	IMS A	IMS B	UE B				
Step		Direc	tion		Message		퓌	
1	\$	Ð			BYE			
2		ψ,	£		Part ■ Route header ■ I the S-CSCF SIP URI of IM ■ a topmost Record-Route head ■ the S-CSCF SIP URI of IMS	ler		

Idonti	fior	TD IM	IC 5120	01		Test Purpose		
Identi Summ			1S_5139_		vas tha a	alling user and the S-CSCF receives a network internal indica	ation to	
Juliii	iai y.		e an exis			ession including registration lifetime expiration of the last publi		
IUT R	ole:	IMS A						
Refere	ences:		4 229 (V8			Config Ref: CF_INT_CALL		
		clause	5.4.5.1.2	2 ¶1 (iten	n 1 and			
		2 in 1°	t number	ed list)				
			Entities			Condition		
	UE A	NWK	IMS A	IMS B	UE B			
	✓		✓			UE A registered in IMS A		
	✓			✓	√	UE B registered in IMS B		
	UE A	NWK	IMC A	IMS B	UE B	UE A has initiated a dialog with UE B		
Step	UE A	1	IMS A	_	UEB	Massaga	IF	
Step		1	Direction			Message network internal indication that the lifetime of the last	- 11	
1		₩	Ð			public user identity has expired		
						BYE		
						✓ a Request URI		
						→ Contact header value of UE B		
						✓ a To header		
						→ the To header of the 200 response to		
						initial INVITE ✓ a From header		
						The From header of the initial INVITE The From header of the initial INVITE		
						✓ a Call-ID header		
2			₩,		ъ₽	→ the Call-ID header of the initial		
_						✓ a CSeq header		
						→ CSeq header of the calling user		
						incremented by one		
						✓ a Route header		
						routing information towards the called		
						user as stored for the dialog		
						✓ a Reason header		
						✓ further headers, based on local policy or the		
						requested session release reason		
						BYE		
						✓ a Request URI		
						→ Contact address of UE A ✓ a To header		
						→ the From header of the initial INVITE		
						✓ a From header		
						→ the To header of the 200 response to initial		
						✓ a Call-ID header		
2	Ŷ a		[₹] Ä			→ the Call-ID header of the initial INVITE		
2	Æ		4			✓ a CSeq header		
						→ CSeq header of the called user		
						incremented by one		
						✓ a Route header		
						→ routing information towards the calling		
						user as stored for the dialog		
						✓ a Reason header		
						✓ further headers, based on local policy or the requested session release reason		
						requested session release reason		

						Test Purpose	
Identif			IS_5139_				
Summ	-	releas identit	e an exis			called user and the S-CSCF receives a network internal indica ession including registration lifetime expiration of the last publi	
IUT Ro		IMS B					
Refere	nces:	clause	4 229 (V8 5.4.5.1.2	2 ¶1 (item	n 3 and	Config Ref: CF_INT_CALL	
		4 in 1 ^s	^t number	ed list)		O and distant	
	UE A	IMS A	Entities IMS B	NWK	UE B	Condition	
	UL A ✓	IIVIS A	IIVIS B	INVVI	OE B	LIE A registered in IMS A	
	•	•	✓		√	UE A registered in IMS A UE B registered in IMS B	
	✓		•		· /	UE A has initiated a dialog with UE B	
	UE A	IMS A	IMS B	NWK	UE B	OE / Thas initiated a dialog with OE B	
Step	0270		Direction	144414		Message	IF
1			ŶŁ.	ŶJ		network internal indication that the lifetime of the last	
•						public user identity has expired	
						BYE	
						✓ a Request URI	
						→ Contact header value of UE A	
						✓ a To header	
						→ the From header of the initial INVITE	
						✓ a From header	
						→ the To header of the 200 response to initial INVITE ✓ a Call-ID header	
						The Call-ID header of the initial INVITE The Call-ID header of the initial invite in	
2	Û:		Ġ.			✓ a CSeq header	
						→ CSeq header of the called user	
						incremented by one	
						✓ a Route header	
						routing information towards the calling	
						user as stored for the dialog	
						✓ a Reason header	
						✓ further headers, based on local policy or the	
						requested session release reason	
						BYE	
						✓ a Request URI	
						→ Contact address of UE A ✓ a To header	
						→ the To header of the 200 response to initial INVITE	
						✓ a From header	
						→ the From header of the initial INVITE	
						✓ a Call-ID header	
2			₩,		Ð	→ the Call-ID header of the initial INVITE	
			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		Σν	√ a CSeq header	
						→ CSeq header of the calling user	
						incremented by one	
						✓ a Route header→ routing information towards the calling	
						user as stored for the dialog	
						✓ a Reason header	
						✓ further headers, based on local policy or the	
						requested session release reason	

5.4.3 Dialog at I-CSCF

				Т	est Purpose						
Identif	ier:	TP_IMS_5	131_01		•						
Summ	ary:	I-CSCF sh	all remove F	P-Charging-F	unction-Addresses header from 180 response to initial req	uest					
IUT Ro	ole:	IMS B	MS B								
Refere	nces:	TS 124 229	9 (V8.10.0),		Config Ref: CF_INT_CALL						
		clause 5.3.2.1 ¶62 (after note 10)									
		En	tities		Condition						
	UE A	IMS A	IMS B	UE B							
	✓	✓			UE A registered in IMS A						
			✓	✓	UE B registered in IMS B						
	✓			✓	UE B has received an initial request for a dialog from UE A						
	UE A	IMS A	IMS B	UE B							
Step		Dire	ection		Message	IF					
1			Ŷ <u>E</u>	Ą	180 response addressed to UE A						
2		Ŷŧ	Ą		180 response * a P-Charging-Function-Addresses header						

					Test Purpose	
Identif	ier:	TP_IMS_5	131 02		•	
Summ	ary:			P-Charging-	-Function-Addresses header from 200 response to initial re	quest
IUT Ro	IUT Role: IMS B				•	
Refere	ences:		9 (V8.10.0), 2.1 ¶Claus Note 10)		Config Ref: CF_INT_CALL	
		Ent	ities		Condition	
	UE A	IMS A	IMS B	UE B		
	✓	✓			UE A registered in IMS A	
			✓	✓	UE B registered in IMS B	
	✓			✓	UE A has received 180 on initial request for dialog from UE B	
	UE A	IMS A	IMS B	UE B		
Step		Dire	ction		Message	IF
1			Ŷ <u>E</u>	À	2xx response addressed to UE A	
2		Ŷŧ	Ŷħ		2xx response * a P-Charging-Function-Addresses header	

				T	est Purpose		
Identif	ier:	TP_IMS_5	132_01				
Summ	ary:	I-CSCF sh	all return ar	appropriate i	esponse to initial request to non-	existent user	
IUT Ro	ole:	IMS B					
Refere	nces:	TS 124 22	9 (V8.10.0),		Config Ref:	CF_INT_CALL	
			.2.1 ¶54 (aft	er 5 th			
	numbered						
	Entities				Condition	on	
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
		x			IMS B not configured with local	policy to attempt	
					request routeing		
			×	×	UE B not registered in IMS B		
	UE A	IMS A	IMS B	UE B			
Step		Dir	ection		Messag	е	IF
					initial INVITE addressed to UE	В	
1		₩	Ð		✓ a Request URI		
			→ a non existing user in IMS B				
2a		Ŷ±	À		404 response		
2b		ŶĿ	Ą		604 response		

					Test Purpose	
Identif	ier:	TP_IMS_5	133_01			
Summ	ary:	I-CSCF sha	all return ur	nsuccessful	response to initial request to non-registered user	
IUT Ro	ole:	IMS B				
References:		TS 124 229 (V8.10.0), clause 5.3.2.1 ¶55 (before 6 th numbered list)			Config Ref: CF_INT_CALL	
		Entities			Condition	
	UE A	IMS A	IMS A IMS B UE B			
	✓	✓			UE A registered in IMS A	
			×	×	UE B not registered in IMS B	
			×	×	IMS B not configured with a terminating unregistered filter criterion for UE B	
	UE A	IMS A	IMS B	UE B		
Step		Direction			Message	IF
1		₩,	\$ \$		initial INVITE addressed to UE B	
2		ŶĿ	Ą		4xx response	

5.4.4 Dialog at IBCF

					Test Purpose	
Identif	ier:	TP_IMS_51	35_01		•	
Summ	ary:	If a request top of the R			oute header the IBCF shall add its own routeable SIP URI	to the
IUT Ro	ole:	IMS A				
Refere	ences:	TS 124 229 (V8.10.0), clause 5.10.4.1 ¶7 (after note 3)			Config Ref: CF_INT_CALL	
		Entities			Condition	
	UE A	IMS A	IMS B	UE B		
	✓	✓	✓		UE A registered in IMS A	
			✓	✓	UE B registered in IMS B	
		✓			IMS A configured for topology hiding	
	UE A	IMS A	IMS B	UE B		
Step			Direction		Message	IF
1	₩	र्छ			initial INVITE	
2		\$	ъŶ		initial INVITE ✓ an additional topmost Record-Route header ✓ the IBCF SIP URI of IMS A	

					Test Purpose		
Identif	ier:	TP_IMS_5	137_01				
Summ	ary:	The IBCF	shall perfore	n encryptio	on for topology hiding before an initial INVITE request is sent		
IUT Ro	UT Role: IMS A						
References:		TS 124 229 (V8.10.0), clause 5.10.4.2 ¶1 (items 7 & 8 in 1 st numbered list)			Config Ref: CF_INT_CALL		
	Entities				Condition		
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
		✓			IMS A configured for topology hiding		
	UE A	IMS A	IMS B	UE B			
Step		Dire	ction		Message		
1	₩	Ð			initial INVITE addressed to UE B		
2		₩,	∌		initial INVITE ✓ a Via header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries ✓ a tokenized-by parameter ✓ a Route header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries ✓ a tokenized-by parameter		

					Test Purpose	
Identif	ier:	TP_IMS_5	137 02		•	
Summ	ary:	The IBCF s	shall perforr	m encryption	n for topology hiding before 180 response is sent	
IUT Ro	ole:	IMS B	•	• • •		
Refere	nces:	TS 124 229 (V8.10.0), clause 5.10.4.2 ¶1 (item 8 in 1 st numbered list)			Config Ref: CF_INT_CALL	
	Entities			Condition		
	UE A	IMS A	IMS B	UE B		
	✓	✓			UE A registered in IMS A	
			✓	✓	UE B registered in IMS B	
	✓		✓		UE B has received an initial request for a dialog from UE A	
			✓		IMS B configured for topology hiding	
	UE A	IMS A	IMS B	UE B		
Step		Dire	ction		Message	IF
1			Ŷ <u>E</u>	Ą	180 response addressed to UE A	
2		Ŷŧ.	Ą		180 response ✓ Via header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries ✓ a tokenized-by parameter	

