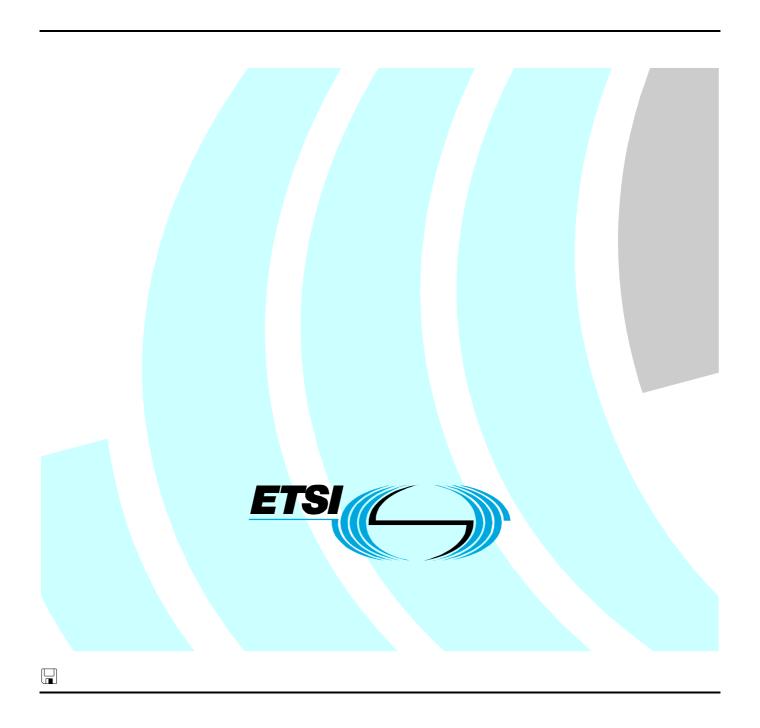
ETSITS 186 011-1 V2.3.1 (2010-04)

Technical Specification

Technical Committee for IMS Network Testing (INT); IMS NNI Interoperability Test Specifications; Part 1: Test purposes for IMS NNI Interoperability



Reference

RTS/INT-00020-1

Keywords

IMS, interworking, NNI, testing

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Foreword

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

The present document is part 1 of a multi-part deliverable covering the IMS NNI Interworking 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 7 specification that NGN Release 2 has been derived from.

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 Release 7 [1] from which ETSI NGN Release 2 has been derived.

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 a IMS core network as a whole - not its components - are considered to be under test.

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 a specific reference, subsequent revisions do not apply.
- Non-specific reference may be made only to a complete document or a part thereof and only in the following cases:
 - if it is accepted that it will be possible to use all future changes of the referenced document for the purposes of the referring document;
 - for informative references.

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 indispensable for the application of the present document. For dated references, only the edition cited applies. For non-specific references, the latest edition of the referenced document (including any amendments) applies.

- [1] ETSI TS 124 229: "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 7.14.0 Release 7)".
- [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: "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)".

2.2 Informative references

The following referenced documents are not essential to the use of the present document but they assist the user with regard to a particular subject area. For non-specific references, the latest version of the referenced document (including any amendments) applies.

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
I-CSCF Interogating CSCF
IMS IP Multimedia Subsystem

IBCF Interconnection Border Control Gateway

IOI Inter Operator Identifier IP Internet Protocol

IUT Implementation Under Test
NGN Next Generation Network
NNI Network-to-Network Interface

P-CSCF Proxy CSCF

RC Requirements Catalogue

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 TS 124 229 [1] which are relavant 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 [1] (V7.14.0), 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.

