Source:	**TSG CT WG1**
Title:	**CRs on Rel-6 WI "PRESNC" for TS 24.141**
Agenda item:	**9.2**
Document for:	**APPROVAL**

This document contains 9 **CRs for Rel-6 WI "PRESNC"**, that have been agreed by TSG CT WG1 meeting #38 and forwarded to TSG CT Plenary meeting #28 for approval.

TDoc #	Tdoc Title	Spec	CR #	Rev	CAT	C_Version	WI	Rel
C1-050611	SPI to SPT	24.141	41		F	6.3.0	PRESNC	Rel-6
C1-050613	Reference update: event-list	24.141	43		F	6.3.0	PRESNC	Rel-6
C1-050614	Reference update: filter	24.141	44		F	6.3.0	PRESNC	Rel-6
C1-050615	Reference update: xcap	24.141	45		F	6.3.0	PRESNC	Rel-6
C1-050616	Reference update: xcap-list-usage	24.141	46		F	6.3.0	PRESNC	Rel-6
C1-050617	Reference update: policy	24.141	47		F	6.3.0	PRESNC	Rel-6
C1-050618	Reference update: config-framework	24.141	48		F	6.3.0	PRESNC	Rel-6
C1-050690	Editorial corrections	24.141	40	1	F	6.3.0	PRESNC	Rel-6
C1-050691	xcap-change substitution	24.141	42	1	F	6.3.0	PRESNC	Rel-6

CR-Form-v7.1

CHANGE REQUEST

| ⌘ | **24.141** CR **41** | ⌘**rev** | **-** | ⌘ | Current version: | **6.3.0** | ⌘ |

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐　　ME ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	SPI to SPT

Source:	⌘	Nokia

Work item code:	⌘	PRESNC		**Date:**	⌘	12/04/2005

Category:	⌘	**F**		**Release:**	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*
Rel-7 *(Release 7)*

Reason for change:	⌘	Outdated 'Service Points of Interest' term in the specification

Summary of change:	⌘	'Service Points of Interest' to 'Service Point Trigger'

Consequences if not approved:	⌘	Outdated term in specification

Clauses affected:	⌘	A.3.2.1, A.3.4.1, A.3.5 (not the complete clauses are shown)

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

A.3.2.1 Successful subscription

Figure A.3.2.1-1: Watcher subscribing for presence information

Figure A.3.2.1-1 shows a watcher subscribing to presence event notification about a presentity. The presentity is in a different IM CN subsystem. The details of the signalling flows are as follows:

1. **SUBSCRIBE request (UE (watcher) to P-CSCF) - see example in table A.3.2.1-1**

    A watcher agent in a UE wishes to watch a presentity, or certain presence information of the presentity. To initiate a subscription, the UE generates a SUBSCRIBE request containing the "presence" event that it wishes to be notified of, together with an indication of the length of time this periodic subscription should last and the support for partial notification.

Table A.3.2.1-1: SUBSCRIBE request (UE (watcher) to P-CSCF)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKnashds7
Max-Forwards: 70
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
Route: <sip:pcscf1.visited1.net:7531;lr;comp=sigcomp>, <sip:orig@scscf1.home1.net;lr>
P-Preferred-Identity: <sip:user1_public1@home1.net>
Privacy: none
From: <sip:user1_public1@home1.net>;tag=31415
To: <sip:user2_public1@home2.net>
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 61 SUBSCRIBE
Require: sec-agree
Proxy-Require: sec-agree
Security-Verify: ipsec-3gpp; q=0.1; alg=hmac-sha-1-96; spi-c=98765432; spi-s=87654321; port-
      c=8642; port-s=7531
Event: presence
Expires: 7200
Accept: application/pidf+xml;q=0.3, application/pidf-partial+xml;q=1
Contact: <sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp>
Content-Length: 0
```

Request-URI: Public user identity whose events the subscriber subscribes to.

Event: This field is populated with the value "presence" to specify the use of the presence package.

Accept: This field is populated with the value 'application/pidf+xml' and 'application/pidf-partial+xml', latter one with higher preference.

To: Same as the Request-URI.

2.   **SUBSCRIBE request (P-CSCF to S-CSCF) - see example in table A.3.2.1-2**

The P-CSCF looks up the serving network information for the public user identity that was stored during the registration procedure. The SUBSCRIBE request is forwarded to S-CSCF. A Route header is inserted into SUBSCRIBE request. The information for the Route header is taken from the service route determined during registration.

Table A.3.2.1-2: SUBSCRIBE request (P-CSCF to S-CSCF)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP pcscf1.home1.net;branch=z9hG4bK240f34.1, SIP/2.0/UDP
      [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKnashds7
P-Access-Network-Info:
Max-Forwards: 69
P-Asserted-Identity: <sip:user1_public1@home1.net>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"
Privacy:
Route: <sip:orig@scscf1.home1.net;lr>
Record-Route: <sip:pcscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Expires:
Accept:
Contact:
Content-Length:
```

3.   **Evaluation of initial filter criteria**

S-CSCF#1 validates the service profile of this subscriber and evaluates the initial filter criteria. For this example, assume no Application Server involvement.