					Test Purpose			
Identif	ier:	TP_IMS_5	137_03					
Summ	ary:	The IBCF	shall perforr	n encryption	n for topology hiding before 200 re	sponse is sent		
IUT Ro	ole:	IMS B	•	71	1 0,	•		
Refere	ences:	TS 124 229 (V8.10.0), clause 5.10.4.2 ¶(item 8 in 1 st numbered list)			Config Ref:	CF_INT_CALL		
		Ent	ities		Condition	n		
	UE A	IMS A	IMS B	UE B				
	✓	✓			UE A registered in IMS A			
			✓	✓	UE B registered in IMS B			
	✓			✓	UE A has received 180 on initial UE B			
			✓		IMS B configured for topology his	ding		
	UE A	IMS A	IMS B	UE B				
Step		Dire	ction		Messag	e	IF	
1			Û	Ą	200 response addressed to UE	A		
2		€ेंच	Ŷħ			 ✓ a Via header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries 		

					Test Purpose			
Identif	ier:	TP_IMS_5	137_04		•			
Summ	ary:	The IBCF	shall perfor	m encryption	for topology hiding b	efore an initial F	REGISTER request is	sent
IUT Ro	ole:	IMS A						
Refere	ences:	TS 124 229 (V8.10.0), clauses 5.10.4.1 and 5.10.4.2 ¶1 (1 st numbered list)		Config Ref:	CF	-ROAM_REG		
		_, ,	ities			Condition		
	UE B	IMS A	IMS B					
		√		IMS A confi	gured for topology hid	ling		
	UE B	IMS A	IMS B		J			
Step			Message					
1	₩,	Ð		unprotecte	d REGISTER addres	sed to IMS B		
2		₩,	ਜੁੰ	 ✓ encry ✓ a toke ✓ a Route → the IBO ✓ encry ✓ a toke ✓ a Path → the IE ✓ encry 	eader BCF SIP URI of IMS a voted consecutive hea enized-by parameter e header CF SIP URI of IMS A voted consecutive hea enized-by parameter	der entries		

					Test Purpose			
Identif	ier:	TP_IMS_5	404_01		•			
Summ	ary:	IBCF shall	remove P-0	Charging-F	unction-Addresses header from ini	tial INVITE request		
IUT Ro	ole:	IMS A				•		
Refere	nces:	TS 124 229 (V8.10.0),			Config Ref:	CF_INT_CALL		
		clause 5.10	0.2.2 ¶1 (ite	m 8 in				
	1 st numbered list)							
Entities				Condition	n			
	UE A	IMS A	IMS B	UE B				
	✓	✓			UE A registered in IMS A			
			✓	✓	UE B registered in IMS B			
		✓			IMS A configured for topology hidi	ing		
	UE A	IMS A	IMS B	UE B				
Step		Direc	tion		Message	е	IF	
1	\$	Ð			initial INVITE addressed to UE B			
•	♦	ΣV			√ a P-Charging-Function-Addresses header			
2		М.	^		initial INVITE			
2		₩	∌		* a P-Charging-Function-Addre	sses header		

					Test Purpose	
Identif	ier:	TP_IMS_5	408_01			
Summ	ary:	The IBCF	shall perforr	n encryption	n for topology hiding before ACK request is se	nt
IUT Ro	ole:	IMS A	•	••		
Refere	ences:	TS 124 229 (V8.10.0), clause 5.10.2.3 ¶1 (item 4 in 1 st numbered list)			Config Ref: CF_INT_C	ALL
		Entities			Condition	
	UE A	IMS A	IMS B	UE B	Condition	
	√	111.€ / 1		0_2	UE A registered in IMS A	
			✓	√	UE B registered in IMS B	
	✓			✓	UE A has received 2000K on initial request f	or dialog
		✓			IMS A configured for topology hiding	
	UE A	IMS A	IMS B	UE B	J 1 3/	
Step		Dire	ction		Message	IF
1	₽	Ď			ACK addressed to UE B	
2		₩,	±Ŷ		ACK ✓ a Via header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries ✓ a tokenized-by parameter ✓ a Route header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries ✓ a tokenized-by parameter	

					Test Purpose		
Identif	ier:	TP_IMS_5	408_02		•		
Summ	ary:	The IBCF	shall perfori	m encryptio	n for topology hiding before CANCEL request is sent		
IUT Ro	ole:	IMS A	•				
Refere	ences:	TS 124 229 (V8.10.0), clause 5.10.2.3 ¶1 (item 4 in 1 st numbered list)			Config Ref: CF_INT_CALL		
		Ent	Entities		Condition		
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
	✓			✓	UE B has received 180 on initial request for dialog from UE A		
		✓			IMS A configured for topology hiding		
	UE A	IMS A	IMS B	UE B			
Step		Dire	ction		Message	IF	
1	\$	Ð			CANCEL addressed to UE B		
2		₩,	£		 CANCEL ✓ a Via header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries ✓ a tokenized-by parameter ✓ a Route header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries ✓ a tokenized-by parameter 		

					Test Purpose		
Identif	ier:	TP_IMS_5	408_03		•		
Summ	ary:	The IBCF	shall perforr	n encryptio	n for topology hiding before BYEre	equest is sent	
IUT Ro	ole:	IMS A	•			•	
Refere	nces:	TS 124 229 (V8.10.0),			Config Ref:	CF_INT_CALL	
		clause 5.10.2.3 ¶1 (item 4 in 1st numbered list)					
		Ent	ities		Condition	on	
	UEA IMSA IMSB UEB			UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
	✓			✓	UE A has initiated a dialog with L	JE B	
		✓			IMS A configured for topology hiding		
	UE A	IMS A	IMS B	UE B			
Step		Dire	ction		Messag	е	IF
1	♦	Ð			BYE addressed to UE B		
2		\$	₽Ŷ		BYE ✓ a Via header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries ✓ a tokenized-by parameter ✓ a Route header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries ✓ a tokenized-by parameter		

					Test Purpose			
Identif	ier:	TP_IMS_5	408_04		•			
Summ	ary:	The IBCF	shall perfore	m encryptio	n for topology hiding before subsec	quent INVITE request is s	ent	
IUT Ro	ole:	IMS A	•					
Refere	ences:	TS 124 229 (V8.10.0), clause 5.10.2.3 ¶1 (item 4 in 1 st numbered list)			Config Ref:	CF_INT_CALL		
			ities		Conditio	n		
	UE A	IMS A	IMS B	UE B	Solidition			
	✓	✓			UE A registered in IMS A			
			✓	✓	UE B registered in IMS B			
	✓			✓		UE A has initiated a dialog with UE B		
		✓			IMS A configured for topology hid			
	UE A	IMS A	IMS B	UE B				
Step		Dire	ction		Message		IF	
1	₩	Ð			subsequent INVITE addressed to	o UE B		
2		\$	£		subsequent INVITE ✓ a Via header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries ✓ a tokenized-by parameter ✓ a Route header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries ✓ a tokenized-by parameter			

					Test Purpose			
Identif	ier:	TP_IMS_5	414_01		•			
Summ	ary:	When IBCF response	receives a	an initial INV	TTE request and it shall respond w	vith a 100 (Trying) provision	nal	
IUT Ro	ole:	IMS B						
References:		TS 124 229 (V8.10.0), clause 5.10.3.2 ¶12 (item 1 in 1 st numbered list)			Config Ref:	CF_INT_CALL		
	Entities				Conditio	n		
	UE A	IMS A	IMS B	UE B				
	✓	✓			UE A registered in IMS A			
			✓	✓	UE B registered in IMS B			
			✓		IMS B configured for topology his	ding		
	UE A	IMS A	IMS B	UE B				
Step Direction				Message	е	IF		
1		₩	Ď		initial INVITE addressed to UE B			
2	-	Ŷ:	Ą		100 response			

				To	est Purpose			
Identif	ier:	TP_IMS_C	ONTENT_S	HARE_01	<u>-</u>			
Summ	ary:	The IBCF s	hall pass co	ontent share s	pecific information in the OPTIONS request			
IUT Ro	le:	IMS A						
Refere	nces:	Rich Comm	unication S	uite	Config Ref:	CF_INT_CALL		
		Release 2,	Technical re	ealization [7],				
	clause 8.1							
		En	tities		Conditi	on		
	UE A	IMS A	IMS B	UE B				
	✓	✓			UE A registered in IMS A			
		✓ ✓		✓	UE B registered in IMS B			
	✓			✓	UE A has initiated a dialog with	UE B		
	UE A	IMS A	IMS B	UE B				
Step		Dire	ection		Messag	ge	IF	
1	Ð	Ď			OPTIONS addressed to UE B			
2					OPTIONS ✓ a Contact header → +g.3gpp.cs-voice featur ✓ a Accept-Contact header → +g.3gpp.cs-voice featur			

				To	est Purpose				
Identif	ier:	TP_IMS_C	ONTENT_S	HARE_02	•				
Summ	ary:	The IBCF sl	hall pass co	ntent share s	pecific information in the subsequent INVITE request				
IUT Ro	ole:	IMS A							
Refere	References: Rich Communication Suite			uite	Config Ref:	CF_INT_CALL			
		Release 2,	Technical re	ealization [7],					
		clause 8.1							
		En	tities		Condition	on			
	UE A	IMS A	IMS B	UE B					
	✓	✓			UE A registered in IMS A				
			✓	✓	UE B registered in IMS B				
	✓			✓	UE A has initiated a dialog with UE B				
	UE A	IMS A	IMS B	UE B					
Step		Dire	ection		Messag		IF		
1	₽	Ď			subsequent INVITE addresse	d to UE B			
					subsequent INVITE ✓ a Contact header				
2		₩ →			→ +g.3gpp.cs-voice feature	e tag			
_ -		,	_		✓ a Accept-Contact header				
					→ +g.3gpp.cs-voice feature	e tag			

				To	est Purpose		
Identif	ier:	TP_IMS_C	ONTENT_S	HARE_03	-		
Summ	ary:	The IBCF s	hall transpo	rt content sha	ring rejection in 603 response		
IUT Ro	ole:	IMS A					
Refere	ences:	Rich Communication Suite Release 2, Technical realization [7], clause 8.1			Config Ref:	CF_INT_CALL	
		En	tities		Condition		
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
	✓			√	UE A has initiated a dialog with	UE B	
	UE A	IMS A	IMS B	UE B			
Step		Dire	ection		Messag	je	IF
1			Ŷ:	₽ A	603 response		
2		€	Ą		603 response		

				Te	est Purpose		
Identif	ier:	TP_IMS_C	ONTENT_S	HARE_04			
Summ	ary:	The IBCF s	hall transpo	rt content sha	ring rejection in 603 response		
IUT Ro	ole:	IMS A	•				
References: Rich Communication Suite Release 2, Technical realization [7], clause 8.1					Config Ref:	CF_INT_ROAM	
		En	tities		Condition		
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
	✓			✓	UE A has initiated a dialog with	UE B	
	UE A	IMS A	IMS B	UE B			
Step		Dire	ection		Messag	je	IF
1		Ý£		À	603 response		
2		₩	Ð		603 response		