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

```
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 (ES 202 553 [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 section. TPs in the standardized textual TPLan syntax are collected in archive ts_18601101v020301p0.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 "\script" or "\times" marks to indicate all the entities affected by this condition. "\script" 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

Enti	ties	Condition
Α	В	
✓	✓	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 "\$\operatorname{O}" or "\$\operatorname{O}"), e.g. entity A sends the message, to a destination entity (identified by the direction symbols "\$\operatorname{O}" or "\$\operatorname{O}"), e.g. entity B receives the message. The use of the "||" symbol in combination with the direction symbols, e.g. "||\$\operatorname{O}", 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 "\scrtw" symbols whereas headers or parameter content that must *not* be present are listed using the "\scrtw" symbols. The "\scrtw" symbol indicates a valid message parameter value where as the "\scrtw||"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.

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	Direc	tion	Message	IF
1	₩,	£Ŷ	some request ✓ this header ✓ this one parameter → this value ✓ this other parameter → that value ✗ that parameter ✗ that header	Хх
2a	Ŷ Ŀ	Á	failure response	Xx
2b	€	II ♦	no message	Xx

5.2 General Capabilities

					Test Purpose			
Identif	dentifier: TP_IMS_4002_01							
Summ	Summary: IMS CN components shall support SIP messages > 1 300 bytes							
IUT Ro	ole:	IMS A			,			
References:		TS 124 229 (V7.14.0) [1], clause 4.2A ¶1		[1],	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			
	UE A	IMS A	IMS B	UE B				
Step		Direc	tion		Message	9	IF	
1	₽,	ΞŶ			MESSAGE addressed to UE B			
	,	✓ a Message Body greater than 1300 bytes			1300 bytes			
2		₩,	Ð		MESSAGE			
_		7			✓ the Message Body greater the	an 1300 bytes		

5.3 Registration Procedures

5.3.1 Registration at P-CSCF

CF_ROAM_REG	
1	
response the REGISTER	
	IF
to IMS B	
	esponse the REGISTER

				Test Purpose			
Identifier:		TP_IMS_5011_01					
Summary:		The P-CSCF shall	forward REG	SISTER requests received from the UE to the entry point in the	home		
		network					
IUT R	IT Role: IMS A						
Refere	ences:	TS 124 229 (V7.14	I.O) [1],	Config Ref: CF_ROAM_REG			
		clause 5.2.2 ¶2	- / [],				
		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	Ýt.		Ą	unprotected REGISTER			
•	· ·		V	√ 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 → no ✗ a Security-Verify header ✗ a P-Visited-Network-ID header → the visited network at the home network			

				Test Purpose	
Identifier: Summary:		TP_IMS_5011_02			
		The P-CSCF shall network	forward REC	GISTER requests received from the UE to the entry point in	the home
IUT R	ole:	IMS A			
Refere	ences:	TS 124 229 (V7.14 clause 5.2.2 ¶2	1.0) [1],	Config Ref: CF_ROAM_REG	
	1140 4	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	ݱ.		¢ħ	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 Security-Client header ✓ a P-Visited-Network-ID header → the visited network at the home network	

				Test Purpose		
Identif	ier:	TP_IMS_5203_0	1	<u>.</u>		
Summ	ary:			EGISTER request from the entry point with no respon-	UE and modified a number of hea	aders
IUT Ro	IUT Role: IMS A					
References:		TS 124 229 (V7.14.0) [1], clause 5.2.2 ¶26 (item 9 in 1 st numbered list)		Config Ref:	CF_ROAM_REG	
		Entities			Condition	
	IMS A	IMS B	UE B			
	✓		✓	UE B having sent an initia	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	€ ∀		no response			
2	\$	Ð		REGISTER addressed to	another entry point	

					Test Purpose		
Identif	ier:	TP_I	IMS_5203_02		•		
Summ	Summary: The P-CSCF have received a REG and forwarded the request to an en					d modified a number of hea	iders
IUT Ro	ole:	IMS	A				
References:		claus	TS 124 229 (V7.14.0) [1], clause 5.2.2 ¶26 (item 9 in 1 st numbered list)		Config Ref:	CF_ROAM_REG	
			Entities		Condition		
	IMS A		IMS B	UE B			
	✓			✓	UE B having sent an initial REG	ISTER to IMS A	
	✓		✓		IMS A configured with multiple e	entry points for IMS B	
	IMS A		IMS B	UE B			
Step	Step Direction		Messa	ge	IF		
1	€ ₽		3xx response				
2	₩		Ð		REGISTER addressed to anoth	er entry point	

					Test Purpose				
Identif	dentifier: TP_IMS_5203_03								
Summ	ary:				EGISTER request from the entry point with 480	UE and modified a number of hea	ders		
IUT Ro	ole:	IMS .	A	•	• •				
References:		TS 124 229 (V7.14.0) [1], clause 5.2.2 ¶26 (item 9 in 1 st numbered list)			Config Ref:	CF_ROAM_REG			
		<u>'</u>	Entities		C	ondition			
	IMS A		IMS B	UE B					
	✓			✓	UE B having sent an initia	al REGISTER to IMS A			
	✓		✓		IMS A configured with mu	IS A configured with multiple entry points for IMS B			
	IMS A IMS B UE B								
Step	Step Direction		l l	Message	IF				
1	€ ₽		480 response						
2	₩		Ď		REGISTER addressed to	another entry point			

				Test Purpose	
Identifier: TP_IMS_5044_01				-	
Summary:				REGISTER request from the UE and modified a numbe	r of headers
		and forwarded the	request to a	n entry point	
IUT Ro		IMS A			
Refere	ences:	TS 124 229 (V7.14	4.0) [1],	Config Ref: CF_ROAM_REG	;
		clause 5.2.3 ¶1			
		Entities		Condition	
	IMS A	IMS B	UE B		
	✓		✓	UE B having sent a protected REGISTER to IMS A	
	X			IMS A not configured for topology hiding	
	IMS A	IMS B	UE B		
Step		Direction		Message	IF
1	Ŷ±	Ŷμ		200 response	
2	�	∌ੰ		SUBSCRIBE ✓ a Request URI ✓ "the resource to which the P-CSCF wants to subscribe to" and ✓ a From header ✓ P-CSCF_SIP_URI of IMS_A and ✓ a To_header ✓ the default_public_user_identity of UE_B ✓ an Event_header ✓ the reg event package and ✓ an Expires_header → "a value greater than the one in the Expires_header of the 200_response" and ✓ a P-Asserted-Identity_header ✓ the P-CSCF_SIP_URI of IMS_A and ✓ a P-Charging-Vector header ✓ an icid parameter	

5.3.2 Registration at S-CSCF

				Test Purpose		
Identif	ier:	TP_IMS_5088_01				
Summary:		S-CSCF shall deregister unexpired registration upon receipt of a new REGISTER with new contact information				
IUT Ro	ole:	IMS B				
Refere		TS 124 229 (V7.1	4.0) [1].	Config Ref: CF_ROAM_REG		
		clause 5.4.1.2.1 ¶	1	J = 100 m = 100		
		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		
		×	×	UE B not de-registered in IMS B		
	IMS A	IMS B	UE B			
Step		Direction		Message	IF	
				initial REGISTER		
1		Ŷ .	¢ħ	✓ an Authorization header		
•				✓ an integrity-protected parameter		
				→ no		
2	िंद	Ϋ́		NOTIFY ✓ a Request URI → the P-CSCF SIP URI of IMS A ✓ an Event header → the reg event package ✓ 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	ary:		rn 401 (Unau	thorized) upon receipt of a REGIST	TER from an UE not previously
IUT Ro	UT Role: IMS B				
Refere		TS 124 229 (V7.14 clause 5.4.1.2.1 ¶9		Config Ref:	CF_ROAM_REG
	Entities		Conditi	on	
	IMS A IMS B UE 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		Messag	ge IF
1	₩,	Ð		initial REGISTER ✓ an Authorization header ✓ an integrity-protected para → no	ameter
2	ंदेच	Ŷħ		401 response ✓ an WWW-Authenticate head ✓ 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_5092_01		•	
Summ	ary:	200 OK on REGIS	STER from UE	to the S-CSCF	
IUT Ro		IMS B			
Refere	ences:	TS 124 229 (V7.1-	4.0) [1],	Config Ref: CF_ROAM_REG	
		clause 5.4.1.2.2 ¶			
		Entities		Condition	
	IMS A	IMS B	UE B		
		✓	✓	user of UE B existing in IMS B	
	✓		✓	UE B visiting IMS A	
		x	x	UE B not registered in IMS B	
		√		IMS B has challenged with a 401 response the REGISTER	
		v		request	
	IMS A	IMS B	UE B		
Step		Direction		Message	IF
				protected REGISTER	
	M .			✓ an Authorization header	
1	♠	₽Ŷ		✓ an integrity-protected parameter	
				→ yes	
				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	
				irst the default public user identity no	
2	Ý .	Ŷħ		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	ary:	The network shall	handle incomir	ng SUBSCRIBE correctly		
IUT Ro	IUT Role: IMS B		•			
Refere	ences:	TS 124 229 (V7.14	l.0) [1],	Config Ref:	CF_ROAM_REG	
		clause 5.4.2.1.1 ¶1				
	Entities		Condition	n		
	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		м	,€¢	✓ an Expires header		
2		₩	∃ ∕	→ the same or lower expiry till	me than	
				specified in the initial SUBS		

				Test Purpose		
Identif		TP_IMS_5093_0				
Summ			egister in net	work-initiated de-registrati	on	
IUT Ro		IMS B			105 5044 550	
Refere	nces:	TS 124 229 (V7.1	4.0) [1],	Config Ref:	CF_ROAM_REG	
		clause 5.4.1.5 ¶6			0	
	INAC A	Entities	IIE D		Condition	
	IMS A	IMS B ✓	UE B ✓	LIE B registered in IMC	C.D. vio IMC A	
	▼	▼	· ·	UE B registered in IMS IMS A within the trust of		
	IMS A		UE B	INS A WITHIN the trust t	domain of fivio B	
Step	IIVIS A	Direction	UE B		Message I	F
1	₩,	Direction ∌	1	network initiated der		
		Ð	-	NOTIFY	egistration event	
2	€ a	Ϋ́́́́		→ a Request URI → UE_B ✓ an Event header → the reg event pa ✓ a Route header → the original Rou SUBSCRIBE ✓ a Message Body ✓ for each register a registration el ✓ an aor attribute → registered p ✓ a state attribut → terminated ✓ a contact sube ✓ an event att → deactivat ✓ a state attrib → terminate ✓ a URI subele	te header from ed public identity of UE B ement e public identity of UE B e element ribute ted or rejected ute	
3	Q ET	\$₽		a registration ele an aor attribute registered p a state attribute terminated a contact subee an event att deactivate a state attribute a terminate a terminate a terminate a URI subele	te header from ed public identity of UE A ement e public identity of UE A e element ribute ted or rejected ute	

					Test Purpose	
Identif			MS_5094_01	ataute e t	ule initiated up and and a	
Summ IUT Ro		IMS I		ster in netwo	rk-initiated re-authentication	
Refere			<u>Б</u> 24 229 (V7.14	L (() [1]	Config Ref:	CF_ROAM_REG
T.C.C.C			se 5.4.1.6 ¶2) [1],	Coming Item	or _restanting
		0.0.00	Entities		Condit	ion
	IMS A		IMS B	UE B		
	✓		✓	✓	UE B registered in IMS B via IM	
	✓		√		IMS A within the trust domain of	
	1340 4		<u>√</u>		IMS B receives an event to real	uthenticate UE_B
Cton	IMS A	<u> </u>	IMS B	UE B	Manag	MO IF
Step 1	\$		Direction		network initiated reauthentical	
	▽		ΣÝ			ation event
					NOTIFY ✓ a Request URI	
					→ UE_B	
					✓ an Event header	
					→ the reg event package	
					✓ a Route header	
					the original Route heade	r from
					SUBSCRIBE	
					✓ a Message Body	
					✓ for each registered public	dentity of UE B
2	Æ.		⇔		a registration element ✓ an aor attribute	
					registered public ide	ntity of LIF R
					✓ a state attribute	Titity of OE B
					→ active	
					√ a contact subelement	
					✓ an event attribute	
					→ shortened	
					✓ a state attribute	