4.   **SUBSCRIBE request (S-CSCF to I-CSCF) - see example in table A.3.2.1-4**

S-CSCF#1 performs an analysis of the destination address, and determines the network operator to whom the destination subscriber belongs. Since the originating operator does not desire to keep their internal configuration hidden, S-CSCF#1 forwards the SUBSCRIBE request directly to the I-CSCF in the destination network.

Table A.3.2.1-4: SUBSCRIBE (S-CSCF to I-CSCF)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK351g45.1, SIP/2.0/UDP
      pcscf1.home1.net;branch=z9hG4bK240f34.1, SIP/2.0/UDP
      [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;;branch=z9hG4bKnashds7
Max-Forwards: 68
P-Asserted-Identity: <sip:user1_public1@home1.net>, <tel:+1-212-555-1111>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"; orig-ioi=home1.net
Privacy:
Record-Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Expires:
Accept:
Contact:
Content-Length:
```

5.   **Cx: User Location Query procedure**

The I-CSCF sends a query to the HSS to find out the S-CSCF of the called user. The HSS responds with the address of the current S-CSCF for the terminating subscriber.

For detailed message flows see 3GPP TS 29.228 [10].

Table A.3.2.1-5a provides the parameters in the SIP SUBSCRIBE request (flow 4), which are sent to the HSS.

Table A.3.2.1-5a: Cx: User registration status query procedure (I-CSCF to HSS)

Message source and destination	Cx: Information element name	Information source in SIP SUBSCRIBE	Description
I-CSCF to HSS	User Public Identity	Request-URI	This information element indicates the public user identity

Table A.3.2.1-5b provides the parameters sent from the HSS that need to be mapped to the SIP SUBSCRIBE request (flow 6) and sent to the S-CSCF.

Table A.3.2.1-5b: Cx: User registration status query procedure (HSS to I-CSCF)

Message source and destination	Cx: Information element name	Mapping to SIP header in SIP SUBSCRIBE	Description
HSS to I-CSCF	S-CSCF name	Route header field	This information indicates the serving CSCF's name of that user

6. **SUBSCRIBE request (I-CSCF to S-CSCF) - see example in table A.3.2.1-6**

The I-CSCF forwards the SUBSCRIBE request to the S-CSCF (S-CSCF#2) that will handle the termination.

Table A.3.2.1-6: SUBSCRIBE request (I-CSCF to S-CSCF)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP icscf2_s.home2.net;branch=z9hG4bK871y12.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK351g45.1, SIP/2.0/UDP
     pcscf1.home1.net;branch=z9hG4bK240f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKnashds7
Max-Forwards: 67
P-Asserted-Identity:
P-Charging-Vector:
Privacy:
Route: <sip:scscf2.home2.net;lr>
Record-Route:
From:
To:
Call-ID:
CSeq:
Event:
Expires:
Accept:
Contact:
Content-Length:
```
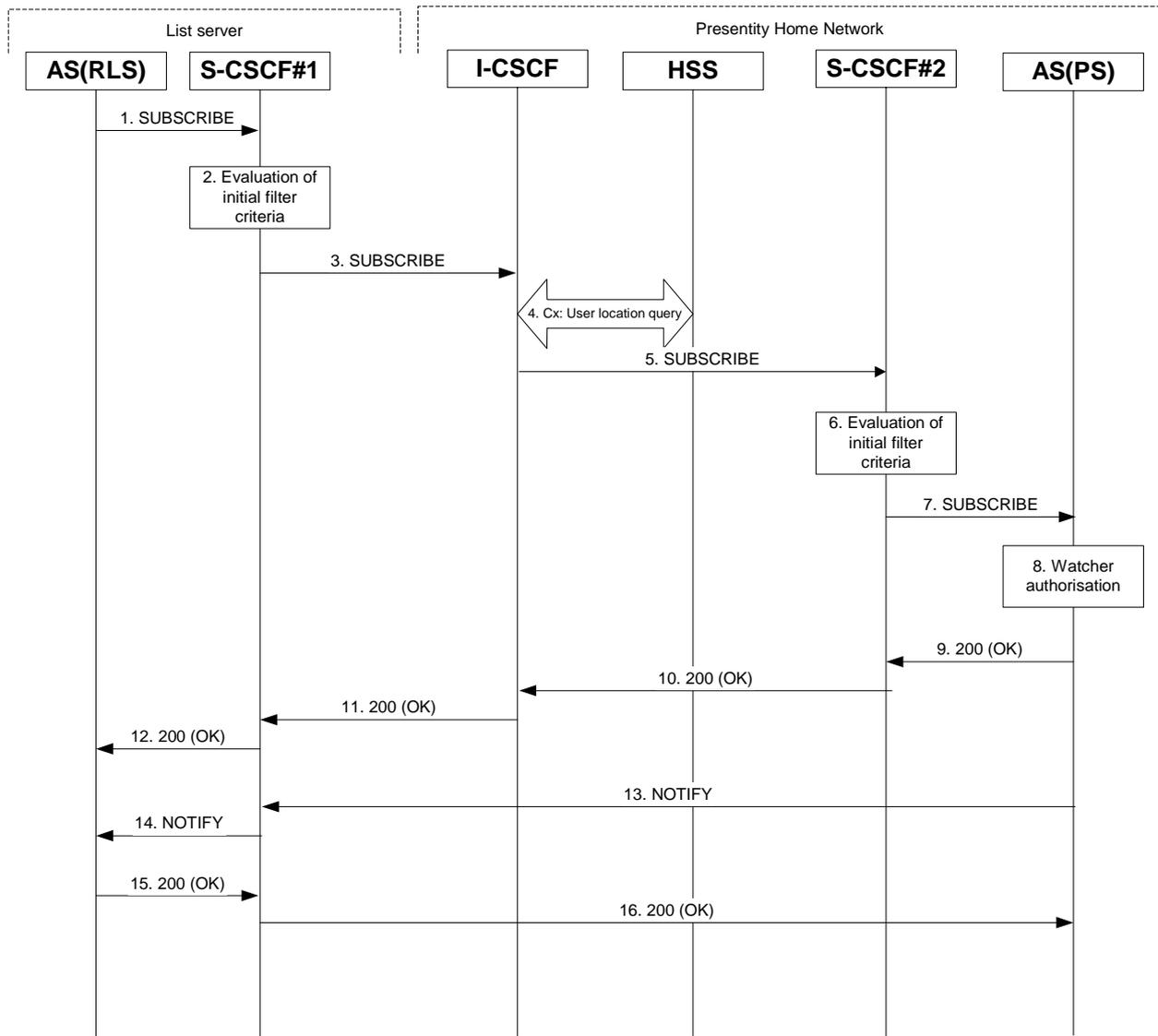
NOTE: The I-CSCF does not add itself to the Record-Route header, as it has no need to remain in the signalling path for the subsequent requests.