5.5 Messaging Procedures

5.5.1 Messaging at P-CSCF

					Test Purpose		
Identif	ier:	TP_IMS_5	050_01		•		
Summ	ary:		P-CSCF recout topology		SSAGE request from a UE for wh	nich a Service-Route head	er list
IUT Ro	ole:	IMS A					
Refere	ences:	TS 124 229 (V8.10.0), clause 5.2.6.3.3 ¶(1 st numbered list)			Config Ref:	CF_ROAM_CALL	
		Ent	ities		Condition	on	
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
		×			IMS A not configured for topolog	y hiding	
	UE A	IMS A	IMS B	UE B			
Step		Dire	ction		Messag	je	IF
1		È		Ą	MESSAGE		
2		4	∌		MESSAGE ✓ a Route header → the P-CSCF SIP URI of IN → the list of Service Route h from registration * a P-Preferred-Identity header ✓ P-Asserted-Identity header ✓ an address of UE A ✓ the P-Charging-Vector head ✓ an icid-value parameter	eader URIs er	

5.5.2 Messaging at S-CSCF

					Test Purpose	
Identif	ier:	TP IMS 5	097 05			
Summ	ary:	S-CSCF m			arameter, remove access-network-charging-info parameter	before
IUT Ro	ole:	IMS A				
Refere	ences:	TS 124 229 (V8.10.0), clause 5.4.3.2 ¶1			Config Ref: CF_INT_CALL	
		Enti			Condition	
	UE A	IMS A	IMS B	UE B		
	✓	✓			UE A registered in IMS A	
			✓	✓	UE B registered in IMS B	
		×			IMS A not configured for topology hiding	
	UE A	IMS A	IMS B	UE B		
Step		Direc	ction	<u> </u>	Message	IF
1	₩,	Ð			MESSAGE addressed to UE B	
2		₩,	Ð		MESSAGE * a Route header → the S-CSCF SIP URI of IMS A √ a P-Charging-Vector header √ an icid-value parameter √ an orig-ioi parameter → IMS A * an access-network-charging-info parameter * a term-ioi parameter	

					Test Purpose	
Identif	ier:	TP_IMS_5	097_06		•	
Summ	ary:	S-CSCF in	serts a sec	ond P-Asse	erted-Identity header indicating a tel URI	
IUT Ro	le:	IMS A			<u> </u>	
Refere	References: TS 124 229 (V8.10.0)		,	Config Ref: CF_INT_CALL		
		clause 5.4	.3.2 ¶11 (ite	m 9 in		
	1 st numbered list)					
		Ent	ities		Condition	
	UE A	IMS A	IMS B	UE B		
	✓	✓		UE A registered in IMS A		
		✓ ✓		✓	UE B registered in IMS B	
	✓				UE A registered public identities containing a SIP URI	
	UE A	IMS A	IMS B	UE B		
Step		Dire	ction		Message	IF
1	Ŷ	Ď			MESSAGE addressed to UE B	
					MESSAGE	
					√ a P-Asserted-Identity header	
•		M .			→ the SIP URI of	
2		₩ 🖈			UE A	
					√ a P-Asserted-Identity header	
					→ the Tel URI of UE A	

					Test Purpose	
Identif	ier:	TP_IMS_5	5097_07		· · · · · · · · · · · · · · · · · · ·	
Summ	ary:	S-CSCF ir	nserts a sec	ond P-Asse	erted-Identity header indicating a SIP URI	
IUT Ro	JT Role: IMS A					
Refere	nces:	TS 124 229 (V8.10.0),			Config Ref: CF_INT_CALL	
		clause 5.4.3.2 ¶11 (item 9 in 1st numbered list)		em 9 in	_	
		Ent	ities		Condition	
	UE A	IMS A	IMS B	UE B		
	✓	✓			UE A registered in IMS A	
		✓ ✓		✓	UE B registered in IMS B	
	✓				UE A registered public identities containing a Tel URI	
	UE A	IMS A	IMS B	UE B		
Step		Dire	ction		Message	IF
1	Þ	Ð			MESSAGE addressed to UE B	
					MESSAGE ✓ a P-Asserted-Identity header	
					→ the SIP URI of	
2		\$ ∌			UE A	
					✓ a P-Asserted-Identity header	
					→ the Tel URI of UE A	

						Test Purpose		
Identif	fier:	TP_IN	IS_5097_	_08		•		
Summ	nary:	S-CS0	CF uses E	ENUM/DI	S to tran	slate Tel URIs to SIP URIs in MES	SAGE requests	
IUT R d	ole:	IMS A					·	
Refere	ences:	clause	4 229 (V8 2 5.4.3.2 9	11 (item	10	Config Ref: CF_INT_CALL		
		in1 st n	umbered)					
	Entities					Conditio	n	
	UEA IMSA DNSA IMSB UEB							
	✓	✓				UE A registered in IMS A		
				✓	✓	UE B registered in IMS B		
			✓		✓	DNS B configured with an ENUM entry for Tel URI E.164 Number of UE B		
	UE A	IMS A	DNS A	IMS B	UE B			
Step			Direction	1		Message		
1	Ð	र्च				MESSAGE addressed to UE B ✓ a Request URI → a Tel URI		
2		₩	Ð			DNS Query ✓ the Tel URI E.164 Number		
3		रींच	Ą			DNS Response ✓ NAPTR Resource Record → the SIP URI of UE B		
4		₽\$		<i>ਜੁੰ</i>		MESSAGE addressed to UE B ✓ a Request URI → a SIP URI of UE B ✓ a P-Charging-Vector header * an access-network-charging		

						Test Purpose		
Identif	ier:	TP_IN	IS_5097_	10		•		
Summ	ary:				S-CSCF v	with matching filter criteria AS		
IUT Ro	ole:	IMS B						
Refere	References: TS 124 229 (V8.10.0), clause 5.4.3.2 ¶11 (item 5 and 8 in 1 st numbered list)				5 and 8	Config Ref: CF_ROAM_AS		
			Entities			Conditio	n	
	UE A	IMS A	IMS B	AS B	UE B			
	✓	✓				UE A registered in IMS A		
			\checkmark		✓	UE B registered in IMS B		
		✓			✓	UE B visiting IMS A		
			\checkmark	✓		IMS B configured with filter criter		
			✓	✓		AS B within the trust domain of IMS B		
	UE A	IMS A	IMS B	AS B	UE B			
Step			Direction	1		Message		Ŧ
1		♦	ΣŶ			MESSAGE addressed to UE A		
2			₩	±Ŷ		MESSAGE ✓ a Route header → the SIP URI of AS B ✓ a P-Charging-Function-Addr ✓ a P-Charging-Vector header ✓ an access-network-chargir ✓ an orig-ioi parameter → IMS A		

					Test Purpose			
Identif	ier:	TP_IMS_5	108_01		<u> </u>			
Summ	ary:	Standalone	e request; te	erminate	ed at the served user			
IUT Ro	ole:	IMS B	•					
Refere	ences:	clause 5.4.3.3 ¶5 (1 st numbered list)			Config Ref: CF_ROAM_CALL			
		Entiti			Condition			
	UE A	IMS A	IMS B	UE B				
	✓	✓			UE A registered in IMS A			
			✓	✓	UE B registered in IMS B			
	UEA IMSA IMSB UEB							
Step		Direct	ion		Message	IF		
1		₽	Ð		INVITE addressed to UE B ✓ a P-Charging-Vector header ✓ an icid-value parameter			
2	€ 4				INVITE ✓ Route header → the S-CSCF SIP URI of IMS B ✓ a P-Charging-Vector header ✓ the same icid-value parameter × ioi parameters ✓ a Record-Route header ✓ the S-CSCF SIP URI of IMS B			

					Test Purpose		
Identif	ier:	TP_IMS_5	108_02		•		
Summ	ary:	Standalone	e request; te	rminated a	the served user		
IUT Ro		IMS B	,				
Refere	ences:	TS 124 229 (V8.10.0), clause 5.4.3.3 ¶5 (1 st numbered list)			Config Ref:	CF_ROAM_CALL	
		Ent	ities		Con	dition	
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
	UE A	IMS A	IMS B	UE B			
Step		Dire	ction		Mes	ssage	IF
1		\$	Ð		MESSAGE addressed to UI ✓ a P-Charging-Vector he ✓ an icid-value paramet	ader	
2		€ ±	ħ		MESSAGE ✓ Route header → the S-CSCF SIP URI of IMS B ✓ a P-Charging-Vector header ✓ the same icid-value parameter ✗ ioi parameters ✓ a Record-Route header ✓ the S-CSCF SIP URI of IMS B		

					Test Purpose		
Identif	ier:	TP_IMS_5	108_06		•		
Summ	ary:	S-CSCF re	jects barre	d users on N	MESSAGE		
IUT Ro	ole:	IMS B	-				
Refere	nces:	TS 124 229	9 (V8.10.0)	ı	Config Ref:	CF_INT_CALL	
		clause 5.4.	3.3 ¶6 (iten	า 1	_		
		in1 st numbe	ered list)				
		Ent	ities		Condition	on	
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
			✓	✓	UE B barred user in IMS B		
	UE A	IMS A	IMS B	UE B			
Step		Dire	ction		Messag	je	IF
					MESSAGE addressed to UE B		
1		₩	Ð		✓ a Request URI		
					a barred user in IMS B		
2		Ý:	Ą		404 response		

					Test Purpose		
Identif	ier:	TP_IMS_5	117_01				
Summ	ary:	S-CSCF re transaction		ss-network	c-charging-info parameter from 1xx respons	se to standalone	
IUT Ro	ole:	IMS B					
Refere	ences:	TS 124 229 (V8.10.0), clause 5.4.3.3 ¶100 (item 2 in 5 th numbered list)			Config Ref: CF_IN	IT_CALL	
		Entit	ies		Condition		
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
				✓	UE B has received a standalone request		
	UE A	IMS A	IMS B	UE B			
Step		Direc	tion		Message		IF
1			ŶĿ	À	1xx response addressed to UE A		
2		Ŷ c	À		1xx response ✓ a P-Charging-Vector header * an access-network-charging-info pa	rameter	

					Test Purpose		
Identif	ier:	TP_IMS_5	117_02				
Summ	ary:		move acce	ss-network	-charging-info parameter from 2xx res	ponse to standalone	
IUT Ro	ole:	IMS B					
Refere	ences:	TS 124 229 clause 5.4. 5 th number	3.3 ¶100 (ii		Config Ref:	F_INT_CALL	
		Enti	ties		Condition		
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			✓	✓	UE B registered in IMS B		
				✓	UE B has received a standalone request		
	UE A	IMS A	IMS B	UE B			
Step		Direc	ction		Message		IF
1			Ŷ Ŀ	À	2xx response addressed to UE A		
2		Ŷ a	Ą		2xx response ✓ a P-Charging-Vector header x an access-network-charging-inf	fo parameter	