					→ active	
					✓ a URI subelement → the contact addre	ss of LIE R
					NOTIFY	SS OF OL B
					✓ a Request URI	
					→ the P-CSCF_SIP_URI of	IMS A
					✓ an Event header	
					the reg event package	
					✓ a Route header	,
					→ the original Route heade	r from
					SUBSCRIBE ✓ a Message Body	
					✓ for each registered public	identity of UE A
•	^		М		a registration element	
3	Ŷ£		₽		✓ an aor attribute	
					registered public ide	ntity of UE B
					✓ a state attribute	
					→ active	
					✓ a contact subelement✓ an event attribute	
					✓ an event attribute→ shortened	
					✓ a state attribute	
					→ active	
					✓ a URI subelement	
					→ the contact addre	ss of UE B

5.3.3 Registration at I-CSCF

			Intero	perability Test Purpose				
Identif	Identifier: TP_IMS_5129_01							
Summ	Summary: If a request is received from a no I-CSCF			on-trusted domain, a 403 (Fo	orbidden) response shall be retur	ned by		
IUT Ro	ole:	IMS B						
References: TS 124 229 (V7.14.0) [1], clause 5.3.1.2 ¶1		1.0) [1],	Config Ref:	CF_ROAM_REG				
	Entities		Co	ondition				
	IMS A	IMS B	UE B					
		✓	✓	user of UE B existing in IM	SB			
	×	×		IMS A not within the trust of	lomain of IMS B			
	IMS A	IMS B	UE B					
Step		Direction		M	essage	IF		
1	₩ 🖈		valid initial REGISTER					
2	ŶĿ	Ą		403 response				

5.3.4 Registration at IBCF

			Intero	perability Test Purpose	
Identif	ier:	TP_IMS_5134_01		-	
Summ	Summary: If a request includes a Path head the Path header			der the IBCF shall add the routeabl	e SIP URI of an IBCF to the top of
IUT Ro	ole:	IMS A			
References:		TS 124 229 (V7.14 clause 5.10.4.1 ¶5		Config Ref:	CF_ROAM_REG
	Entities		Conditio	n	
	IMS A	IMS B	UE B		
	✓			IMS A configured for topology hid	ing
	IMS A	IMS B	UE B		
Step		Direction		Messag	e IF
1	Ŷ <u>E</u>		Ą	REGISTER	
2	₽	Ð		REGISTER ✓ an additional topmost Path h → the IBCF SIP URI of IMS A	

			Intero	perability Test Purpose		
Identif	ier:	TP_IMS_5401_01				
Summ	ary:	IBCF shall, if topol	ogy hiding is r	equired, apply the encryption for th	ne Path header	
IUT Ro	ole:	IMS A				
References:		TS 124 229 (V7.14 clause 5.10.2.1 ¶1	.0) [1],	Config Ref:	CF_ROAM_REG	
	Entities		Condition	on		
	IMS A	IMS B	UE B			
	✓			IMS A configured for topology hiding		
	IMS A	IMS B	UE B		-	
Step		Direction		Messag	le le	IF
1	Ŷŧ		Ą	REGISTER ✓ Path header		
2	₩	±Î∕		REGISTER ✓ a Path header ✓ encrypted consecutive header ✓ tokenized-by parameter	ader entries	

	Interoperability Test Purpose							
Identif	ier:	TP_IMS_54		•				
Summ	ary:	IBCF shall	select a new entry p	point and forward the origina	I REGISTER request on no respon	nse		
IUT Ro	IUT Role: IMS A		-					
Refere) (V7.14.0) [1],	Config Ref:	CF_ROAM_REG			
	clause).2.1 ¶1					
	(item 3 in 1 st bulleted list)							
	Entities			Condition				
	IMS	6 A	IMS B					
	✓			IMS A configured for topo				
	✓		✓	IMS A configured with me	ultiple entry points in IMS B			
	✓		✓	IMS A having sent an init	tial REGISTER to IMS B			
	IMS	A &	IMS B					
Step		Direc	tion		Message	IF		
1	Ŷ:	x	♦	no response				
2	Ŕ	>	Ð	original REGISTER add	dressed to another entry point			

	Interoperability Test Purpose						
Identif	ier:	TP_IMS_5	402_02				
Summ	ary:	IBCF shall	select a new entry	point and forward the original REGIST	TER request on 3xx respor	nse	
IUT Ro	ole:	IMS A					
Refere	References: TS 124		9 (V7.14.0) [1],	Config Ref:	CF_ROAM_REG		
	clause 5.10.2.1 ¶1 (item 3 in 1 st bulleted list)						
	Entities		Conditio	n			
	IMS	S A	IMS B				
	·			IMS A configured for topology hidi	ing		
	~		✓	IMS A configured with multiple en	try points for IMS B		
	V	/	✓	IMS A having sent an initial REGIS	STER to IMS B		
	IMS	S A	IMS B				
Step		Direc	tion	Message	9	IF	
1	€ Å		Ą	3xx response			
2	Á	>	£Î	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 F	REGISTER request on 480 response	nse.		
IUT Ro	IUT Role: IMS A		-	•				
clau		clause 5.10	9 (V7.14.0) [1], 0.2.1 ¶1 st bulleted list)	Config Ref:	CF_ROAM_REG			
	Entities		Co	Condition				
	IMS	S A	IMS B					
	✓			IMS A configured for topolo	ogy hiding			
	✓		✓	IMS A configured with mult	tiple entry points for IMS B			
	✓		✓	IMS A having sent an initia	I REGISTER to IMS B			
	IMS	S A	IMS B					
Step		Direc	tion	Mo	essage	IF		
1	Ŷ	Z	Æ	480 response				
2	Ŕ	>	Ð	original REGISTER addre	essed to another entry point			

			Inter	operability Test Purpose	
Identif	ier:	TP_IMS_5405_01		•	
Summ	ary:	The IBCF shall pe	rform encrypt	tion for topology hiding before request is sent	
IUT Ro	UT Role: IMS A				
Refere	ences:	TS 124 229 (V7.14 clause 5.10.2.2 ¶1		Config Ref: CF_ROAM_REG	
		Entities		Condition	
	IMS A	IMS B	UE B		
	✓			IMS A configured for topology hiding	
	✓	✓	√	UE_B has_received_200OK_on_a_protected_REGISTER from IMS_B	
	IMS A	IMS B	UE B		
Step		Direction		Message	IF
1	Ŷ _E		⇔	SUBSCRIBE addressed to IMS B	
2	₩,	ъĐ		SUBSCRIBE ✓ a Via header ✓ encrypted consecutive header entries ✓ tokenized-by parameter and ✓ a Record-route header ✓ encrypted consecutive header entries ✓ tokenized-by parameter and ✓ a Route header ✓ encrypted consecutive header entries ✓ tokenized-by parameter and ✓ a P-Charging-vector header and ✓ a P-Charging-Function-Addresses header	

			Interd	pperability Test Purpose		
Identif	ier:	TP_IMS_5	411_01	-		
Summ	ary:	If a request IBCF	is received from a n	on-trusted domain, a 403 (Forbidde	en) response shall be returned	d by
IUT Ro	ole:	IMS B				
Refere	nces:	clause 5.10	9 (V7.14.0) [1], 0.3.1 ¶1 st numbered list)	Config Ref:	CF_ROAM_REG	
		Enti		Condition	Condition	
	IM	SA	IMS B			
			✓	IMS B configured for topology his	ding	
		×	×	IMS A not within the trust domain	n of IMS B	
	IM	SA	IMS B			
Step	p Direction		Messag	је	IF	
1	\$		Ð	valid REGISTER		
2	4	È	Ŷ.	403 response		

5.4 Dialog Procedures

5.4.1 Dialog at P-CSCF

	Test Purpose Identifier: TP IMS 5046 01										
Identif	ier:	TP_IMS_5	046_01		•						
Summ	ary:	When the I	P-CSCF red	ceives an i	nitial INVITE request for a dialog fro	m a UE for which a					
		Service-Ro	oute header	list exists	without topology hiding						
IUT Ro		IMS A									
Refere	ences:		9 (V7.14.0)	[1],	Config Ref:	CF_ROAM_CALL					
		clause 5.2.	.6.3 ¶5								
	(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 not configured for topology hiding						
	UE A	IMS A	IMS B UE B								
Step		Direction			Message	2	IF				
1		Ŷ Ŀ		Ą	initial INVITE						
2		\$	∌		INVITE ✓ a topmost Route header → the P-CSCF SIP URI of IMS ✓ a Route header ✓ the list of Service Route header ✓ the list of Service Route header ✓ the P-CSCF via port number ✓ the P-CSCF-FQDN address ✓ the P-CSCF-IP address of ✓ an additional topmost Record ✓ the P-CSCF port number which will be will be subsequent requests from U ✓ the P-CSCF-FQDN address ✓ the P-CSCF-IP address of the ✓ P-Preferred-Identity header ✓ a P-Asserted-Identity header ✓ an address of UE B ✓ a P-Charging-Vector header ✓ an icid parameter	ader URIs or s or the IMS A -Route header here it awaits UE A s or the					

					Test Purpose	
Identif	ier:	TP_IMS_5	046_02		•	
Summ	ary:	When the	P-CSCF red		initial INVITE request for a dialog from a UE for which a with topology hiding	
IUT Ro	ole:	IMS A			1 2/	
Refere	ences:	TS 124 22 clause 5.2 (1 st numbe		[1],	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	
		·			IMS A configured for topology hiding	
01	UE A	IMS A	IMS B	UE B		
Step 1		Direc	ction	I "M	Message	IF.
1		<u> </u>		Ą	initial INVITE	
2		₩,	∌		INVITE ✓ a topmost Route header → the IBCF SIP URI of IMS A → 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 ✓ a P-Charging-Vector header ✓ an icid parameter	

					Test Purpose		
Identif	fier:	TP_IMS_5	048_01		•		
Summ	nary:	P-CSCF fo	rwards a ta	rget refres	h request from the UE		
IUT Ro	ole:	IMS A		-	·		
Refere	ences:	TS 124 229 (V7.14.0) [1], clause 5.2.6.3 ¶32 (3 rd numbered list)			Config Ref: CF_	_ROAM_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 initiated a dialog with UE A		
	UE A	IMS A	IMS B	UE B			
Step		Direction			Message		IF
1		Ŷ _E		Ą	subsequent INVITE		
2		₩,	€		INVITE ✓ a topmost Route header → the P-CSCF SIP URI of 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 ✓ 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 llog	, from the UE subsequent	to a
IUT Ro	ole:	IMS A			<u> </u>		
Refere	ences:	TS 124 229 (V7.14.0) [1], clause 5.2.6.3 ¶66 (7 th numbered list)			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 B has initiated a dialog with UE A		
	UE A	IMS A	IMS B	UE B			
Step		Direc	ction		Message		IF
1		ŶĿ		À	BYE		
2	2 ♦ ₺		■ A Route header ✓ the P-CSCF SIP URI of IMS ✓ the same Record-Route head previous ACK				

					Test Purpose		
Identif	ier:	TP_IMS_5	053_01		•		
Summ	ary:	P-CSCF re	ceives from	the UE a	request for an unknown method wi	thout topology hiding	
IUT Ro	ole:	IMS A					
Refere	nces:	TS 124 229 (V7.14.0) [1],			Config Ref:	CF_ROAM_CALL	
		clause 5.2.6.3 ¶77 (8 th 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		Message	9	IF
1	₩	Ð			Unknown Method addressed to	UE B	
2		\$	₽Ŷ		Unknown Method ✓ a Route header → the list of Service Route header URIs from the registration x a P-Preferred-Identity header ✓ a P-Asserted-Identity header ✓ an address of UE A		

Test Purpose											
Identif	ier:	TP_IMS_5	053_02		•						
Summ	ary:	P-CSCF re	ceives from	n the UE a	request for an unknown method with to	opology hiding					
IUT Ro	IUT Role: IMS A				•						
Refere	nces:	TS 124 229 (V7.14.0) [1],			Config Ref: CF	ROAM_CALL					
		clause 5.2.6.3 ¶77 (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						
		✓			IMS A configured for topology hiding						
	UE A	IMS A	IMS B	UE B							
Step		Direc	ction		Message		IF				
1	₿	Ð			Unknown Method addressed to UE E	В					
2		\$	∌े		Unknown Method ✓ a Route header → the list of Service Route header URIs from the registration x 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	onse to an initial request for a dialog	from the UE		
IUT Ro		IMS A						
Refere	ences:	TS 124 229 (V7.14.0) [1], clause 5.2.6.4 ¶17 (2 nd numbered list)		[1],	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 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	₩	Ď			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	ier:	TP_IMS_5	055_02		•		
Summ	ary:	The P-CSC	CF receives	a 2xx resp	onse to an initial request for a dialog from the UE		
IUT Ro	ole:	IMS A					
Refere	ences:	TS 124 229 (V7.14.0) [1], clause 5.2.6.4 ¶17 (2 nd numbered list)		[1],	Config Ref:	CF_ROAM_CALL	
	Entities				Condition	n	
	UEA IMSA IMSB UEB			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	tion		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 paramented by the UE	eter in the P-Charging-Vec	tor					
IUT R	ole:	IMS A										