7. **Evaluation of initial filter criteria**

S-CSCF#2 validates the service profile of this subscriber and evaluates the initial filter criteria. For sip:user2_public1@home2.net S-CSCF#2 has termination initial filter criteria with ~~s~~Service ~~p~~Point~~s of interest~~ Trigger of Method = SUBSCRIBE and Event = "presence" that informs the S-CSCF to route the SUBSCRIBE request to the Application Server ps.home2.net. The S-CSCF#2 has preconfigured information not to create a Record-Route entry for this request.

----------------NEXT CHANGE--------------

A.3.4.1 Successful subscription

Figure A.3.4.1-1 RLS subscribing to presentities in different network

Figure A.3.4.1-1 shows the RLS subscribing to presence event notification about a presentity. The presentity is in a different IM CN subsystem. The details of the signalling flows are as follows:

1.   **SUBSCRIBE request (RLS to S-CSCF) – see example in table A.3.4.1-1**

     The RLS resolves the watcher's resource address (the address is received according to subclause A.3.3) and subscribes to presence event notification at all the presentities that are represented by the resource list SIP URI. The home network of these presentities can be different or in the same network, as the RLS. In this example only a single subscription is shown where the home network of the presentity is another network. Subscriptions to other presentities follow a similar procedure. To initiate a subscription, the RLS generates a SUBSCRIBE request containing the "presence" event that it wishes to be notified of, together with an indication of the length of time this periodic subscription should last. The RLS sends the SUBSCRIBE request to the S-CSCF of "sip:user1_public1@home1.net" (S-CSCF#1). The address of S-CSCF#1 is either remembered from previous transactions (when "sip:user1_public1@home1.net" has subscribed for the resource list) or queried by the RLS using the Sh interface.