					Test Purpose			
Identif	ier:	TP_IMS_5	117_05		•			
Summ	ary:				rted-Identity header in 1xx respons not present	se from UE for initial reque	st	
IUT Ro	ole:	IMS B			·			
Refere	ences:	TS 124 229 (V8.10.0), clause 5.4.3.3 ¶(item 1 in 5 th numbered list)			Config Ref:	CF_INT_CALL		
		Enti	ities		Conditio	n		
	UE A	IMS A	IMS B	UE B				
	✓	✓			UE A registered in IMS A			
		✓ ✓			UE B registered in IMS B			
		V			UE B registered_public_identities and a SIP_URI	s containing a Tel_URI		
	✓			✓	UE B has received a standalone	request from UE A		
	UE A	IMS A	IMS B	UE B		•		
Step		Dire	ction		Message	е	IF	
1			ŶĿ	Ą	1xx response addressed to UE A	4		
2		€ <u>a</u>	Ŷħ		1xx response ✓ a P-Asserted-Identity header → the tel URI of UE B ✓ a P-Asserted-Identity header → a SIP URI of UE B			

					Test Purpose			
Identif	ier:	TP_IMS_5	117_06		•			
Summ	ary:				erted-Identity header in 2xx response from UE for initial req f not present	uest		
IUT Ro	ole:	IMS B			•			
Refere	ences:	TS 124 229 (V8.10.0), clause 5.4.3.3 ¶100 (item 1 in 5 th numbered list)			Config Ref: CF_INT_CALL			
		Entit	ies		Condition			
	UE A	IMS A	IMS B	UE B				
	✓	✓			UE A registered in IMS A			
		✓ ✓			UE B registered in IMS B			
		√			UE B registered_public_identities containing a Tel_URI and a SIP_URI			
	✓			✓	UE B has received a standalone request from UE A			
	UE A	IMS A	IMS B	UE B				
Step		Direc	tion		Message	IF		
1			Æ.	¢ħ	2xx response addressed to UE A			
2		€त	ф		2xx response ✓ a P-Asserted-Identity header → the tel URI of UE B ✓ a P-Asserted-Identity header → the SIP URI of UE B			

					Test Purpose	
Identif	ier:	TP_IMS_5	118_01		•	
Summ	ary:	S-CSCF in	clude term-	ioi paramet	er and restores orig-ioi in 200 responses to standalone requ	ests
IUT Ro	ole:	IMS B		•		
Refere	nces:		9 (V8.10.0),		Config Ref: CF_INT_CALL	
		5.4.3.3 ¶105 (item 2 in 6 th numbered list)				
		Ent	ities		Condition	
	UE A	IMS A	IMS B	UE B		
	✓	✓			UE A registered in IMS A	
			✓	✓	UE B registered in IMS B	
	✓			✓	UE B has received a standalone request from UE A	
	UE A	IMS A	IMS B	UE B		
Step		Dire	ction		Message	IF
1			Ŷ Ŀ	Ą	200 response addressed to UE A	
2		ंदित	ħ		200 response ✓ a P-Charging-Vector header ✓ an orig-ioi parameter → operator identifier of IMS A ✓ a term-ioi parameter → operator identifier of IMS B	

5.6 Application Server Handling Procedures

5.6.1 Application Server Handling at S-CSCF

						Test Purpose		
Identif	fier:	TP_IN	IS_5097_	09		•		
Summ	nary:	Initial	request fo	or a dialo	g handling	by S-CSCF with matching filter of	riteria AS	
IUT R	ole:	IMS B				•		
Refere	References:		4 229 (V8 2 5.4.3.2 ¶ numbered	[11 (item:	s 5 and 8	Config Ref:	CF_ROAM_AS	
			Entities			Condition	n	
	UE A	IMS A	IMS B	AS B	UE B			
	✓	✓				UE A registered in IMS A		
			✓		✓	UE B registered in IMS B		
		\checkmark			✓	UE B visiting IMS A		
			✓	✓		IMS B configured with filter criter	ia to contact AS B	
			✓	✓		AS B within the trust domain of I	MS B	
	UE A	IMS A	IMS B	AS B	UE B			
Step			Direction	1		Messag		IF
1		₩	Ð			initial INVITE addressed to UE A	4	
2			\$	ъŷ		initial INVITE ✓ a Route header → the SIP URI of AS B ✓ a P-Charging-Function-Addr ✓ a P-Charging-Vector header ✓ an orig-ioi parameter → operator identifier of IMS × a term-ioi parameter ✓ access-network-charging-in	S A	

						Test Purpose		
Identif	ier:	TP_IM	IS_5097_	13		•		
Summ	ary:	Standa	alone req	uest han	dling by S	-CSCF with matching filter criteria	AS	
IUT Ro	ole:	IMS B				-		
Refere	ences:	clause	4 229 (V8 5.4.3.2 ¶ numbered	11 (item:	s 5 and 8	Config Ref:	CF_ROAM_AS	
			Entities			Conditio	n	
	UE A	IMS A	IMS B	AS B	UE B			
	✓	✓				UE A registered in IMS A		
			✓		✓	UE B registered in IMS B		
		√				UE B visiting IMS A		
			✓	✓		IMS B configured with filter criter	ia to contact AS B	
		✓ ✓				AS B within the trust domain of II	MS B	
	UE A	IMS A	IMS B	AS B	UE B			
Step			Direction	1		Messag	e	IF
1		₽	Ď			PUBLISH sent by UE_B		
2			₽	₽Ŷ		PUBLISH ✓ a Route header → the SIP URI of AS B ✓ a P-Charging-Function-Addr ✓ a P-Charging-Vector header ✓ an orig-ioi parameter → operator identifier of IMS × a term-ioi parameter ✓ access-network-charging-inf	S A	

						Test Purpose						
Identifier: TP_IMS_5097_14 Summary: Initial request for a dialog handling by S-CSCF with matching filter criteria AS												
Summ	ary:	Initial r	equest fo	r a dialo	g handling	by S-CSCF with matching filter of	criteria AS					
IUT Ro	ole:	IMS A				•						
Refere	References:		4 229 (V8 5.4.3.2 ¶ umbered	[11 (item:	s 5 and 8	Config Ref:	CF_IP_TV					
	Entities					Condition	on					
	UE A	IMS A		AS A								
	✓	✓				UE A registered in IMS A						
		✓		✓		IMS A configured with filter criter	ia to contact AS A					
	UE A	IMS A		AS A								
Step			Direction	1		Messag	e	IF				
1		\$		∌		SUBSCRIBE ✓ a Route header → the SIP URI of AS A ✓ a P-Charging-Function-Addu ✓ a P-Charging-Vector header ✓ an orig-ioi parameter → operator identifier of IM: × a term-ioi parameter ✓ access-network-charging-in	S A					

						Test Purpose	
Identif	ier:	TP_IN	IS_5108_	03		•	
Summ	ary:	Reque	est for a in	nitial dialo	og termina	ated at the served user	
IUT Ro	ole:	IMS B					
Refere	References:		4 229 (V8 5.4.3.3 9 ered list)		1 in 1 st	Config Ref: CF_INT_AS	
			Entities			Condition	
	UE A	IMS A	IMS B	AS B	UE B		
	✓	✓				UE A registered in IMS A	
		✓			\checkmark	UE B registered in IMS A	
		✓ ✓				IMS B configured with filter criteria to contact AS B	
	UE A	IMS A IMS B AS B UE B					
Step			Direction	1		Message	IF
1		₩	Ď			initial INVITE addressed to UE B	
2			\$	∌े		INVITE ✓ a topmost Route header → the SIP URI of AS B ✓ a Route header → the S-CSCF SIP URI of IMS B ✓ a P-Charging-Vector header ✓ an orig-ioi parameter → operator identifier of IMS A × a term-ioi parameter	

						Test Purpose	
Identif	fier:	TP IN	IS_5108_	04			
Summ	narv:				minated at	t the served user	
IUT R		IMS B		,			
References:		TS 12 clause	4 229 (V8 5.4.3.3 • ered list)	¶5 (item 4	4 in1 st	Config Ref: CF_INT_AS	
			Entities			Condition	
	UE A	IMS A	IMS B	AS B	UE B		
	✓	✓				UE A registered in IMS A	
		✓			✓	UE B registered in IMS B	
	✓ ✓					IMS B configured with filter criteria to contact AS B	
	UEA IMSA IMSB ASB UEB				UE B		
Step		<u>'</u>	Direction	n	<u>*</u>	Message	IF
1		₩,	Ð			MESSAGE addressed to UE B	
2			₩	∌		MESSAGE ✓ a topmost Route header → the SIP URI of AS B ✓ a Route header → the S-CSCF SIP URI of IMS B ✓ a P-Charging-Vector header ✓ an orig-ioi parameter → operator identifier of IMS A × a term-ioi parameter	

						Test Purpose	
Identif	ier:	TP_IN	IS_5108_	07		•	
Summ	ary:	Reque	st for a ir	nitial dial	og termin	nated at the served user (SUBSCRIBE)	
IUT Ro	ole:	IMS B			•		
Refere	ences:	TS 12	4 229 (V8	3.10.0),		Config Ref: CF_INT_AS	
			5.4.3.3 ¶ nbered lis		n		
			Entities			Condition	
	UE A	IMS A	IMS B	AS B	UE B		
	✓	✓				UE A registered in IMS A	
		✓			✓	UE B registered in IMS A	
			✓	✓		IMS B configured with filter criteria to contact AS B	
	UE A	IMS A	IMS B	AS B	UE B		
Step			Direction			Message	IF
1		₩	Ď			SUBSCRIBE addressed to UE B	
2						SUBSCRIBE ✓ a topmost Route header → the SIP URI of AS B ✓ a Route header → the S-CSCF SIP URI of IMS B ✓ a P-Charging-Vector header ✓ an orig-ioi parameter → operator identifier of IMS A × a term-ioi parameter	

					Test Purpose	
Identif	ier:	TP_IMS_5	109_01			
Summ	ary:				nse to initial terminating INVITE when there is no response lue SESSION_TERMINATED	from AS
IUT Ro	ole:	IMS B				
Refere	ences:	TS 124 229 clause 5.4. 2 nd number	3.3 ¶76 (aft		Config Ref: CF_INT_CALL CF_ROAM_CALL	
		Ent	ities		Condition	
	UE A	IMS A	IMS B	UE B		
	✓	✓			UE A registered in IMS A	
				×	UE B not registered	
			✓	✓	IMS B configured with a terminating unregistered filter criterion for UE B indicating SESSION TERMINATED on INVITE	
	UE A	IMS A	IMS B	UE B		
Step		Dire	ction		Message	IF
1		₩	ΣŶ		initial INVITE addressed to UE B	
2a		Ŷ _E	À		408 response	
2b		Ŷ.	Ą		5xx response	

						Test Purpose	
Identif	ier:	TP_IM	IS_5110_	01			
Summ	ary:	Forwa	rd 200 fro	om AS on	final res	ponse to an initial request for a dialog or a standalone reques	st
IUT Ro	ole:	IMS A				·	
Refere						Config Ref: CF_INT_AS CF_ROAM_AS	
			Entities			Condition	
	UE A	AS A	IMS A	IMS B	UE B		
	\checkmark		✓			UE A registered in IMS A	
				✓	✓	UE B registered in IMS B	
		✓	✓			IMS A configured with filter criteria to contact AS A	
	✓				✓	UE B has received 180 on initial request for dialog from UE A	
	UE A	AS A	IMS A	IMS B	UE B		
Step			Direction			Message	IF
1		₿	Ð			200 response addressed to UE B	
2			\$	Ð		200 response	