Refere	ences:	TS 124 229 (V7.14.0) [1], clause 5.2.7.2 ¶4		[1],	Config Ref:	CF_ROAM_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 A	IMS A	IMS B	UE B								
Step		Direc	ction		Message		IF					
1		ŶĿ		Ą	initial INVITE							
2		\$	र्छे		INVITE ✓ a P-Charging-Vector header ✓ a access-network-charging-info parameter							

					Test Purpose				
Identif	ier:	TP_IMS_5	070_01		•				
Summ	ary:	The P-CSC network	CF shall res	pond with a	a 100 (Trying) provisional response	e on initial INVITE in terminating			
IUT Ro	ole:	IMS A							
Refere	nces:	TS 124 229 (V7.14.0) [1], clause 5.2.7.3 ¶3			Config Ref:	CF_ROAM_CALL			
		Enti	ties		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		Direc	ction		Message	e IF			
1		ŶĿ	€ Ø initial INVITE						
2		₩	Ð		100 response				

						Test Purpose					
Identif	ier:	TP_IM	S_5072_	01		•					
Summ	ary:	P-CSC	F sends	CANCEL	in case	its UE goes down during dialog init	iation				
IUT Ro	ole:	IMS A									
Refere	nces:			7.14.0) [1]],	Config Ref:	CF_ROAM_CALL				
	clause 5.2.8.1.1 ¶1										
			Entities			Condition	1				
	UE A	NWK	IMS A	IMS B	UE B						
	✓		\checkmark			UE A registered in IMS A					
				\checkmark	✓	UE B registered in IMS B					
	1				1	UE B has received 180 on initial re	equest for dialog from				
					·	UE A					
	UE A	NWK	IMS A	IMS B	UE B						
Step			Direction			Message		IF			
1		₩	Ď			an indication that UE B is no long	ger available				
2			Ą			CANCEL					
	Ŷ Ŀ r					✓ a Reason header					
	<i>A</i>					✓ a status code parameter					
						→ 503 Service Unavailable					
3			₩	Ď		503 response					

						Test Purpose	
Identif	ier:	TP_IM	S_5073_	01		•	
Summ	ary:	P-CSC	CF sends	BYE in c	ase its c	alling UE goes down in ongoing dialog	
IUT Ro	ole:	IMS B					
Refere	ences:			7.14.0) [1]],	Config Ref: CF_INT_0	CALL
		clause	5.2.8.1.2	2 ¶1			
		T	Entities	T		Condition	
	UE A	IMS A	NWK	IMS B	UE B		
	✓	✓				UE A registered inIMS A	
				✓	√	UE B registered in IMS B	
	✓		1011		✓	UE B has initiated a dialog with UE A	
01	UE A	IMS A	NWK	IMS B	UE B		
Step			Direction		1	Message	. IF
1			₿	Ð		an indication that UE B is no longer availab	ole
2		Ŷ±		Ϋ́D		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 release reason	

						Test Purpose	
Identif	fier:	TP_IM	IS_5074_	01			
Summ	nary:	P-CSC	CF sends	BYE in c	ase its c	alled UE goes down in ongoing dialog	
IUT Ro	ole:	IMS A					
Refere	ences:		4 229 (V7 5.2.8.1.2	7.14.0) [1]],	Config Ref: CF_INT_CALL	
		Clause	Entities	<u> </u>		Condition	
	UE A	IMS A	NWK	IMS A	UE B		
	✓	✓				UE A registered inIMS A	
				✓	✓	UE B registered in IMS A	
	✓				✓	UE A has initiated a dialog with UE B	
	UE A	IMS A	NWK	IMS A	UE B		
Step			Direction		·	Message	IF
1			₽	Ð		an indication that UE B is no longer available	
2		€±		Ą		PYE ✓ Request URI → Contact header value of UE A ✓ To header → initial INVITE To value from UE A ✓ From header → initial 200 OK From value from UE B ✓ 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	ier:	TP IMS 5	080 01		•					
Summ	ary:		The P-CSCF shall include the updated access-network-charging-info parameter from P-Charging-Vector header when sending subsequent INVITE to the S-CSCF.							
IUT Ro	ole:	IMS A	••••							
Refere	ences:	TS 124 229	9 (V7.14.0)	[1],	Config Ref:	CF_ROAM_CALL				
		clause 5.2.	9.1 ¶ 2							
	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 initiated a dialog with L	JE A				
	UE A	IMS A	IMS B	UE B						
Step		Direc	ction		Messag	е	IF			
1		Ŷ Ŀ		Ŷ.	subsequent INVITE					
2		₩	र्ज		INVITE ✓ a P-Charging-Vector header ✓ an updated access-networ					

					Test Purpose		
Identif	ier:	TP_IMS_5	080_02		•		
Summ	ary:				dated access-network-charging-informations sending the subsequent UPDATE t		
IUT Role: IMS A							
References:		TS 124 229 clause 5.2.	9 (V7.14.0) 9.1 ¶ 2	[1],	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 B has initiated a dialog with wi	th UE A	
	UE A	IMS A	IMS B	UE B			
Step		Direc	ction		Message	:	IF
1		ŶĿ		⇔	subsequent UPDATE		
2		₩,	र्चे		 UPDATE ✓ a P-Charging-Vector header ✓ an updated access-network parameter 	-charging-info	

					Test Purpose		
Identif	ier:	TP_IMS_5	081_01		-		
Summ	ary:	P-CSCF 10	00 response	e to a re-IN	VITE		
IUT Ro	le:	IMS A	•				
References: TS 124 229 (V7.14.0) [1], clause 5.2.9.2 ¶1					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 wi	th UE B	
	UE A	IMS A	IMS B	UE B			
Step		Direc	tion		Message		IF
1		ŶĿ	Ą		subsequent INVITE addressed to	UE B	
2		₽	Ð		100 response		

					Test Purpose		
Identif	ier:	TP_IMS_5	082_01		•		
Summ	ary:	P-CSCF se	ends 200 re	sponse to a	a target refresh request with P-Cha	rging-Vector	
IUT Role: IMS A			•	•			
Refere	References: TS 124 229 (V7.14.0) [1], clause 5.2.9.2 ¶2		[1],	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 UI	ΕB	
		✓		✓	IMS B has received a target refree from IMS A	sh request in a dialog	
	UE A	IMS A	IMS B	UE B			
Step		Direc	tion		Message		IF
1		È		À	200 response		
2		₩	£		200 response ✓ a P-Charging-Vector header ✓ an updated access-network parameter	c-charging-info	

5.4.2 Dialog at S-CSCF

					Test Purpose		
Identif	fier:	TP_IMS_5	097_01		•		
Summ	nary:	S-CSCF m	ust inserts		rameter, remove access-network-choefore sending initial INVITE or a in		
IUT Ro	ole:	IMS A				•	
Refere	ences:	TS 124 229 clause 5.4.		[1],	Config Ref:	CF_INT_CALL CF_ROAM_AS	
		Enti	ties		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	ction		Message		IF
1	₩	र्च			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 parameter √ an orig-ioi parameter → IMS A * an access-network-charging * a term-ioi parameter ✓ a Record-Route header → the originating S-CSCF SII * a P-Access-Network-Info hea	g-info parameter	

					Test Purpose			
Identif	ier:	TP_IMS_5	097_02		·			
Summ	ary:		serts a sec		erted-Identity header indicating a registered tel URI or sip UR INVITE	I		
IUT Ro	ole:	IMS A	•					
Refere	nces:	TS 124 22	9 (V7.14.0)	[1],	Config Ref: CF_INT_CALL			
		clause 5.4	.3.2 ¶1					
	Entities				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		Direc	tion		Message	IF		
1	₩	Ð			initial INVITE addressed to UE B			
2		₩	ਜੁੰ		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		
Identi	fier:	TP_IN	IS_5097_	04		•		
Summ	nary:	S-CSC	CF uses E	ENUM/DN	S to trar	nslate Tel URIs to SIP URIs in initial INVITE requests		
IUT R	ole:	IMS A				·		
Refere	References: TS 124 229 (V7.14.0) [1],			7.14.0) [1],	Config Ref: CF_INT_CALL		
	clause 5.4.3.2 ¶1							
	Entities					Condition		
	UE A	IMS A	DNS B	IMS B	UE B			
	✓	✓				UE A registered in IMS A		
				✓	✓	UE B registered in IMS B		
			✓		1	DNS B configured with an ENUM entry for Tel URI E.164		
					·	Number of UE B		
	UE A	IMS A	DNS B	IMS B	UE B			
Step		ļ.	Direction			Message	IF	
						initial INVITE addressed to UE B		
1	₩	Ď				✓ a Request URI		
						→ a Tel URI		
2		45	Ð			DNS Query		
		\$	Σľ			✓ the Tel URI E.164 Number		
						DNS Response		
3		ÝE.	¢ħ			✓ NAPTR Resource Record		
						→ the SIP URI of UE B		
						initial INVITE		
						✓ a Request URI		
4		₩,		Ð		→ a SIP URI of UE B		
						✓ a P-Charging-Vector header		
						* an access-network-charging-info parameter		

					Test Purpose	
Identif	ier:	TP_IMS_5	106_01			
Summ	ary:			subsequen	t INVITE prior to sending it over NNI	
IUT Ro	ole:	IMS A		•	•	
Refere	nces:	TS 124 229	9 (V7.14.0)	[1],	Config Ref: CF_INT_CALL	
		clause 5.4.	3.2 ¶69			
		(4 th numbe	red 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	IF
1	₩	立			subsequent INVITE addressed to UE B	
					subsequent INVITE	
					✓ a Record-Route header	
					→ the S-CSCF SIP URI of IMS A	
2		₩	Ð		✓ 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	106_02		•	
Summ	ary:	S-CSCF m	ust handle	UPDATE p	rior to sending it over NNI	
IUT Ro	IUT Role: IMS A			·		
References:		TS 124 229 clause 5.4. (4 th number	3.2 ¶69	[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	
	✓			✓	UE A has initiated a dialog with UE B	
	UE A	IMS A	IMS B	UE B		
Step		Direc	ction		Message	IF
1	₿	Ď			UPDATE addressed to UE B	
2		<i>\$</i>	∌े		 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	ary:	S-CSCF re	emoves its o	wn SIP UF	RI from the route header before sending BYE	
IUT Role: IMS A						
References: TS 124 229 (V7.14.0) [1], clause 5.4.3.2 ¶49			,	[1],	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 A has initiated a dialog with UE B	
	UE A	IMS A	IMS B	UE B		
Step		Direc	ction		Message	IF
1	₿	Σŷ			BYE addressed to UE B	
2		\$ ₽			■ Route header The S-CSCF SIP URI of IMS A	

					Test Purpose				
Identif	ier:	TP IMS 5	107_02		•				
Summ	ary:	S-CSCF re	moves its o	own SIP UR	RI from the route header before sending ACK				
IUT Ro	ole:	IMS A	MS A						
Refere	ences:	TS 124 229 (V7.14.0) [1], clause 5.4.3.2 ¶49			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 UE B				
	UE A	IMS A	IMS B	UE B					
Step		Direc	ction		Message	IF			
1	₽	Ð			ACK addressed to UE B				
2		\$	ъŷ		ACK ★ Route header → the S-CSCF SIP URI of IMS A				

					Test Purpose		
Identif	ier:	TP_IMS_5	107_03		•		
Summ	ary:	S-CSCF re	moves its c	wn SIP UR	I from the route header before sen	ding CANCEL	
IUT Ro	IUT Role: IMS A						
References:		TS 124 229	9 (V7.14.0)	[1],	Config Ref:	CF_INT_CALL	
		clause 5.4.3.2 ¶69 (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 A has received 180 on initial re UE B	equest for dialog from	
	UE A	IMS A	IMS B	UE B			
Step		Direc	ction		Message)	IF
1	\$	Ď			CANCEL addressed to UE B		
					CANCEL		
2		₩	侴		Route header		
					→ the S-CSCF SIP URI of IMS	SA	

					Test Purpose		
Identif	ier:	TP_IMS_5	107_04		•		
Summ	ary:	S-CSCF re	moves its c	wn SIP UR	I from the route header before sen	iding REFER	
IUT Ro	le:	IMS A					
Refere	References: TS 124 229 (V7.14.0) [1],		Config Ref:	CF_INT_CALL			
	clause 5.4.3.2 ¶49						
	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 received 2000K on initia	al request for dialog to	
					MRFC AS in IMS A		
	UE A	IMS A	IMS B	UE B			
Step		Direc	ction		Message	9	IF
1	\$	Ð			REFER addressed to UE B		
					REFER		
2		₩	Ð		Route header		
					→ the S-CSCF SIP URI of IM:	SA	

					Test Purpose		
Identif	ier:	TP_IMS_5	108_05		•		
Summ	ary:	S-CSCF re	jects barre	d users on	initial INVITE		
IUT Ro	le:	IMS B					
Refere	nces:	TS 124 229 (V7.14.0) [1],			Config Ref:	CF_INT_CALL	
		clause 5.4.	3.3 ¶1				
	Entities				Condition	า	
	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		Direc	tion		Message		IF
					initial INVITE addressed to UE B		
1		\$			✓ a Request URI		
					→ a barred user in IMS B		
2		Ŷ.	Ą		404 response		

					Test Purpose	
Identif	ier:	TP_IMS_5	115_01		•	
Summ	ary:		clude term- ng network		ter and restores orig-ioi in 180 responses from UE to initial re	quests
IUT Ro	ole:	IMS B				
References:		TS 124 229 (V7.14.0) [1], clause 5.4.3.3 ¶65 (3 rd 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	
	UE A	IMS A	IMS B	UE B		
Step		Direc	tion		Message	IF
1			Ŷ <u>E</u>	À	180 response addressed to UE A	
2	!				180 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 02			
Summ	arv:			ioi parame	eter and restores orig-ioi in 2xx responses from UE to initial re	equests
	, -		ing network	•		
IUT Ro	ole:	IMS B				
Refere	_		9 (V7.14.0)	[1].	Config Ref: CF_INT_CALL	
		clause 5.4.	. ,	L·3,	5 <u>5</u>	
		(3 rd 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 has received 180 on initial request for dialog from	
	v			v	UE A	
	UE A	IMS A	IMS B	UE B		
Step		Direc	ction	"	Message	IF
1			Æ	À	2xx response addressed to UE A	
					2xx response	
					✓ a P-Charging-Vector header	
			м		✓ an orig-ioi parameter	
2		Œ	4		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:				erted-Identity header in 1xx response indicating a registered t	tel URI
		or SIP URI	whichever	is not pres	ent	
IUT Ro	ole:	IMS B				
Refere	ences:		9 (V7.14.0)	[1],	Config Ref: CF_INT_CALL	
		clause 5.4.3.3 ¶65 (3 rd numbered list)				
	Entities				Condition	
	UE A	IMS A	IMS B	UE B		
	✓	✓			UE A registered in IMS A	
			✓	✓	OL D registered in two D	
		/		✓	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		Direc	ction		Message	IF
1			Ŷ <u>E</u>	Ą	1xx response addressed to UE A	
2		चेंद	Ą		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-Asse	erted-Identity header in 2xx response indicating a registered	tel URI
		or SIP URI	whichever	is not pres	ent	
IUT Ro	ole:	IMS B				
Refere	nces:	TS 124 22	9 (V7.14.0)	[1],	Config Ref: CF_INT_CALL	
		clause 5.4.3.3 ¶65 (3 rd 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	
				✓	UE B default registered public identity is a SIP URI	
	✓			✓	UE B has received 180 on initial request for dialog from UE A	
	UE A	IMS A	IMS B	UE B		
Step		Direc	ction		Message	Ŧ
1			Ŷ Ŀ	Ą	2xx response addressed to UE A	
					2xx response	
					✓ a P-Asserted-Identity header	
2		€ W			→ the SIP URI of	
		43	Q		UE B	
					√ a P-Asserted-Identity header	
					→ the Tel URI of UE B	

					Test Purpose		
Identif	ier:	TP_IMS_5	120_01		•		
Summ	ary:			e its URI fro resh reques	om the Route header and insert its	SIP-URI in the Record Ro	ute
IUT Ro	ole:	IMS B		•			
Refere	ences:	TS 124 229 (V7.14.0) [1], clause 5.4.3.3 ¶65 (5 th numbered list)			Config Ref:	CF_ROAM_CALL	
		Entities			Condition	า	
	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	
2		Œ	Ą		INVITE ✓ a topmost Route header → the S-CSCF SIP URI of IN ✓ a Record-Route header ✓ the S-CSCF SIP URI	1S B	

					Test Purpose		
Identif	ier:	TP_IMS_5	120_02		•		
Summ	ary:	S-CSCF m	ust Remov	e its URI fro	om the Route header and insert its	SIP-URI in the Record Rou	te
		header on	a target ref	resh reques	st		
IUT Ro	ole:	IMS B					
References:		TS 124 229 (V7.14.0) [1], clause 5.4.3.3 ¶65 (5 th 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 A has initiated a dialog with UE B		
	UE A	IMS A	IMS B	UE B			
Step		Direc	tion		Message		IF
1	₩		Ð		UPDATE addressed to UE B		
2		€द	ĥ		UPDATE ✓ a topmost Route header → the S-CSCF SIP URI of IN ✓ a Record-Route header ✓ the S-CSCF SIP URI	/IS B	

					Test Purpose	
Identif	ier:	TP_IMS_5	121_01		<u> </u>	
Summ	ary:	S-CSCF re		ess-network	k-charging-info parameter from 1xx response to subsequent	or target
IUT Ro	ole:	IMS B				
Refere	ences:	TS 124 229 (V7.14.0) [1], clause 5.4.3.3 ¶75 (6 th numbered list)			Config Ref: CF_INT_CALL	
		Enti	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 subsequent or target refresh request in a dialog	
	UE A	IMS A	IMS B	UE B		
Step		Dire	ction		Message	퓌
1			Ŷ Ŀ	Ą	1xx response addressed to UE A	
2		(E	Å		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-networl	k-charging-info parameter from 2xx response to subsequent o	or target
IUT Ro	ole:	IMS B				
Refere	ences:	TS 124 22 clause 5.4 (6 th number		[1],	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 a subsequent or target refresh request in a dialog	
	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		Ý L	Å		2xx response ✓ a P-Charging-Vector header * an access-network-charging-info parameter	

					Test Purpose			
Identifier: TP_IMS_5301_01				•				
Summary:		S-CSCF shall prior to forwarding a subsequent request remove its own URI from the Route header and add it to the Record-Route header						
			to the Reco	rd-Route h	eader			
IUT Ro		IMS A						
Refere	ences:	TS 124 229 (V7.14.0) [1],			Config Ref:	CF_ROAM_CALL		
		clause 5.4.3.3 ¶79						
		(7 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 initiated a dialog with	UE B		
	UE A	IMS A	IMS B	UE B				
Step	Step Direction				Message II		IF	
1	₩	Ð			BYE			
					BYE			
2		₩	Ð		 ✓ Route header → the S-CSCF SIP URI of IMS A ✓ a topmost Record-Route header → the S-CSCF SIP URI of IMS A 			

						Test Purpose				
Identifier:		TP_IN	TP_IMS_5139_01							
Summary:			The S-CSCF receives a network internal indication to release an existing multimedia session including registration lifetime expiration of the last public user identity							
IUT Role:		IMS A			•					
References:			4 229 (V7 2 5.4.5.1.2],	Config Ref: CF_INT_CALL				
			Entities			Condition				
	UE A	NWK	IMS A	IMS B	UE B					
	✓		✓			UE A registered in IMS A				
				✓	✓	UE B registered in IMS B				
	\checkmark				✓	UE A has initiated a dialog with UE B				
	UE A	NWK	IMS A	IMS B	UE B	_				
Step			Direction			Message				
1		₩,	±ŷ.			network internal indication that the lifetime of the last				
•		Y	<i>D</i>			public user identity has expired				
2			₩,		€	 BYE ✓ a Request URI → Contact header value of UE B ✓ a To header → the To header of the 200 response to initial ✓ a From header → the From header of the initial ✓ a Call-ID header → the Call-ID header of the initial ✓ a Cseq header → CSeq header → CSeq header → a Route header → routeing information towards the called user as stored for the dialog ✓ a Reason header ✓ further headers, based on local policy or the 				

5.4.3 Dialog at I-CSCF

Interoperability Test Purpose								
Identif	ier:	TP_IMS_5131_01						
Summary:		I-CSCF shall remove P-Charging-Function-Addresses header from 180 response to initial reque						
IUT Role:		IMS B						
References:		TS 124 229 (V7.14.0) [1],			Config Ref:	CF_INT_CALL		
		clause 5.3.2.1 ¶52 (after note 8)		er note 8)				
		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			
	UE A	IMS A	IMS B	UE B				
Step		Direction			Message		IF	
1			ŶĿ	Ą	180 response addressed to UE A		•	
2		Ŷ	ф		180 response * a P-Charging-Function-Addresses header			

				Interop	perability Test Purpose	
Identif	ier:	TP_IMS_5	131_02	-	•	
Summ	ary:	I-CSCF sha	all remove I	2-Charging	-Function-Addresses header from 200 response to initial requ	uest
IUT Role: IMS B						
Refere	ences:	TS 124 229 (V7.14.0) [1],			Config Ref: CF_INT_CALL	
		clause 5.3.2.1 ¶52 (after note 8)		er note 8)		
	Entities				Condition	
	UE A	IMS A	IMS B	UE B		
	✓	✓			UE A registered in IMS A	
			✓	✓	UE B registered in IMS B	
	1			√	UE A has received 180 on initial request for dialog from UE	
	· ·			· ·	В	
	UE A	IMS A	IMS B	UE B		
Step		Direc	ction		Message	IF
1			Ŷ <u>E</u>	Ą	2xx response addressed to UE A	
2		Ŷ Ŀ	ŶĮ.		2xx response x a P-Charging-Function-Addresses header	

				Interop	perability Test Purpose		
Identif	ier:	TP_IMS_5	132_01				
Summ	ary:	I-CSCF sh	all return ar	n appropria	te response to initial request to non-	-existent user	
IUT Ro	ole:	IMS B					
Refere	nces:	TS 124 229 (V7.14.0) [1],			Config Ref:	CF_INT_CALL	
		clause 5.3	2.1 ¶44				
	(after 5 th numbered list)						
	Entities				Condition		
	UE A	IMS A	IMS B	UE B			
	✓	✓			UE A registered in IMS A		
			×		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		Direc	ction		Message		IF
					initial INVITE addressed to UE B		
1		₩	Ð		✓ a Request URI	√ a Request URI	
					→ a non existing user in IMS B		
2a		È	À		404 response		
2b		Ŷ:	Ą		604 response		

				Interop	perability Test Purpose		
Identif	ier:	TP_IMS_5	133_01	•			
Summ	ary:	I-CSCF sha	all return ur	successful	response to initial request to non-registered user		
IUT Ro	ole:	IMS B			•		
References:		TS 124 229 (V7.14.0) [1], clause 5.3.2.1 ¶45 (before 6 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 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	Step Direction				Message	IF	
1		₩	Ð		initial INVITE addressed to UE B		
2		È	♠ 4xx response				

5.4.4 Dialog at IBCF

			Interd	perability Test Purpose		
Identif	ier:	TP_IMS_5135_01				
Summ	ary:	If a request include of the Record-Rou		Route header the IBCF shal	I add its own routeable SIP URI t	o the top
IUT Ro	ole:	IMS A				
Refere	nces:	TS 124 229 (V7.14 clause 5.10.4.1 ¶8 (after note 3)	/ 6 3/	Config Ref:	CF_INT_CALL	
	Entities			Condition		
	IMS A	IMS B	UE B			
	✓			IMS A configured for topo	IMS A configured for topology hiding	
	IMS A	IMS B	UE B		-	
Step		Direction			Message	IF
1	Ŷ Ŀ		Ą	initial INVITE		
2	\$	र्ज		initial INVITE ✓ an additional topmos ✓ the IBCF SIP URI	at Record-Route header of IMS A	

				Intero	perability Test Purpose	
Identif	ier:	TP IMS 5	137 01	1111010	porubility 100t i urpoco	
Summ				m encryptic	on for topology hiding before an intial INVITE request is sent	<u> </u>
IUT Ro		IMS A	a p 0o		on to topology maining colors an initial in the z request is com-	•
Refere	ences:	TS 124 229 (V7.14.0) [1], clause 5.10.4.2 ¶1 (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	Step Direction			Message	IF	
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 Record-Route header ✓ 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	

				Intero	perability Test Purpose		
Identif	ier:	TP_IMS_5	137_02		•		
Summ	ary:	The IBCF	shall perforr	m encryptic	on for topology hiding before 180 re-	sponse is sent	
IUT Ro	ole:	IMS B	•				
Refere	nces:				Config Ref:	CF_INT_CALL	
		clause 5.10	0.4.2 ¶1				
		Enti	ties		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 request for a dialog from UE A		
			✓		IMS B configured for topology hiding		
	UE A	IMS A	IMS B	UE B			
Step		Direc	tion		Message		IF
1			Ý:	Å.	180 response addressed to UE A		
2		Œ	भ्र		180 response ✓ Via header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries ✓ a tokenized-by parameter ✓ Record-Route header ✓ encrypted consecutive header entries ✓ a tokenized-by parameter		

				Intero	perability Test Purpose	
Identif	ier:	TP_IMS_5	137_03		, ,	
Summ	ary:	The IBCF s	shall perforr	m encryptic	on for topology hiding before 200 response is sent	
IUT Ro		IMS B	•	7.	, , ,	
Refere	nces:	TS 124 229 (V7.14.0) [1],			Config Ref: CF_INT_CALL	
		clause 5.10.4.2 ¶1				
	Entities				Condition	
	UE A	IMS A	IMS B	UE B		
	√	✓			UE A registered in IMS A	
			✓	✓	UE B registered in IMS B	
	✓			1	UE A has received 180 on initial request for dialog from UE	
	V			•	В	