					Test Purpose		
Identif	ier:	TP_IMS_5	114_01		•		
Summ	ary:	S-CSCF sh	nould turn d	lown initial	dialog request when terminated at	the not registered served u	ıser
IUT Ro	le:	IMS B				-	
Refere	nces:	TS 124 229	9 (V8.10.0)	,	Config Ref:	CF_INT_CALL	
		clause 5.4.	3.3 ¶85 (ite	m 3 in		CF_ROAM_CALL	
		3 rd number	ed list)				
		Enti	ties		Condition		
	UE A	IMS A	IMS B	UE B			
	✓		✓		UE A registered in IMS B		
				×	UE B not registered		
			×		IMS B not configured with filter cri	teria to contact any AS	
	UE A	IMS A	IMS B	UE B			
Step		Direc	ction		Message	•	IF
1		₿	Ð		initial INVITE addressed to UE B		
2		Ŷ:	À		4xx response		

					Test Purpose		
Identif	ier:	TP_IMS_5	114_02		•		
Summ	ary:	S-CSCF sh	nould turn d	own standa	lone request when terminated at t	he not registered served us	ser
IUT Ro	ole:	IMS B			•	-	
Refere	nces:	TS 124 229			Config Ref:	CF_INT_CALL	
		clause 5.4. 3 rd number	3.3 ¶85 (ite ed list)	m 3 in		CF_ROAM_CALL	
		Ent	ities		Conditio	n	
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
				×	UE B not registered		
			×		IMS B not configured with filter c	riteria to contact any AS	
	UE A	IMS A	IMS B	UE B		-	
Step			ction		Messag	e	IF
1		₩	ΣŶ		MESSAGE addressed to UE B		
2		Ŷ	À		4xx response		

						Test Purpose	
Identif	ier:	TP_IM	IS_5115_	07		•	
Summ	ary:		CF include		paramet	ter and restores orig-ioi in 1xx responses from AS to initial re	quests
IUT Ro	ole:	IMS B	_				
Refere						Config Ref: CF_ROAM_AS CF_INT_AS	
			Entities			Condition	
	UE A	IMS A	IMS B	AS B	UE B		
	✓	✓				UE A registered in IMS A	
			✓	✓		IMS B configured with filter criteria to contact AS B	
	✓			✓		AS B has received an initial request for a dialog from UE A	
	UE A	IMS A	IMS B	AS B	UE B		
Step			Direction			Message	IF
1			Ý:	Ġ.		1xx response addressed to UE A	
2		€द	ŶĦ			1xx response ✓ a P-Charging-Vector header ✓ an orig-ioi parameter → operator identifier of IMS A ✓ a term-ioi parameter → operator identifier of IMS B	

						Test Purpose		
Identif	ier:	TP_IN	IS_5115_	_08		•		
Summ	ary:		CF includation		i parame	eter and restores orig-ioi in 2xx	responses from AS to initial re	quests
Clause	e:		-					
						Config Ref:	CF_ROAM_AS CF_INT_AS	
IUT R d	UT Role: IMS B					Test Case:	TC_IMS_5115_08	
			Entities			Cond	lition	
	UE A	IMS A	IMS B	AS B	UE B			
	✓	✓				UE A registered in IMS A		
	✓			✓		AS B has received an initial re	quest for a dialog from UE A	
	UE A	IMS A	IMS B	AS B	UE B			
Step]	Direction	•		Mess	sage	IF
1			Ŷ±.	À		2xx response addressed to U	JE A	
2		Œ	Ą			2xx response ✓ a P-Charging-Vector head ✓ an orig-ioi parameter → operator identifier of I ✓ a term-ioi parameter → operator identifier of I	MS A	

						Test Purpose		
Identif	ier:	TP_IM	IS_5118_	02		•		
Summ	ary:	S-CSC	CF include	e term-ioi	paramet	er and restores orig-ioi in 200 resp	onses from AS to standalo	ne
		reques	sts		•	-		
IUT Ro	ole:	IMS B						
Refere	References: TS 124 229 (V8.10.0),					Config Ref:	CF_ROAM_AS	
	clause 5.4.3.3 ¶106 (item 2 in 6 th numbered list)						CF_INT_AS	
			Entities			Condition	1	
	UE A	IMS A	IMS B	AS B	UE B			
	✓	✓				UE A registered in IMS A		
			✓	✓		IMS B configured with filter criteria	to contact AS B	
	✓			\checkmark		AS B has received a standalone re	equest from UE A	
	UE A	IMS A	IMS B	AS B	UE B			
Step			Direction			Message		IF
1			Ŷ Ŀ	Å.		200 response addressed to UE A		
2		Ĉ:	Ą			200 response ✓ a P-Charging-Vector header ✓ an orig-ioi parameter → operator identifier of IMS ✓ a term-ioi parameter → operator identifier of IMS		

						Test Purpose	
Identif	ier:	TP_IM	IS_5302_	01		•	
Summ	ary:		-CSCF sh			cess-network-charging-info parameter in the P-Charging-Vecto	or
IUT Ro	le:	IMS B		•			
Refere						Config Ref: CF_ROAM_AS CF_INT_AS	
			Entities			Condition	
	UE A	IMS A	IMS B	AS B	UE B		
	✓	✓				UE A registered in IMS A	
			✓		✓	UE B registered in IMS B	
	✓		√			UE B has received a subsequent request in a dialog from UE A	
			✓	✓		IMS B configured with filter criteria to contact AS B	
			✓	✓		AS B within the trust domain of IMS B	
	UE A	IMS A	IMS B	AS B	UE B		
Step			Direction			Message	IF
1		₿	Ď			2xx response addressed to UE A	
2			₽	र्च		2xx response ✓ a P-Charging-Vector header ✓ an access-network-charging-info parameter	

						Test Purpose				
Identif	ier:	TP_IN	IS_5302_	02		-				
Summ	ary:					exx response and not AS in same trust domain then it shall remove o parameter in the P-Charging-Vector header				
IUT Ro	ole:	IMS B			0 0					
Refere						Config Ref: CF_ROAM_AS CF_INT_AS				
		·	Entities	·		Condition				
	UE A	IMS A	IMS B	AS B	UE B					
	✓	✓				UE A registered in IMS A				
		✓ ✓				UE B registered in IMS B				
	✓	1				UE B has received a subsequent request in a dialog from UE A				
			✓	✓		IMS B configured with filter criteria to contact AS B				
				x		AS B not within the trust domain				
	UE A	IMS A	IMS B	AS B	UE B					
Step			Direction			Message	IF			
1		\$	Ð			2xx response addressed to UE A				
2			₩	Đ		 2xx response ✓ a P-Charging-Vector header × an access-network-charging-info parameter 				

			Test Pu	rpose (TO BE REVISITED)	
Identif	ier:	TP_IMS_5206_01			
Summ	ary:	REGISTER reque	st if there is a	t least on AS that matches Filter Criteria	
IUT Ro	ole:	IMS B			
Refere	nces:	TS 124 229 (V8.10		Config Ref: CF_ROAM_AS	
		clause 5.4.1.2.2F	¶15 (before		
		note 3)			
		Entities		Condition	
	IMS B	AS B	UE B		
		✓	✓	UE B configured with filter criteria to contact AS B	
	✓		✓	IMS B has challenged with a 401 response the REGISTER	
				request of UE B	
	IMS B	AS B	UE B		
Step		Direction		Message	IF
Step		Direction		protected REGISTER	IF
Step		Direction		protected REGISTER ✓ an Authorization header	IF
Step		Direction		protected REGISTER ✓ an Authorization header ✓ an integrity-protected parameter set on	IF
Step 1	Ŷ Ŀ	Direction	Ą	protected REGISTER ✓ an Authorization header ✓ an integrity-protected parameter set on (yes or	IF
	Ŷ£.	Direction	¢h	protected REGISTER ✓ an Authorization header ✓ an integrity-protected parameter set on (yes or tls-pending or	IF
	्रेंच	Direction	Ф	protected REGISTER ✓ an Authorization header ✓ an integrity-protected parameter set on (yes or tls-pending or tls-yes or	IF
	Ĉŧ.	Direction	ф	protected REGISTER ✓ an Authorization header ✓ an integrity-protected parameter set on (yes or tls-pending or tls-yes or ip-assoc-pending or	IF
1	_		ъ	protected REGISTER ✓ an Authorization header ✓ an integrity-protected parameter set on (yes or tls-pending or tls-yes or ip-assoc-pending or ip-assoc-yes)	IF
	₩	Direction	\$P	protected REGISTER ✓ an Authorization header ✓ an integrity-protected parameter set on (yes or tls-pending or tls-yes or ip-assoc-pending or ip-assoc-yes) third party REGISTER	IF
1	_		Ŷħ	protected REGISTER ✓ an Authorization header ✓ an integrity-protected parameter set on (yes or tls-pending or tls-yes or ip-assoc-pending or ip-assoc-yes) third party REGISTER ✓ a P-Access-Network-Info header	IF
1	_		Ŷħ	protected REGISTER ✓ an Authorization header ✓ an integrity-protected parameter set on (yes or tls-pending or tls-yes or ip-assoc-pending or ip-assoc-yes) third party REGISTER	IF

						Test Purpose			
Identif	fier:	TP_IM	S_5308_	_01		•			
Summ	nary:	Retain	the acce	ess-netwo	rk-chargi	ng-info parameter from the P-Charging-Vector header in 180 to AS			
IUT Ro	ole:	IMS A			_				
Refere	ences:		4 229 (V8 5.4.4.2.2			Config Ref: CF_INT_AS CF_ROAM_AS			
			Entities			Condition			
	UE A	AS A	IMS A	IMS B	UE B				
	✓		✓			UE A registered in IMS A			
				✓	✓	UE B registered in IMS B			
		✓	✓			IMS A configured with filter criteria to contact AS A			
		✓			✓	AS A has received an initial request for a dialog from UE B			
	UE A	AS A	IMS A	IMS B	UE B				
Step			Direction	n		Message	IF		
1	\$		Đ			180 response ✓ a P-Charging-Vector header ✓ an access-network-charging-info parameter			
2		Ŷ a	Ą			180 response ✓ a P-Charging-Vector header ✓ an access-network-charging-info parameter			

	Test Purpose											
Identif	fier:	TP_IN	IS_5308_	02		•						
Summ	nary:	Retain	the acce	ess-netwo	rk-chargi	ng-info parameter from the P-Charging-Vector header in 200	0 to AS					
IUT Ro	ole:	IMS A										
Refere	ences:		4 229 (V8 5.4.4.2.2			Config Ref: CF_INT_AS CF_ROAM_AS						
			Entities			Condition						
	UE A	AS A	IMS A	IMS B	UE B							
	✓		✓			UE A registered in IMS A						
				✓	✓	UE B registered in IMS B						
		✓	✓			IMS A configured with filter criteria to contact AS A						
		✓			✓	AS A has received 180 on initial request for dialog from UE B						
	UE A	AS A	IMS A	IMS B	UE B							
Step			Direction	n		Message	IF					
1	₩		Ð			200 response ✓ a P-Charging-Vector header ✓ an access-network-charging-info parameter						
2		Œ	ŶĬ			200 response ✓ a P-Charging-Vector header ✓ an access-network-charging-info parameter						

						Test Purpose				
Identifier: TP_IMS_5310_01										
Summ	ary:	Retain	ing the a	ccess-ne	twork-cha	rging-info parameter from the P-C	harging-Vector			
IUT Ro	ole:	IMS B								
Refere	ences:	TS 12	4 229 (V8	3.10.0),		Config Ref:	CF_ROAM_AS			
	clause 5.4.6.1.2 ¶1					_				
			Entities			Conditio	n			
	UE A	IMS A	IMS B	AS B	UE B					
	✓	✓				UE A registered in IMS A				
			✓		✓	UE B registered in IMS B				
	✓				✓	UE B has initiated a dialog with UE A				
			✓	✓		IMS B configured with filter criter	ia to contact AS B			
				✓		AS B is within the trust domain o	f IMS B			
	UE A	IMS A	IMS B	AS B	UE B					
Step			Direction	1		Messag	e	크		
						subsequent INVITE				
1		₩,	÷			✓ a P-Charging-Vector header				
•		>	D/			✓ an access-network-chargir	ng-info			
						parameter				
						INVITE				
2			м,	_		✓ a P-Charging-Vector header				
2			₩	Ð		✓ an access-network-chargir				
						parameter				

						Test Purpose				
Identifier: TP_IMS_5310_02										
Summ	ary:	Not re	taining th	e access	-network-	charging-info parameter from the	P-Charging-Vector			
IUT Ro	ole:	IMS B								
References: TS 124 229 (V8.10.0),				3.10.0),		Config Ref:	CF_ROAM_AS			
clause 5.4.6.1.2 ¶1										
			Entities			Conditio	n			
	UEA IMSA IMSB ASB UEB									
	✓	✓				UE A registered in IMS A				
			✓	✓ UE B registered in IMS B						
	✓				✓	AS B has initiated a dialog with L				
			✓	✓		IMS B configured with filter criter	ia to contact AS B			
		x				AS B is not within the trust doma	in of IMS B			
	UE A	IMS A	IMS B	AS B	UE B					
Step			Direction	า		Messag	e	IF		
						subsequent INVITE				
1		₩,	πŷ			✓ P-Charging-Vector header				
•		>	D⁄			✓ an access-network-chargir	ng-info			
				parameter						
				INVITE						
2			м,	_		✓ a P-Charging-Vector header				
2			₽	Ð			x√ an access-network-charging-info			
						parameter	-			

						Test Purpose			
Identif	ier:	TP_IM	IS_5310_	03		<u>-</u>			
Summ	ary:	Retain	ing in UF	DATE th	e acces	s-network-charging-info parameter f	rom the P-Charging-Vecto	r	
IUT Ro	ole:	IMS B				<u> </u>			
Refere	References: TS 124 229 (V8.10.0), clause 5.4.6.1.2 ¶1				Config Ref:	CF_ROAM_AS			
			Entities			Condition			
	UE A IMS A IMS B AS B UE E								
	✓	✓				UE A registered in IMS A			
			✓		✓	UE B registered in IMS B			
	✓				✓	JE B has initiated a dialog with UE A			
			✓	✓		IMS B configured with filter criteria to contact AS B			
				✓		AS B is within the trust domain of I	MS B		
	UE A	IMS A	IMS B	AS B	UE B				
Step			Direction			Message		IF	
						subsequent UPDATE			
1		€>	₹Ŷ			√ a P-Charging-Vector header			
		⇒	₽⁄			✓ an access-network-charging	-info		
						parameter			
						UPDATE			
			М.	_		✓ a P-Charging-Vector header			
2			₽	侴		✓ an access-network-charging	-info		
						parameter			

					Test Purpose			
ier:	TP_IM	IS_5310_	04		•			
ary:	Not re	taining in	UPDATE	the acc	cess-network-charging-info paramet	er from the P-Charging-Ve	ector	
le:								
		Config Ref:	CF_ROAM_AS					
			۱ ۱ ۲		Condition	Condition		
			AC D	IIE D	Condition			
	IIVIS A	IIVIOD	ASB	UEB	LIE A registered in IMS A			
V	V	./		./				
		V		V /		· ^		
v				٧				
					AS B is not within the trust domain	of IMS B		
UE A			AS B	UE B				
		Direction					IF	
					subsequent UPDATE			
	M.	Δ.			✓ P-Charging-Vector header			
	♦	D D ∕			✓ an access-network-charging	-info		
					parameter			
					UPDATE			
		м			✓ a P-Charging-Vector header			
		4	±ŷ`			-info		
	ary: le:	ary: Not re le: IMS B nces: TS 12 clause UE A IMS A	ary: Not retaining in le: IMS B nces: TS 124 229 (V8 clause 5.4.6.1.2 Entities UE A IMS A IMS B V UE A IMS A IMS B Direction	Ary: Not retaining in UPDATE Ie: IMS B TS 124 229 (V8.10.0), clause 5.4.6.1.2 ¶1 Entities UE A IMS A IMS B AS B V V UE A IMS A IMS B AS B Direction	Ary: Not retaining in UPDATE the accile: IMS B INCES: TS 124 229 (V8.10.0), clause 5.4.6.1.2 ¶1 Entities UE A IMS A IMS B AS B UE B V V V V V UE A IMS A IMS B AS B UE B Direction	er: TP_IMS_5310_04 ary: Not retaining in UPDATE the access-network-charging-info paramet le: IMS B nces: TS 124 229 (V8.10.0), clause 5.4.6.1.2 ¶1 Entities	er: TP_IMS_5310_04 ary: Not retaining in UPDATE the access-network-charging-info parameter from the P-Charging-Volle: IMS B nces: TS 124 229 (V8.10.0), clause 5.4.6.1.2 ¶1 Entities Condition UE A IMS A IMS B AS B UE B V V UE B registered in IMS A UE B has initiated a dialog with UE A IMS B configured with filter criteria to contact AS B AS B is not within the trust domain of IMS B UE A IMS A IMS B AS B UE B Direction Wessage Subsequent UPDATE V P-Charging-Vector header V an access-network-charging-info parameter UPDATE V a P-Charging-Vector header * an access-network-charging-info	

						Test Purpose			
Identif	ier:	TP IM	IS_5312_	01					
Summ	arv:				twork-ch	narging-info parameter from the P-Charging-Vector on 200 (Ol	K)		
	,	respor	•				,		
IUT Ro	ole:	IMS B							
Refere	nces:	TS 124	4 229 (V8	3.10.0),		Config Ref: CF_ROAM_AS			
clause 5.4.6.1.3 ¶1						CF_INT_AS			
			Entities			Condition			
	UE A	IMS A	IMS B	AS B	UE B				
	✓	✓				UE A registered in IMS A			
			✓		✓	JE B registered in IMS B			
	✓				✓	UE B has initiated a dialog with UE A			
			✓	✓		IMS B configured with filter criteria to contact AS B			
	✓				✓	UE B having sent subsequent INVITE or UPDATE to UE A			
	UE A	IMS A	IMS B	AS B	UE B				
Step			Direction		<u>* </u>	Message	IF		
						200 response addressed to UE B			
1		₩,	Ð			√ a P-Charging-Vector header			
1		4>	_∃			✓ an access-network-charging-info			
						parameter			
						200 response			
2			₽	Ð		✓ a P-Charging-Vector header			
						✓ an access-network-charging-info parameter			

						Test Purpose			
Identif	ier:	TP_IN	IS_5313_	_01		•			
Summ	ary:	Retain reques		ccess-ne	twork-ch	narging-info parameter from the P-Charging-Vector on any SI	Р		
IUT Ro	ole:	IMS B							
Refere	ences:		4 229 (V8 5.4.6.1.3			Config Ref: CF_INT_AS CF_ROAM_AS			
		*	Entities			Condition			
	UEA ASA IMSA IMSB UE								
	✓		✓			JE A registered in IMS B			
				✓	✓	UE B registered in IMS B			
		✓	✓			IMS A configured with filter criteria to contact AS A			
	✓				✓	AS A has initiated a dialog with UE B			
		✓				AS A is within the trust domain of IMS A			
	UE A	AS A	IMSA	IMS B	UE B				
Step			Direction			Message	IF		
1			र्देद	À		a response ✓ a P-Charging-Vector header ✓ an access-network-charging-info parameter			
2	2 & 🕸			The response ✓ a P-Charging-Vector header ✓ an access-network-charging-info parameter					

						Test Purpose				
Identifier: TP_IMS_5313_02 Summary: Not retaining the access-network-charging-info parameter from the P-Charging-Vector on any SIP										
Summ	ary:	Not re	•	e access	-network	c-charging-info parameter from the	P-Charging-Vector on any	SIP		
Clause) :									
Refere	ences:		4 229 (V8 5.4.6.1.3			Config Ref:	CF_INT_AS			
IUT Ro	JT Role: IMS A					Test Case:	TC_IMS_5313_02			
			Entities			Condition	า			
	UE A									
	✓		✓			UE A registered in IMS A				
				✓	✓	UE B registered in IMS B				
		✓ ✓ ✓				IMS A configured with filter criteria	to contact AS A			
		✓			✓	AS A has initiated a dialog with UE	В			
		x				AS A is not within the trust domain of IMS A				
	UE A	AS A	IMS A	IMS B	UE B					
Step			Direction			Message		IF		
1			Ŷ Ŀ	Ą		a response ✓ a P-Charging-Vector header ✓ an access-network-charging-info parameter				
2	2 ६ ४					the response ✓ a P-Charging-Vector header * access-network-charging-in-	fo parameter			

						Test Purpose			
Identif	ier:	TP_IM	IS_5320_	01					
Summ	Summary: S-CSCF is failing to receive a S response from the AS					P response or receive 408 (Request Timeout) response or a	5xx		
IUT Ro	UT Role: IMS B								
Refere	ences:	TS 124 229 (V8.10.0), clause 5.4.3.2 ¶91 (after note 15)				Config Ref: CF_ROAM_AS CF_INT_AS			
			Entities			Condition			
	UE A	IMS A							
	✓	✓				UE A registered in IMS A			
			✓		✓	UE B registered in IMS B			
				✓	✓	AS B has received an initial request for a dialog from UE B			
			✓	✓		AS B filter criteria default handling in IMS B set to SESSION TERMINATED			
	UE A	IMS A	IMS B	AS B	UE B				
Step		<u> </u>	Direction			Message	IF		
1			€∥	4		Any response			
2a			₩		Ð	408 response			
2b			₩		Ð	5xx response			