			✓		IMS B configured for topology hiding	
	UE A	IMS A	IMS B	UE B		
Step		Direc	tion		Message	IF
1			Ŷ Ŀ	Ŷħ	200 response addressed to UE A	
2		Ŷŧ	Ф		200 response ✓ a Via header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries ✓ a tokenized-by parameter ✓ a Record-Route header ✓ encrypted consecutive header entries ✓ a tokenized-by parameter	

				Interop	erability Test Purpos	Se Se
Identif	ier:	TP_IMS_5	137_04	•		
Summ	ary:	The IBCF	shall perfori	m encryptio	n for topology hiding b	efore an intial REGISTER request is sent
IUT Ro	le:	IMS A	•			·
References:		TS 124 229 (V7.14.0) [1], clause 5.10.4.2 ¶1 (1 st numbered list)			Config Ref:	CF_ROAM_REG
		Enti				Condition
	UE B	IMS A	IMS B			
		✓		IMS A conf	figured for topology hid	ding
	UE B	IMS A	IMS B			
Step					Message	IF.
1	\$	Ď		unprotect	ed REGISTER addres	ssed to IMS B
2		₩	€	✓ encr ✓ a tok ✓ a Serv ✓ encr ✓ a tok ✓ a Path ✓ encr	neader IBCF SIP URI of IMS A ypted consecutive hea kenized-by parameter vice-Route header ypted consecutive hea kenized-by parameter	ader entries ader entries

				Intero	perability Test Purpose		
Identif	ier:	TP IMS 5	404_01		, , , , , , , , , , , , , , , , , , , ,		
Summ	ary:	IBCF shall	remove P-	Charging-F	unction-Addresses header from i	nitial INVITE request	
IUT Role: IMS A						•	
Refere	ences:	TS 124 229 (V7.14.0) [1], clause 5.10.2.2 ¶1 (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		
		✓			IMS A configured for topology his	ding	
	UE A	IMS A	IMS B	UE B			
Step		Direc	tion		Messag	je	IF
1	₩	Ð			initial INVITE addressed to UE I ✓ a P-Charging-Function-Addressed		
2		\$	Ď		initial INVITE * a P-Charging-Function-Addr	esses header	

				Intero	perability Test Purpose	
Identif	ier:	TP_IMS_5	408_01			
Summ	ary:	The IBCF	shall perforr	m encryptic	on for topology hiding before ACK request is sent	
IUT Ro	ole:	IMS A	•	•		
Refere	ences:	clause 5.10.2.3 ¶1 (1 st 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 A has received 2000K on initial request for dialog from UE B	
		✓			IMS A configured for topology hiding	
	UE A	IMS A	IMS B	UE B		
Step		Direc	ction		Message	IF
1	₿	Ð			ACK addressed to UE B	
2		\$	£		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	

				Intero	perability Test Purpose		
Identif	ier:	TP_IMS_5	408_02				
Summ	ary:	The IBCF s	shall perforn	n encryptic	on for topology hiding before CANCI	EL request is sent	
IUT Ro	ole:	IMS A					
Refere	nces:		9 (V7.14.0)	[1],	Config Ref:	CF_INT_CALL	
		clause 5.10	0.2.3 ¶1				
		(1 st numbe					
	Entities INC A INC D LIE D				Condition		
	UE A	IMS A	IMS B	UE B	115.4		
	✓	V	✓		UE A registered in IMS A		
			V	✓	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		Direc	tion		Message		IF
1	₩,	Ð			CANCEL addressed to UE B		
					CANCEL		
					✓ a Via header		
					→ the IBCF SIP URI of IMS A		
					✓ encrypted consecutive head	ler entries	
					✓ a tokenized-by parameter		
2		₩,	→		✓ a Record-Route header		
_		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			✓ encrypted consecutive head	ler entries	
					✓ a tokenized-by parameter		
					✓ a Route header		
					→ the IBCF SIP URI of IMS A		
					✓ encrypted consecutive head	ler entries	
					✓ a tokenized-by parameter		

				Intero	perability Test Purpose	
Identif	ier:	TP_IMS_5	408_03		•	
Summ	ary:	The IBCF	shall perforr	m encryptic	on for topology hiding before BYErequest is sent	
IUT Ro	ole:	IMS A	•			
Refere	ences:	TS 124 229 clause 5.10 (1 st numbe	9 (V7.14.0) 0.2.3 ¶1 red list)	[1],	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 initiated a dialog with UE B	
		✓			IMS A configured for topology hiding	
	UE A	IMS A	IMS B	UE B		
Step		Direc	ction		Message	IF
1	₽	Ð			BYE addressed to UE B	
2		₩	∌		BYE ✓ a Via header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries ✓ a tokenized-by parameter ✓ a Record-Route header ✓ 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	

				Interd	pperability Test Purpose	
Identif	ier:	TP_IMS_5	408 04		1 ×	
Summ				n encrypti	ion for topology hiding before subsequent INVITE reques	t is sent
IUT Ro		IMS A	1			
Refere	ences:	TS 124 229 (V7.14.0) [1], clause 5.10.2.3 ¶1 (1 st numbered list)			Config Ref: CF_INT_CALL	
	Entities				Condition	
	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 UE B	
		✓			IMS A configured for topology hiding	
	UE A	IMS A	IMS B	UE B		
Step	ep Direction				Message	IF
1	\$	Ď			subsequent INVITE addressed to UE B	
2		₩,	±Ŷ		subsequent INVITE ✓ a Via header → the IBCF SIP URI of IMS A ✓ encrypted consecutive header entries ✓ a tokenized-by parameter ✓ a Record-Route header ✓ 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	

				Interop	perability Test Purpose		
Identif	ier:	TP_IMS_5	414_01	•	•		
Summ	ary:	When IBCF response	receives a	an initial IN	VITE request and it shall respond v	with a 100 (Trying) provisional	
IUT Ro	ole:	IMS B					
References:		TS 124 229 (V7.14.0) [1], clause 5.10.3.2 ¶4 (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 B configured for topology hid	ing	
	UE A	IMS A	IMS B	UE B			
Step		Direc	tion		Message		
1		₽	Ð		initial INVITE addressed to UE B		
2		ŶĿ.	Ą		100 response		

5.5 Messaging Procedures

5.5.1 Messaging at P-CSCF

					Test Purpose					
Identif	ier:	TP_IMS_5	050_01		-					
Summ	ary:		When the P-CSCF receives a MESSAGE request from a UE for which a Service-Route header list exists without topology hiding							
IUT Ro	ole:	IMS A								
Refere	ences:	TS 124 229 (V7.14.0) [1], clause 5.2.6.3 ¶53 (5 th 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					
		×			IMS A not configured for topology hiding					
	UE A	IMS A	IMS B	UE B						
Step		Direc	ction		Message	IF				
1		€		Ą	MESSAGE					
2		\$\psi\$	±₽		MESSAGE ✓ a Route header → the P-CSCF SIP URI of IMS A → the list of Service Route header URIs from registration x a P-Preferred-Identity header ✓ P-Asserted-Identity header ✓ an address of UE A ✓ the P-Charging-Vector header ✓ an icid parameter					

5.5.2 Messaging at S-CSCF

					Test Purpose					
Identif	ier:	TP_IMS_5	097_05		•					
Summ	ary:		S-CSCF must inserts orig-ioi parameter, remove access-network-charging-info parameter before sending MESSAGE over NNI							
IUT Ro	ole:	IMS A								
Refere	ences:	TS 124 229 (V7.14.0) [1], clause 5.4.3.2 ¶1			Config Ref:	CF_INT_CALL				
		Enti	ties		Condition	i				
	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		Message		IF			
1	₿	Ð			MESSAGE addressed to UE B					
2		\$	€Ŷ		MESSAGE addressed to UE B MESSAGE * a Route header → the S-CSCF SIP URI of IMS A √ a P-Charging-Vector header √ an icid 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	present for MESSAGE				erted-Identity header indicating a tel	or SIP URI whichever is	not
IUT Ro	ole:	IMS A					
References:		TS 124 22 clause 5.4	9 (V7.14.0) .3.2 ¶1	[1],	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 registered public identities containing a Tel URI and SIP URI		
	UE A	IMS A	IMS B	UE B			
Step		Direc	tion		Message		IF
1	₩,	ΣŶ			MESSAGE addressed to UE B		
2		₩	∌ੰ		MESSAGE ✓ 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	ier:	TP_IN	IS_5097_	_08		•	
Summ	ary:	S-CS0	CF uses E	ENUM/DI	NS to trai	nslate Tel URIs to SIP URIs in MESSAGE requests	
IUT Ro	ole:	IMS A				•	
Refere	nces:	TS 12	4 229 (V7	(V7.14.0) [1],		Config Ref: CF_INT_CALL	
	clause 5.4.3.2 ¶1			¶1			
	Entities					Condition	
	UE A	IMS A	DNS A	IMS B	UE B		
	✓	✓				UE A registered in IMS A	
				✓	✓	UE B registered in IMS B	
			1		1	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			Message	IF
						MESSAGE addressed to UE B	
1	₩	Ð				✓ a Request URI	
						→ a Tel URI	
2		₩,	÷			DNS Query	
		Y	Σ⁄			✓ the Tel URI E.164 Number	
						DNS Response	
3		€	¢ħ			✓ NAPTR Resource Record	
						→ the SIP URI of UE B	
						MESSAGE addressed to UE B	
						✓ a Request URI	
4		₿		Ð		→ a SIP URI of UE B	
						✓ a P-Charging-Vector header	
						* an access-network-charging-info parameter	

						Test Purpose	
Identif	ier:	TP_IM	IS_5097_	_10			
Summ	ary:	MESS	AGE har	dling by	S-CSCF	with matching filter criteria AS	
IUT Role: IMS B							
Refere	References: TS 124 229 (V7.14.0) [1],		1,	Config Ref: CF_ROAM_AS			
	clause 5.4.3.2 ¶1			∏ 1	-		
	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 visiting IMS 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		₩,	ΣŶ			MESSAGE addressed to UE A	
						MESSAGE	
2			₩,	Ð		✓ a Route header	
2			♦	□ □		→ the SIP URI of AS B	
						✓ a P-Charging-Function-Addresses header	

					Test Purpose		
Identif	ier:	TP_IMS_5	108_02		•		
Summ	ary:	Standalone	request; te	erminated	at the served user		
IUT Ro	ole:	IMS B	•				
Refere	ences:	TS 124 229 (V7.14.0) [1], clause 5.4.3.3 ¶1			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 A	IMS A	IMS B	UE B	The state of the s		
Step		Direc	tion		Message		IF
1		\$	£		MESSAGE addressed to UE B ✓ a P-Charging-Vector header ✓ an icid parameter		
2		€ _T	À		MESSAGE ✓ Route header → the S-CSCF SIP URI of IN ✓ a P-Charging-Vector header ✓ the same icid parameter × ioi parameters ✓ a Record-Route header ✓ the S-CSCF SIP URI of IMS		

					Test Purpose	
Identif	ier:	TP_IMS_5	108_06		·	
Summ	ary:	S-CSCF re	jects barred	d users on	MESSAGE	
IUT Ro	le:	IMS B	_			
Refere	nces:	TS 124 229 (V7.14.0) [1],			Config Ref: CF_INT_CALL	
		clause 5.4.3.3 ¶1				
	Entities				Condition	
	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		Direc	tion		Message	IF
					MESSAGE addressed to UE B	
1		♦	Ð		✓ a Request URI	
					→ a barred user in IMS B	
2	·	Ŷĸ	À		404 response	
			4			

					Test Purpose		
Identif	ier:	TP_IMS_5	117_01				
Summ	ary:	S-CSCF re transaction		ss-network	-charging-info parameterfrom 1xx re	esponse to standalone	
IUT Ro	ole:	IMS B					
References:		TS 124 229 (V7.14.0) [1], clause 5.4.3.3 ¶75 (after note 10)			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 a standalone re	equest	
	UE A	IMS A	IMS B	UE B			
Step		Direc	tion		Message		ਜ
1			Ŷ <u>.</u>	Ą	1xx response addressed to UE A		
2		Œ	ŶĦ		1xx response ✓ a P-Charging-Vector header x an access-network-charging-	-info parameter	

					Test Purpose	
Identif	ier:	TP_IMS_5	117_02			
Summ	ary:	S-CSCF re transaction		ss-network	-charging-info parameter from 2xx response to standalone	
IUT Ro	ole:	IMS B				
References:		TS 124 229 (V7.14.0) [1], clause 5.4.3.3 ¶75 (after note 10)			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 a standalone request	
	UE A	IMS A	IMS B	UE B		
Step		Direc	tion		Message	IF
1			ŶĿ.	Ą	2xx response addressed to UE A	
2		Œ	ф		2xx response ✓ a P-Charging-Vector header × an access-network-charging-info parameter	

					Test Purpose	
Identif	ier:	TP_IMS_5	117_05		•	
Summ	ary:	S-CSCF in	serts a sec	ond P-Asse	erted-Identity header in 1xx response from UE for initial reque	est
		indicating a	registered	SIP URI if	not present	
IUT Ro	ole:	IMS B				
Refere	nces:	TS 124 229	9 (V7.14.0)	[1],	Config Ref: CF_INT_CALL	
		clause 5.4.				
		(after note 10)				
		·	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 a SIP_URI	
	✓			✓	UE B has received a standalone request from UE A	
	UE A	IMS A	IMS B	UE B		
Step		Direc			Message	IF
1			Æ.	Ą	1xx response addressed to UE A	
					1xx response	
					✓ a P-Asserted-Identity header	
2		Ý L	<₽		→ 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 respon- not present	se from UE for initial reque	est	
IUT Ro	ole:	IMS B			•			
Refere	ences:	TS 124 229 clause 5.4. (after note	3.3 ¶75	[1],	Config Ref: CF_INT_CALL			
		Enti			Conditio	n		
	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 and a SIP_URI	containing a Tel_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			Ŷ Ŀ	À	2xx response addressed to UE A	1		
2		Œ	Ą		2xx response ✓ a P-Asserted-Identity header → the tel URI of UE B ✓ a P-Asserted-Identity header → the SIP URI of UE B	exx response ✓ a P-Asserted-Identity header → the tel URI of UE B ✓ a P-Asserted-Identity header		

					Test Purpose	
Identif	ier:	TP_IMS_5	118_01		• •	
Summ	ary:	S-CSCF in	clude term-	ioi parame	ter and restores orig-ioi in 200 responses to standalone req	uests
IUT Ro	ole:	IMS B		•		
Refere	ences:	TS 124 229	9 (V7.14.0)	[1],	Config Ref: CF_INT_CALL	
		clause 5.4. (4 th numbe				
		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 from UE A	
	UE A	IMS A	IMS B	UE B		
Step		Direc	tion		Message	IF
1			Ŷ <u>E</u>	Ą	200 response addressed to UE A	
					200 response	
					✓ a P-Charging-Vector header	
2		Ŷ Ŀ r	W.		✓ an orig-ioi parameter	
	<u>√</u> € ∜			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	ier:	TP_IN	IS_5097_	09		•		
Summ	ary:	Initial	request fo	or a dialo	g handlin	ng by S-CSCF with matching filter criteria AS		
IUT Ro	ole:	IMS B			_	<u> </u>		
Refere	ences:		4 229 (V7],	Config Ref: CF_ROAM_AS		
		clause	clause 5.4.3.2 ¶1					
		1040.4	Entities	40.0		Condition		
	UEA IMSA IMSB ASB UEB				OF B			
	✓	✓				UE A registered in IMS A		
			✓		✓	UE B registered in IMS B		
		\checkmark			✓	UE B visiting IMS 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		₩	Ð			initial INVITE addressed to UE A		
						initial INVITE		
						✓ a Route header		
						→ the SIP URI of AS B		
						✓ a P-Charging-Function-Addresses header		
2			₽	₽		✓ 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_5097_	13					
Summ	nary:				dlina by S	S-CSCF with matching filter criteria AS			
IUT R		IMS B			· J · J	<u> </u>			
Refere	ences:	TS 12	4 229 (V7	7.14.0) [1	1.	Config Ref:	CF_ROAM_AS		
			5.4.3.2 ¶		•				
			Entities	"		Condition	n		
	UEA IMSA IMSB ASB UEB				UE B				
	✓	✓				UE A registered in IMS A			
			✓		✓	UE B registered in IMS B			
		✓			✓	UE B visiting IMS A			
			✓	✓		IMS B configured with filter criteria	a to contact AS B		
			✓	✓		AS B within the trust domain of IM			
	UE A	IMS A	IMS B	AS B	UE B				
Step			Direction			Message		IF	
1		₩	Ð			PUBLISH sent by UE_B			
						PUBLISH			
						✓ a Route header			
						→ the SIP URI of AS B			
_			P	_		✓ a P-Charging-Function-Addresses header			
2			4	Ð		✓ 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_	03		•		
Summ	nary:	Reque	est for a ir	nitial dial	og termin	ated at the served user		
IUT R d	ole:	IMS B						
Refere	ences:		TS 124 229 (V7.14.0) [1], clause 5.4.3.3 ¶1			Config Ref: CF_ROAM_AS CF_INT_AS		
			Entities	"		Condition		
	UEA IMSA IMSB ASB UEB				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		₩	Ð			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	ier:	TP_IM	S_5108_	04		·	
Summ	ary:	Standa	alone req	uest; tern	ninated a	at the served user	
IUT Ro	ole:	IMS B	•				
Refere	References: TS 124 229 (V7.14.0) [1],],	Config Ref: CF_ROAM_AS	
	clause 5.4.3.3 ¶1					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	
	UE A	IMS A	IMS B	AS B	UE B		
Step			Direction			Message	IF
1		₿	Ď			MESSAGE addressed to UE B	
						MESSAGE	
						✓ a topmost Route header	
2	2 🖔 🕏			→ the SIP URI of AS B			
						✓ a Route header	
						→ the S-CSCF SIP URI of IMS B	

	•	Test Purpose												
	dentifier: TP_IMS_5108_06													
	ted at the served user (SUBSCRIBE)	g termin	nitial dialo	est for a ir	Reque	ary:	Summ							
	,				IMS B	ole:	IUT Ro							
	Config Ref: CF_ROAM_AS	1.	'.14.0) [1 [°]	4 229 (V7	TS 124	nces:	Refere							
	CF_INT_AS	•	/	5.4.3.3 9										
	Condition	Entities												
		UEA IMSA IMSB ASB UEB												
	JE A registered in IMS A				✓	✓								
	JE B registered in IMS A	✓			✓									
	MS B configured with filter criteria to contact AS B		✓	✓										
		UE B	AS B	IMS B	IMS A	UE A								
IF	Message	·		Direction			Step							
	SUBSCRIBE addressed to UE B			Ð	₽		1							
	SUBSCRIBE													
	✓ a topmost Route header													
	→ the SIP URI of AS B													
	✓ a Route header													
	→ the S-CSCF SIP URI of IMS B		Ð	₩,			2							
	✓ a P-Charging-Vector header			·										
	× a term-ioi parameter													
	Message SUBSCRIBE addressed to UE B 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	UE B	AS B	IMS B Direction		UEA	1							

	Test Purpose											
Identif	ier:	TP_IMS_5	109_01		•							
Summ	ary:	S-CSCF re	turns 408 c	r 5xx respo	onse to initial terminating INVITE w	hen there is no response f	rom AS					
		and filter c	riterion indic	cates the va	alue SESSION_TERMINATED							
IUT Ro	ole:	IMS B										
Refere	ences:	TS 124 22	9 (V7.14.0)	[1],	Config Ref:	CF_INT_CALL						
		clause 5.4.3.3 ¶53				CF_ROAM_CALL						
		(after 1 st nu	umbered lis	t)								
		Enti	ties		Condition	n						
	UE A	IMS A	IMS B	UE B								
	✓	✓			UE A registered in IMS A							
				×	UE B not registered							
			✓	✓	IMS B configured with a terminatir criterion for UE B indicating SESS INVITE							
	UE A	IMS A	IMS B	UE B	IIIVIIE							
Step	ULX	Direc	-	OL D	Message	;	IF					
1		₩,	ΣŶ		initial INVITE addressed to UE B							
2a		ŶE	Ą		408 response							
2b		Ŷ	Ą		5xx response							

						Test Purpose			
Identif	ier:	TP_IM	S_5110_	01		•			
Summ	ary:	Forwa	rd 200 fro	om AS on	final res	ponse to an initial request for a dia	log or a standalone request		
IUT Ro	ole:	IMS A				•	•		
Refere	References: TS 124 229 (V7.14.0) [1],],	Config Ref:	CF_INT_AS			
	clause 5.4.3.3 ¶56			CF_ROAM_AS					
		(after s	5 th dashe	d list)					
			Entities			Condition	n		
	UE A	AS A	IMS A						
	✓		\checkmark			UE A registered in IMS A			
				✓	✓	UE B registered in IMS B			
		✓	✓			IMS A configured with filter criteria	a to contact ASA		
	1				1	UE B has received 180 on initial r	equest for dialog from		
	•				•	UE A			
	UE A	AS A	IMS A	IMS B	UE B				
Step	Step Direction					Message		IF	
1		\$	Ď			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 t	he not registered served u	ser	
IUT Ro	ole:	IMS B			<u> </u>	•		
Refere	nces:	TS 124 229 clause 5.4. (2 nd numbe	3.3 ¶59	[1],	Config Ref:	CF_INT_AS CF_ROAM_AS		
		Enti	ties		Condition	ì		
	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	tion		Message		IF	
1		₩	ΣŶ		nitial INVITE addressed to UE B			
2		4xx response						

					Test Purpose			
Identif	ier:	TP_IMS_5	114_02		-			
Summ	ary:	S-CSCF sl	nould turn d	lown stand	alone request when terminated at t	he not registered served us	ser	
IUT Ro	ole:	IMS B			•	-		
Refere	ences:	TS 124 229 clause 5.4. (2 nd number	9 (V7.14.0) 3.3 ¶59 ered list)	[1],	Config Ref:	CF_INT_CALL CF_ROAM_CALL		
		Enti	ties		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 cri	teria to contact any AS		
	UE A	IMS A	IMS B	UE B		-		
Step	Step Direction				Message		IF	
1		₿	Ð		MESSAGE addressed to UE B			
2		♦ 4xx response						

Test Purpose										
Identif	ier:	TP_IN	S_5115_	07						
Summ	ary:	S-CSC	CF include	e term-ioi	paramet	ter and restores orig-ioi in 1xx responses from AS to initial rec	quests			
		in term	ninating n	etwork						
IUT Ro	le:	IMS B								
Refere	References: TS 124 229 (V7.14.0) [1],],	Config Ref: CF_ROAM_AS				
	clause 5.4.3.3 ¶65			CF_INT_AS						
	(3 rd numbered list)									
			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								
	\			\checkmark		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				
						1xx response				
						✓ a P-Charging-Vector header				
2		Ŷ ,	₽ Z			✓ an orig-ioi parameter				
		<u>√</u>			operator identifier of IMS A					
						√ a term-ioi parameter				
						operator identifier of IMS B				

						Test Purpose		
Identif	ier:	TP_IN	S_5115_	08		•		
Summ	ary:		CF include		i parame	ter and restores orig-ioi in 2xx resp	onses from AS to initial req	luests
Clause	e:		_					
Refere	References:		clause 5.4.3.3 ¶65 (3 rd numbered list)			Config Ref:	CF_ROAM_AS CF_INT_AS	
IUT Ro						Test Case:	TC_IMS_5115_08	
			Entities			Conditio	n	
	UE A	IMS A	IMS B	AS B	UE B			
	✓	✓			UE A registered in IMS A			
	✓			✓		AS B has received an initial reque	est for a dialog from UE A	
	UE A	IMS A	IMS B	AS B	UE B		-	
Step			Direction		<u> </u>	Message	е	IF
1			Ŷz.	4		2xx response addressed to UE A	\	
2	2 & &		 2xx response ✓ a P-Charging-Vector header ✓ an orig-ioi parameter → operator identifier of IMS ✓ a term-ioi parameter → operator identifier of IMS 					

						Test Purpose				
Identifier:TP_IMS_5118_02Summary:S-CSCF include term-ioi parameter and restores orig-ioi in 200 responses from AS to standa										
Summ	ary:	S-CSC reques		e term-ioi	paramet	ter and restores orig-ioi in 200 responses from AS to sta	indalone			
IUT Ro	ole:	IMS B								
Refere	References:		4 229 (V7 5.4.3.3 ¶ mbered I	[76 ⁻],	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 a standalone request from UE A				
	UE A	IMS A	IMS B	AS B	UE B					
Step			Direction			Message	IF			
1			Ŷ Ŀ	ŶĮ.		200 response addressed to UE A				
2	2 ♣ ₺			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						

						Test Purpose			
Identif	ier:	TP_IM	S_5302_	01		•			
Summ	ary:	The S-	-CSCF sh	all retain	the the	access-network-charging-info paramete	r in the P-Charging-Ve	ector	
			r a 1xx oı						
IUT Ro	ole:	IMS B							
Refere	References: TS 124 229 (V7.14.0) [1],],	Config Ref: CF_	ROAM_AS			
	clause 5.4.3.3 ¶97				CF_	_INT_AS			
		(after 7	7 th numbe	ered list)					
			Entities			Condition			
	UE A	IMS A	IMS B	AS B	UE B				
	✓	✓				JE A registered in IMS A			
			✓			UE B registered in IMS B			
	✓				1	UE B has received a subsequent reque	est in a dialog from		
					·	UE A			
			✓	✓		IMS B configured with filter criteria to c	ontact AS B		
			\checkmark	✓		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			
						2xx response			
2			₽,	∌		✓ a P-Charging-Vector header			
2			4	ਬੋ		✓ an access-network-charging-info)		
						parameter			

	Test Purpose											
Identif	ier:	TP_IM	S_5302	02								