5.7 MGCF tests for IMS-PSTN interconnection

				Test Purpose					
Identifier: TP_IMS_MGCF_01									
Summary: MGCF shall send INVITE due to indication of an incoming call Clause: TS 124 229 [1], clause 5.5.3.1.1									
Clause	e:	TS 124 229 [1], cla	ause 5.5.3.1.1	-					
Refere	ences:	RQ_24.229_5.5.3.	1.1	Config Ref:	CF_PSTN				
IUT Ro	ole:	MGCF		Test Case:	TC_IMS_MGCF_01				
Entities				Cond	ition				
	IMS_A	IUT	PSTN						
	✓		✓	IMS A and PSTN with peer-to-	peer arrangement				
	IMS_A	IUT	PSTN						
Step		Direction		Mess	age	IF			
1		te dinitial IAM							
2	ंदेच	₩		INVITE ✓ a Request URI → Tel URI E.164 Number or (Sip URI E.164 Number wit ✓ a Contact header → anyvalue GRUU format ✓ a Supported header ✓ an 100rel value ✓ a P-Asserted-Identity head ✓ a P-Charging-Vector head → an icid-value parameter ✓ a SDP → codec supported curr pr	ler er				

					Test Purpose		
Identif	ier:	TP_I	IMS_MGCF_0	2			
Summ	ary:	MGC	CF shall send	100 response	due to indication of an incoming IN	VITE	
Clause: TS 124 229 [1], clause 5.5.3.1.2							
Refere	nces:	$RQ_{_}$	24.229_5.5.3.	1.2	Config Ref:	CF_PSTN	
IUT Ro	ole:	MGC	CF		Test Case:	TC_IMS_MGCF_02	
			Entities		Condition	n	
	IMS_A		IUT	PSTN			
	✓			✓	IMS A and PSTN with peer-to-pee	r arrangement	
	IMS_A		IUT	PSTN			
Step			Direction		Message		IF
1	1 🖔 🕏				initial INVITE		
2	Ŷ		¢ħ		100 response		

				Test Purpose		
Identif	ier:	TP_IMS_MGCF_0	03	•		
Summ	ary:	MGCF shall send	183 response	e codec found or not required		
Clause	e :	TS 124 229 [1], cl	ause 5.5.3.1.	2		
Refere	nces:	RQ_24.229_5.5.3	.1.2	Config Ref:	CF_PSTN	
IUT Ro	ole:	MGCF		Test Case:	TC_IMS_MGCF_03	
		Entities		Cor	ndition	
	IMS_A	IUT	PSTN			
	✓		✓	IMS A and PSTN with peer-t	o-peer arrangement	
	IMS_A	IUT	PSTN		-	
Step		Direction		Me	ssage	IF
1	\$	ΞŶ		initial INVITE		
2	Ŷ _E	⇔		100 response		
3	Ŷ£.	Ф		183 response ✓ Require header → 100rel value ✓ a P-Charging-Vector hea ✓ a term-ioi parameter → the operator identifie		

					Test Purpose				
Identif	ier:	TP_	IMS_MGCF_	05	-				
Summ	ummary: MGCF shall send UPDATE request								
Clause	TS 124 229 [1], clause 5.5.3.2.1								
Refere	References: RQ_24.229_5.5.3.2.1 Config Ref: CF_PSTN								
IUT Ro	le:	MG	CF		Test Case:	TC_IMS_MGCF_05			
			Entities		Co	ondition			
	IMS_A		IUT	PSTN					
	✓			✓	IMS A and PSTN with peer	-to-peer arrangement			
	IMS_A		IUT	PSTN		-			
Step			Direction		M	lessage	IF		
1 🖔 🕏		200 response for PRACK	conditions fulfilled						
2	Ŷ:		Ą		UPDATE				

				Test Purpose		
Identif	ier:	TP_IMS_MGCF_0	6			
Summ	ary:	MGCF shall send	180 response d	due to indication of an ACM/CPG		
Clause):	TS 129 163 [6], cla	use 7.2.3.1.4,	TS 124 229 [1], clause 5.5.3.2.2		
Refere	nces:	RQ_29.163_7.2.3.	1.4	Config Ref:	CF_PSTN	
IUT Ro	ole:	MGCF		Test Case:	TC_IMS_MGCF_06	
	Entities		Condition			
	IMS_A	IUT	PSTN			
	✓		✓	IMS A and PSTN with peer-to-peer arrangement		
	IMS_A	IUT	PSTN		-	
Step		Direction		Message		IF
1a		Ýt.	Ŷħ	ACM		
		4	<₽	→ subscriber free		
1b		Ýt.	Ą	CPG		
		4	<₽	→ ALERTING		
2	ŶĿ	ф		180 response		

	Test Purpose							
Identif	ier:	TP_IMS_MGCF_0)7					
Summ	ary:	MGCF shall send	200 response	due to indication of ANM				
Clause	e:	TS 129 163 [6], cl	ause 7.2.3.1.5,	TS 124 229 [1], clause 5.5.3.2.2				
References: RQ_29.163_7.2.3.1.5		Config Ref:	CF_PSTN					
IUT Role: MGCF			Test Case: TC_IMS_MGCF_07					
	Entities		Condition	on				
	IMS_A	IUT	PSTN					
	✓		✓	IMS A and PSTN with peer-to-pe	er arrangement			
	IMS_A	IUT	PSTN					
Step	Step Direction		Message		IF			
1	€ ₩		À	ANM				
2	2 & 🕏			200 response				

					Test Purpose		
Identif	ier:	TP_I	IMS_MGCF_0	08			
Summ	ary:	MGC	CF shall send	BYE response	e due to indication of release		
Clause	e:	TS 1	29 163 [6], cl	ause 7.2.3.1.8	3, TS 124 229 [1], clause 5.5.4.1		
References: RQ 29.163 7.2.3.1.8 Conf			.1.8	Config Ref:	CF_PSTN		
IUT Role: MGCF		Test Case:	TC_IMS_MGCF_08				
	Entities		Condit	ion			
	IMS_A		IUT	PSTN			
	✓			✓	IMS A and PSTN with peer-to-p	eer arrangement	
	IMS_A		IUT	PSTN		-	
Step			Direction		Messa	ige	IF
1			Ŷ <u>E</u>	⟨Ÿ	REL		
2	€ Å		BYE				

				Test Purpose	
Identif	ier:	TP_IMS_MGCF_0	9		
Summ	ary:	MGCF shall send	486 response	due to indication of release with ca	use indicator 17
Clause: TS 129 163 [6], clause 7.2.3.1.8			ause 7.2.3.1.8		
References: RQ_29.16		RQ_29.163_7.2.3.	1.8	Config Ref:	CF_PSTN
IUT Role: MGCF		MGCF		Test Case:	TC_IMS_MGCF_09
	Entities		Conditio	n	
	IMS_A	IUT	PSTN		
	✓		✓	IMS A and PSTN with peer-to-pee	er arrangement
	IMS_A	IUT	PSTN		
Step		Direction		Message	e IF
1		Ŷ t a	Å.	REL	
		- A	V	→ cause17	
2 & 🕏			486 response		

				Test Purpose		
Identif	ier:	TP_IMS_MGCF_1	0	•		
Summ	ary:	MGCF shall send	REL with caus	e #17 or #34 with Diagnostic due	to 486 Busy here	
Clause) :	TS 129 163 [6], cla	ause 7.2.3.2.12	2	•	
Refere	nces:	RQ_29.163_7.2.3.	2.12	Config Ref:	CF_PSTN	
IUT Ro	IUT Role: MGCF		Test Case:	TC_IMS_MGCF_10		
	Entities		Condition	on		
	IMS_A	IUT	PSTN			
	✓		✓	IMS A and PSTN with peer-to-peer arrangement		
	IMS_A	IUT	PSTN			
Step		Direction		Messag	je	IF
1	Þ	Ð		486 response		
2		\$	Ð	REL → cause17 or cause34		

				Test Purpose		
Identif	ier:	TP_IMS_MGCF_1	11	•		
Summ	•	MGCF shall send from IMS	CPG with a 're	mote hold' Generic notification indi	cator on receipt of HOLD r	equest
Clause		TS 129 163 [6], cla				
Refere	nces:	RQ_29.163_7.4.1	0.1	Config Ref:	CF_PSTN	
IUT Ro	ole:	MGCF		Test Case:	TC_IMS_MGCF_11	
	Entities		Conditio	n		
	IMS_A IUT PSTN		PSTN			
	✓		✓	IMS A and PSTN with peer-to-peer arrangement		
	✓		✓	IMS A and PSTN call active		
	IMS_A	IUT	PSTN			
Step		Direction		Message	9	IF
1	₽\$	±Ŷ		UPDATE or a target refresh INVITE ✓ a SDP → sendonly		
2	\$		CPG → remote hold			

				Test Purpose			
Identif	ier:	TP_IMS_MGCF_1	2	•			
Summ	ary:	MGCF shall send request from IMS	CPG with a 'r	emote retrieve' Generic notific	cation indicator on receipt of Re	esume	
Clause	e:	TS 129 163 [6], cla	ause 7.4.10.1	10.1			
Refere	nces:	RQ_29.163_7.4.10	0.1	Config Ref: CF_PSTN			
IUT Ro	IUT Role: MGCF		Test Case:	TC_IMS_MGCF_12			
	Entities			Со	ndition		
	IMS_A	IUT	PSTN				
	✓		✓	IMS A and PSTN with peer-to-peer arrangement			
	✓		✓	IMS A and PSTN call on hold			
	IMS_A	IUT	PSTN				
Step		Direction		Mo	essage	IF	
1	\$	±Ŷ		 UPDATE or a target refresh INVITE ✓ a SDP → sendrecv 			
2		\$	Ð	CPG → remote retrieve			

				Test Purpose		
Identif	ier:	TP_IMS_MGCF_1	3			
Summ	•	MGCF shall send from IMS	CPG with a 're	mote hold' Generic notification in	ndicator on receipt of HOLD	request
Clause	e:	TS 129 163 [6], cla	ause 7.4.10.2			
Refere	ences:	RQ_29.163_7.4.10	Q_29.163_7.4.10.2 Config Ref : CF_PSTN			
IUT Role: MGCF Test Case: TC_I		TC_IMS_MGCF_13				
	Entities			Condition		
	IMS_A	IUT	PSTN			
	✓		✓	IMS A and PSTN with peer-to-peer arrangement		
	✓		✓	IMS A and PSTN call active	-	
	IMS_A	IUT	PSTN			
Step		Direction		Messa	age	IF
1		Ŷ <u>E</u>	Ą	CPG → remote hold		
2	Æ Ø		UPDATE or a target refresh IN ✓ a SDP → sendonly	VITE		

				Test Purpose		
Identif	ier:	TP_IMS_MGCF_1	4	•		
Summ	•	MGCF shall send request from IMS	CPG with a 're	mote retrieve' Generic notification	indicator on receipt of Resi	ume
Clause	e:	TS 129 163 [6], cla	use 7.4.10.2			
Refere	ences:	RQ_29.163_7.4.10).2	Config Ref:	CF_PSTN	
IUT Ro	TRole: MGCF Test Case: TC_IMS_MG		TC_IMS_MGCF_14			
	Entities			Condition		
	IMS_A	IUT	PSTN			
	✓		✓	IMS A and PSTN with peer-to-peer arrangement		
	✓		✓	IMS A and PSTN call on hold		
	IMS_A	IUT	PSTN			
Step		Direction		Messag	je	IF
1		रिंद	Ą	CPG → remote retrieve		
2	2 € ₽		UPDATE or a target refresh INVI✓ a SDP→ sendonly	TE		