Summ	ary:	The S-	-CSCF re	ceives a	1xx or 2x	xx response and not AS in same trust domain then it shall ren	nove					
	-					parameter in the P-Charging-Vector header						
IUT Ro	ole:	IMS B										
Refere	nces:	TS 124	4 229 (V7	'.14.0) [1 ⁻	Ι,	Config Ref: CF_ROAM_AS						
		clause	5.4.3.3 ¶	[97		CF_INT_AS						
	(after 7 th numbered list)											
			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				1	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 not within the trust domain						
	UE A	IMS A	IMS B	AS B	UE B							
Step			Direction			Message	IF					
1		₽	Ď			2xx response addressed to UE A						
						2xx response						
2				✓ a P-Charging-Vector header								
		\$ \$			an access-network-charging-info							
						parameter						

				Test Purpose		
Identif	ier:	TP_IMS_5206_01		•		
Summ	ary:	REGISTER reque	st if there is at	least on AS that matches Filter Crite	eria	
IUT Ro	le:	IMS B				
Refere	nces:	TS 124 229 (V7.14	4.0) [1],	Config Ref:	CF_ROAM_AS	
		clause 5.4.1.2.2 ¶	7			
		(item 13 in 2 nd nun	nbered list)			
		Entities		Condition	ı	
	IMS B	AS B	UE B			
		✓	✓	UE B configured with filter criteria	to contact AS B	
	✓		✓	IMS B has challenged with a 401 request of UE B	response the REGISTER	
	IMS B	AS B	UE B			
Step		Direction		Message		IF
				protected REGISTER		
1	€ ₩		⇔	✓ an Authorization header		
				✓ an integrity-protected param	neter set yes	
2	\$	र्च		third party REGISTER		
3	₩		Ď	200 response		

						Test Purpose				
Identifier: TP_IMS_5308_01										
Summ	arv:				rk-charg	ing-info parameter from the P-Charging-Vector header in 180	to AS			
IUT Ro		IMS A			ssg	gg				
Refere	nces:	TS 12	4 229 (V7	7.14.0) [1	1.	Config Ref: CF_INT_AS				
			5.4.4.2.2		1,	CF_ROAM_AS				
			Entities			Condition				
	UE A AS A IMS A IMS B UE B		UE B							
	✓		✓			JE 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			Message	IF			
						180 response				
1	₩,		Ð			√ a P-Charging-Vector header				
•	>		Σ/			√ an access-network-charging-info				
						parameter				
						180 response				
2	2		[⟨] Å			✓ a P-Charging-Vector header				
2		Ý£.	4			✓ an access-network-charging-info				
						parameter				

Test Purpose										
Identif	ier:	TP_IM	S_5308_	02		•				
Summ	ary:	Retain	the acce	ess-netwo	ork-charg	ing-info parameter from the P-Charging-Vector header in 200	to AS			
IUT Ro	ole:	IMS A								
Refere	References: TS 124 229 (V7.14.0) [1],],	Config Ref: CF_INT_AS						
	clause 5.4.4.2.2 ¶2			CF_ROAM_AS						
			Entities			Condition				
	UEA ASA IMSA IMSB UEB				UE B					
	✓	√				UE A registered in IMS A				
					✓	UE B registered in IMS B				
		\checkmark	✓			IMS A configured with filter criteria to contact AS A				
		✓			✓	AS A has received 180 on initial request for dialog from LIE				
	UE A	AS A	IMS A	IMS B	UE B					
Step			Direction		•	Message	IF			
1	\$		र्च			200 response ✓ a P-Charging-Vector header ✓ an access-network-charging-info parameter				
2	€ ₽			200 response ✓ a P-Charging-Vector header ✓ an access-network-charging-info parameter						

						Test Purpose		
Identif	ier:	TP IN	IS_5310_	01		•		
Summ	arv:				twork-ch	arging-info parameter from the P-C	harging-Vector	
IUT Ro		IMS B						
Refere	nces:		4 229 (V7	7.14.0) [1	1.	Config Ref:	CF_ROAM_AS	
			5.4.6.1.2		,	3		
		0.0.00	Entities	- 11 ·		Condition	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 UI		
			✓	√		IMS B configured with filter criteria		
				✓		AS B is within the trust domain of		
	UE A	IMS A	IMS B	AS B	UE B	7 to B to William the tract demain of		
Step	<u></u>		Direction		<u> </u>	Message	<u> </u>	IF
						subsequent INVITE		
						√ a P-Charging-Vector header		
1		₩,	Ð			✓ an access-network-charging	a-info	
						parameter	5	
						✓ a P-Access-Network-Info header		
						INVITE		
	_ M		✓ a P-Charging-Vector header					
2			₩	Ď		✓ an access-network-charging	g-info	
						parameter		

						Test Purpose		
Identif	fier:	TP IN	IS_5310_	02		•		
Summ	nary:				-network	-charging-info parameter from the I	P-Charging-Vector	
IUT R	ole:	IMS B					<u> </u>	
Refere	ences:	TS 12	4 229 (V7	7.14.0) [1	1,	Config Ref:	CF_ROAM_AS	
		clause	5.4.6.1.2	2 ¶1 (-			
			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		
	✓				✓	AS B has initiated a dialog with UI		
			✓	✓		IMS B configured with filter criteria		
				×		AS B is not within the trust domain	n of IMS B	
	UE A	IMS A	IMS B	AS B	UE B			
Step			Direction			Message	•	IF
						subsequent INVITE		
						✓ P-Charging-Vector header		
1		♦	Ď			✓ an access-network-charging	g-info	
						parameter		
						✓ a P-Access-Network-Info header		
						INVITE		
2			₽>	_		✓ a P-Charging-Vector header		
2			4	Ð		✓ no access-network-charging	g-info	
						parameter		

						Test Purpose		
Identif	ier:	TP_IM	S_5310_	03		•		
Summ	ary:	Retain	ing in UP	DATE the	e access	-network-charging-info parameter from the P-Charging-Vec	tor	
IUT Ro	ole:	IMS B						
Refere	ences:		4 229 (V7 5.4.6.1.2],	Config Ref: CF_ROAM_AS		
			Entities			Condition		
	UEA IMSA IMSB ASB UEB				UE B			
	✓	✓				UE A registered in IMS A		
			\checkmark		\checkmark	UE B registered in IMS B		
	✓				\checkmark	UE 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 IMS B		
	UE A	IMS A	IMS B	AS B	UE B			
Step			Direction			Message	IF	
1		₩	र्च			subsequent UPDATE ✓ a P-Charging-Vector header ✓ an access-network-charging-info parameter		
2	2 \$ \$			 UPDATE ✓ a P-Charging-Vector header ✓ an access-network-charging-info parameter 				

	Test Purpose dentifier: TP IMS 5310 04												
Identif	ier:	TP_IM	IS_5310_	04		-							
Summ	ary:	Not re	taining in	UPDATE	the acce	ess-network-charging-info paramete	er from the P-Charging-Ve	ector					
IUT Ro	ole:	IMS B				5 5 1	5 0						
Refere	ences:		4 229 (V7 5.4.6.1.2],	Config Ref:	CF_ROAM_AS						
			Entities	"		Condition	n						
	UEA IMSA IMSB ASB UEB			UE B									
	✓	✓				UE A registered in IMS A							
			✓		✓	UE B registered in IMS B							
	✓				✓	UE B has initiated a dialog with U							
			✓ ✓			IMS B configured with filter criteria							
				×		AS B is not within the trust domain							
	UE A	IMS A	IMS B	AS B	UE B								
Step			Direction		•	Message	•	IF					
						subsequent UPDATE							
1		P	₹Ŷ			✓ P-Charging-Vector header							
		⇒	₽⁄			✓ an access-network-charging	g-info						
						parameter							
						UPDATE							
•			М.	^		✓ a P-Charging-Vector header							
2			₽	Ð		* access-network-charging-in	fo						
						parameter							

						Test Purpose	
Identif	ier:	TP_IM	S_5312_	01		•	
Summ	ary:	Retain	ing the a	ccess-ne	twork-ch	arging-info parameter from the P-Charging-Vector on 200 (Or	()
	-	respor	nse				
IUT Ro	IUT Role: IMS B						
Refere	References: TS 124 229 (V7.14.0)		'.14.0) [1 ⁻],	Config Ref: CF_ROAM_AS		
		clause	ause 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		
		/			✓	UE B registered in IMS B	
	✓	✓		\checkmark	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			Message	IF
						200 response addressed to UE B	
1		₽	Δ.			✓ a P-Charging-Vector header	
•		→	\$ \$\Delta \Delta \Big			√ an access-network-charging-info	
						parameter	
						200 response	
2			₩,	Ð		✓ a P-Charging-Vector header	
						✓ an access-network-charging-info parameter	

						Test Purpose					
Identifier:		TP_IN	TP_IMS_5313_01								
Summary:			Retaining the access-network-charging-info parameter from the P-Charging-Vector on any SIP request								
IUT Role:		IMS B	IMS B								
References:		TS 124 229 (V7.14.0) [1], clause 5.4.6.1.3 ¶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 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			रिंद	Ą		a response ✓ a P-Charging-Vector header ✓ an access-network-charging-info parameter					
2		Ŷ s	À			The response ✓ a P-Charging-Vector header ✓ an access-network-charging-info parameter					

						Test Purpose					
Identifier: TP_IMS_5313_02						·					
Summ	ary:		Not retaining the access-network-charging-info parameter from the P-Charging-Vector on any SIP request								
Clause	e:	1									
References:			4 229 (V7 5.4.6.1.3	7.14.0) [1 3.¶2],	Config Ref: CF_INT_AS					
IUT Ro	ole:	IMS A		J -		Test Case: TC_IMS_5313_02					
			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 initiated a dialog with UE B					
		×				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			Ŷz.	Ŷħ		a response ✓ a P-Charging-Vector header ✓ an access-network-charging-info parameter					
2		र्देद	À			the response ✓ a P-Charging-Vector header * access-network-charging-info parameter					

Test Purpose									
Identifier:		TP_IM	TP_IMS_5320_01						
Summary:			S-CSCF is failing to receive a SIP response or receive 408 (Request Timeout) response or a 5xx response from the AS						
IUT Role:		IMS B	IMS B						
References:		TS 124 229 (V7.14.0) [1], clause 5.4.3.2 ¶53 (after note 8)				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			
				✓	✓	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	Direction					Message	IF		
1			€ ∥	4		no response			
2a			₩		Ď	408 response			
2b			₩		Ŷ	5xx response			

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_18601101v020301p0.zip which accompanies the present document. The raw text files have 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.

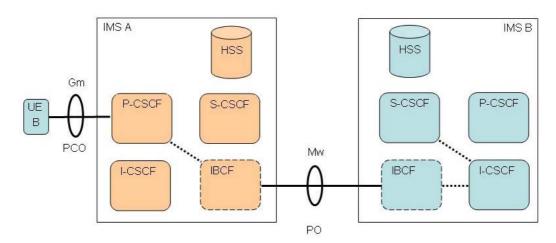
• ROAM: UE B is roaming in home network of UE A.

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

Note that all test configurations assume that observable interfaces are indicated as a solid line, non-observable interfaces as indicated dashed lines, and tat 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 Home network A (ROAM), UE_B not yet registered (REG), neither UE_A nor AS involved, IBCF may be involved Test configuration for:

Registration requests and responses from UE_B

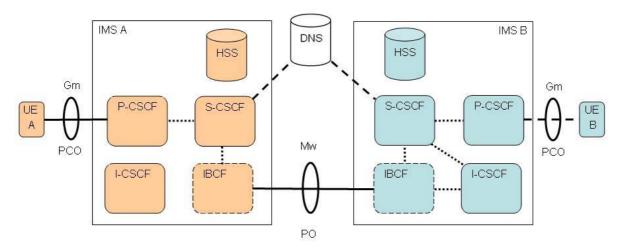
Example:

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 may be involved

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)

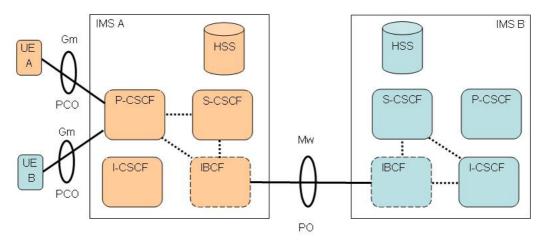
Example:

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 may be involved lost configuration for:

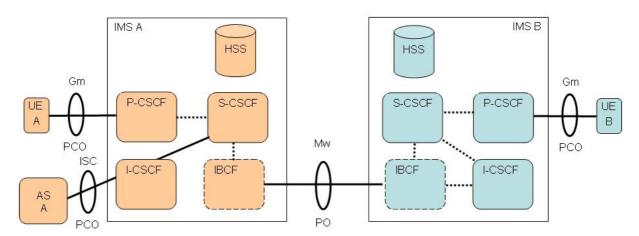
Requests and responses between UEB and UE_A in call (CALL) and messaging scenarios Example:

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, only AS for UE_A (AS), IBCF may be involved

Test configuration for:

Requests and responses between AS_A and UEs

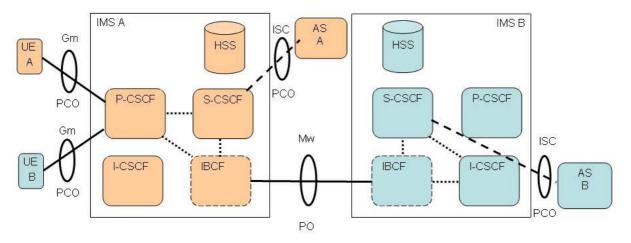
Example:

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

Roaming Application Server

CF_ROAM_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 may be involved

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

History

Document history				
V1.1.1	March 2009	Publication		
V2.2.1	March 2009	Publication		
V2.3.1	April 2010	Publication		