				Test Purpose		
Identif	ier:	TP_IMS_MGCF_1	5	•		
Summ	ary:	MGCF shall send.	ACM/CPG due	to indication of a 180 respo	nse	
Clause	e:	TS 129 163 [6], cla				
Refere	ences:	RQ_29.163_7.2.3.	2.4_and_6	Config Ref:	CF_PSTN	
IUT Role: MGCF		Test Case:	TC_IMS_MGCF_15			
	Entities Condition				ondition	
	IMS_A	IUT	PSTN			
	✓		✓	IMS A and PSTN with peer-to-peer arrangement		
	IMS_A	IUT	PSTN			
Step		Direction		M	Message	
1	₽	Đ		180 response		
2		₩	र्ज	ACM → subscriber free or sends a CPG → ALERTING		

					Test Purpose		
Identif	ier:	TP_IM	S_MGCF_1	6	•		
Summ	ary:	MGCF	shall send	ANM due to ir	dication of a 200 response		
Clause):	TS 129	9 163 [6], cla	ause 7.2.3.2.8			
Refere	nces:	RQ_29	9.163_7.2.3.	2.8	Config Ref:	CF_PSTN	
IUT Role: MGCF		Test Case:	TC_IMS_MGCF_16				
	Entities			Condition			
	IMS_A		IUT	PSTN			
	✓			✓	IMS A and PSTN with peer-to-pe	er arrangement	
	IMS_A		IUT	PSTN		-	
Step Direction		Message		IF			
1	Þ		Ď		200 response		
2			₩,	Ď	ANM		

					Test Purpose		
Identif	ier:	TP_II	MS_MGCF_1	7			
Summ	ary:	MGC	F shall send I	REL due to ind	ication of a BYE		
Clause):	TS 12	29 163 [6], cla	use 7.2.3.2.13	3		
Refere	nces:	RQ_2	29.163_7.2.3.	2.13	Config Ref: CF_PSTN		
IUT Role: MGCF		Test Case:	TC_IMS_MGCF_17				
			Entities		Condition		
	IMS_A	ı	IUT	PSTN			
	✓			✓	IMS A and PSTN with peer-to-pee	er arrangement	
	IMS_A		IUT	PSTN		-	
Step	Step Direction			Message	e IF		
1 🔖			Ď		BYE		
2			₩	Ð	REL		

Annex A (normative): Zip file with TPLan code

The test purposes defined in the present document have been automatically generated from the TPLan text files in the archive file $ts_186011v030101p0.zip$ which accompanies the present document. The raw text files has been converted to a symbolic table format to allow better readability.

Annex B (normative): IMS NNI Interoperability Test Configurations

IMS NNI interoperability test configuration identifiers have been composed using on the following abbreviations

• REG: Only one UE

• CALL: One or two UEs

AS: One or two UEs plus Application Server for one UE

• ROAM: UE B is roaming in home network of UE A

• INT: UE A and B are in interoperating home networks

PSTN: One user is located in the PSTN

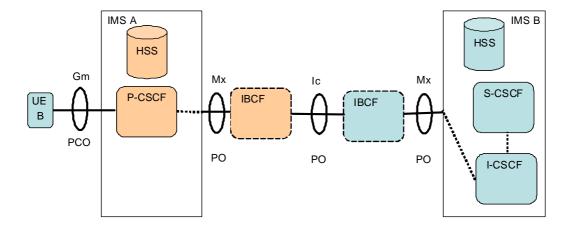
• IPTV: Only one UE, AS for IPTV present

• CONF: Two UEs, AS for Conference present

Note that all test configurations assume that observable interfaces are indicated as a solid line, non-observable interfaces as indicated dashed lines, and that IBCF acts in a "pass-through" mode if topology hiding is not required.

Roaming Registration

CF_ROAM_REG



Precondition:

Different network operators performing origination and termination, UE_B roaming in visited network A (ROAM), UE_B not yet registered (REG), neither UE_A nor AS involved, IBCF is involved but no topology hiding performed

Test configuration for:

Registration requests and responses from UE_B

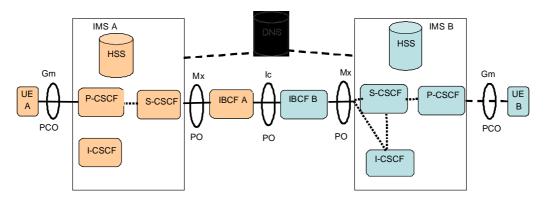
Example:

REGISTER prior to IMS VoIP voice call from UE_B

Figure B.1: CF_ROAM_REG

Interworking Call

CF_INT_CALL



Precondition:

Different network operators performing origination and termination, both UEs or only UE A in home networks (INT), both UE's registered, no AS, a common interconnect DNS and local DNSs for each IMS may be involved, IBCF is involved, topology hiding may apply

Test configuration for:

Requests and responses between UE_A and UE_B in call (CALL) and messaging scenarios Unsuccessful initial requests and responses from UE_A (when UE_B is not registered)

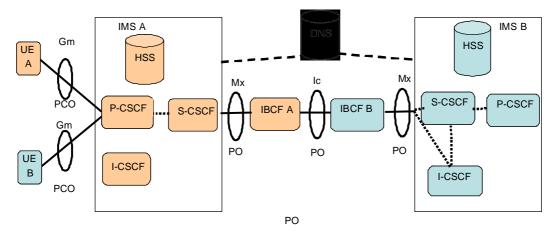
Example:

Initial INVITE in IMS VoIP voice call from UE_A to UE_B

Figure B.2: CF_INT_CALL

Roaming Call

CF_ROAM_CALL



Precondition:

Different network operators performing origination and termination, UE_B roaming (ROAM) via IMS_A, UE_A in home network, both UEs are registered, no AS, IBCF is involved, topology hiding may apply

Test configuration for:

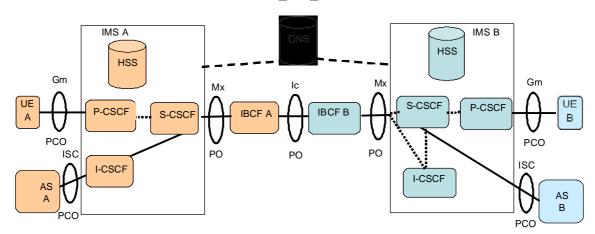
Requests and responses between UEB and UE_A in call (CALL) and messaging scenarios Example:

Initial INVITE in IMS VoIP voice call from UE_B to UE_A

Figure B.3: CF_ROAM_CALL

Interworking Application Server

CF_INT_AS



Precondition:

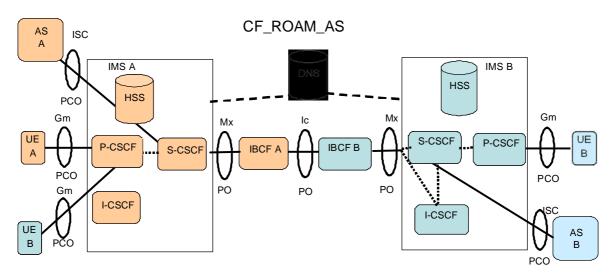
Different network operators performing origination and termination, UE_A and UE_B in home networks (INT), both UEs registered, AS for UE_A and UE_B (AS), IBCF is involved, topology hiding may apply Test configuration for:

Requests and responses between ASes and UEs

Example:

Initial INVITE in IMS VoIP voice call unconditionally forwarded to UE_B by AS_A (CFU). AS_A acts as routing AS

Figure B.4: CF_INT_AS



Precondition:

Different network operators performing origination and termination, UE_B roaming (ROAM) via IMS_A, UE_A in home network, both UEs or registered, AS for UE_A and UE B may be involved (AS), IBCF is involved, topology hiding may apply

Test configuration for:

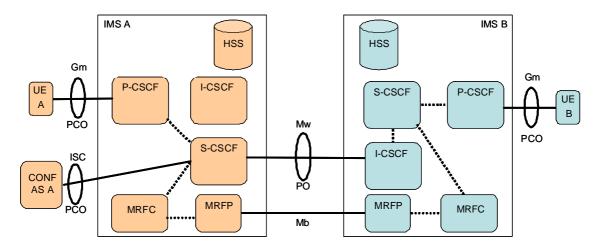
Requests and responses between AS_B and UEs

Unsuccessful initial requests and responses from UE_A (when UE_B and AS_B are not available) Example:

Initial INVITE IMS VoIP voice call unconditionally forwarded to UE_B by AS_B (CFU). AS_B acts as routing AS

Figure B.5: CF ROAM AS

CF_INT_CONF_CALL



Precondition:

Different network operators performing origination and termination, both UEs or only UE A in home networks (INT), both UE's registered, CONF AS is involved in IMS A, IMS A and IMS B both include MRFC and MRFP

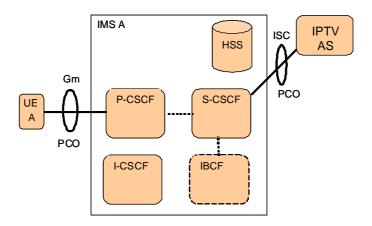
Test configuration for:

Requests and responses between UE_A and UE_B in an Ad-Hoc Conference Call (CONF_CALL) Example:

Initial INVITE in from UE_A to initiate an Ad-Hoc Conference call in IMS A, and subsequent invitation to UE_B to join (via REFER method from UE_A)

Figure B.6: CF_INT_CONF_CALL





Precondition:

UE A registered in home network, IPTV-AS is involved

Test configuration for:

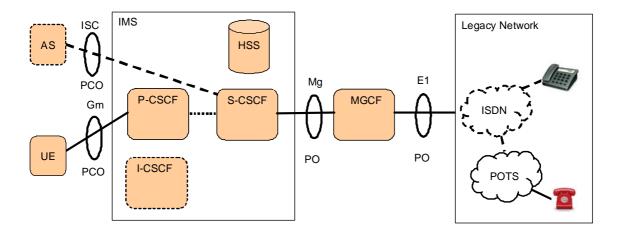
Requests and responses between UE_A and AS_A

Example:

Initial INVITE from UE_A to AS_A to initiate a IPTV Broadcast session.

Figure B.7: CF_IPTV

CF_PSTN



Precondition:
Single network with UE in home networks and registered, AS and I-CSCF may be involved Test configuration for:

Requests and responses between IUE and POTS or ISDN phone

Initial INVITE from UE to POTS phone

Figure B.8: CF_PSTN

History

Document history		
V1.0.0	April 2008	Publication
V1.1.1	March 2009	Publication
V2.1.1	February 2009	Publication
V2.2.1	March 2009	Publication
V2.3.1	April 2010	Publication
V3.1.1	June 2011	Publication