Table A.3.4.1-1 SUBSCRIBE request (RLS to S-CSCF)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP rls.home1.net;branch=z9hG4bKehuefdam
Max-Forwards: 70
Route: <sip:scscf1.home1.net;lr>
P-Asserted-Identity: <sip:user1_public1@home1.net>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=323551024"; orig-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
        ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
From: <sip:user1_public1@home1.net>;tag=31415
To: <sip:user2_public1@home2.net>
Call-ID: q987a9a87g087abgf7qyg7ag
CSeq: 123 SUBSCRIBE
Event: presence
Expires: 7200
Accept: application/pidf+xml
Contact: <sip:rls.home1.net>
Content-Length: 0
```

Request-URI:	Public user identity whose events the RLS subscribes to.
P-Charging-Vector:	The RLS populates the icid parameter with a new globally unique value and populates the originating Inter Operator Identifier (IOI) parameter with the identifier of its own network of RLS.
P-Charging-Function-Addresses:	The RLS populates the P-Charging-Function-Addresses header field to be passed to the S-CSCF.
To:	Same as the Request-URI.
Event:	This field is populated with the value "presence" to specify the use of the presence package.
Accept:	This field is populated with the value "application/pidf+xml".

2. **Evaluation of initial filter criteria**

   S-CSCF#1 validates the service profile of this subscriber and evaluates the initial filter criteria. For this example, assume no application server involvement.

3. **SUBSCRIBE request (S-CSCF to I-CSCF) – see example in table A.3.4.1-3**

   S-CSCF#1 performs an analysis of the destination address, and determines the network operator to whom the destination subscriber belongs. S-CSCF#1 forwards the request to the I-CSCF.

Table A.3.4.1-3 SUBSCRIBE request (S-CSCF to I-CSCF)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bKehuehjgt, SIP/2.0/UDP
        rls.home1.net;branch=z9hG4bKehuefdam
Max-Forwards: 69
Record-Route: <sip:orig@scscf1.home1.net;lr>
P-Asserted-Identity:
P-Charging-Vector:
From:
To:
Call-ID:
CSeq:
Event:
Expires:
Accept:
Contact:
Content-Length:
```

P-Charging-Vector:	The S-CSCF stores the originating Inter Operator Identifier (IOI) parameter received.

4. **Cx: User Location Query procedure**

The I-CSCF sends a query to the HSS to find out the S-CSCF of the presentity. The HSS responds with the address of the current S-CSCF for the presentity.

For detailed message flows see 3GPP TS 29.228 [10].

Table A.3.4.1-4a provides the parameters in the SIP SUBSCRIBE request (flow 3), which are sent to the HSS.

Table A.3.4.1-4a: Cx: User registration status query procedure (I-CSCF to HSS)

Message source and destination	Cx: Information element name	Information source in SIP SUBSCRIBE	Description
I-CSCF to HSS	User Public Identity	Request-URI	This information element indicates the public user identity

Table A.3.4.1-4b provides the parameters sent from the HSS that need to be mapped to SIP SUBSCRIBE request (flow 5) and sent to the S-CSCF.

Table A.3.4.1-4b: Cx: User registration status query procedure (HSS to I-CSCF)

Message source and destination	Cx: Information element name	Mapping to SIP header in SIP SUBSCRIBE	Description
HSS to I-CSCF	S-CSCF name	Route header field	This information indicates the serving CSCF's name of that user

5. **SUBSCRIBE request (I-CSCF to S-CSCF) - see example in table A.3.4.1-5**

The I-CSCF forwards the SUBSCRIBE request to the S-CSCF#2 that will handle the termination.

**Table A.3.4.1-5: SUBSCRIBE request (I-CSCF to S-CSCF)**

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP icscf2_s.home2.net;branch=z9hG4bKj5hgrt2o, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bKehuehjgt, SIP/2.0/UDP
     rls.home1.net;branch=z9hG4bKehuefdam
Max-Forwards: 68
P-Asserted-Identity:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=323551024"; orig-ioi=home1.net;
Route: <sip:scscf2.home2.net;lr>
Record-Route:
From:
To:
Call-ID:
CSeq:
Event:
Expires:
Accept:
Contact:
Content-Length:
```

6. **Evaluation of initial filter criteria**

S-CSCF#2 validates the service profile of this subscriber and evaluates the initial filter criteria. For sip:user2_public1@home2.net the S-CSCF has Termination initial Filter Criteria with Service Point~~s of Interest~~ Trigger of Method = SUBSCRIBE AND Event = "presence"that informs the S-CSCF to route the SUBSCRIBE request to the Application Server ps.home2.net. The S-CSCF#2 has preconfigured information not to create a Record-Route entry for this request.

----------------NEXT CHANGE---------------

A.3.5   Network based watcher subscribing on behalf of IMS watcher to IMS presentities
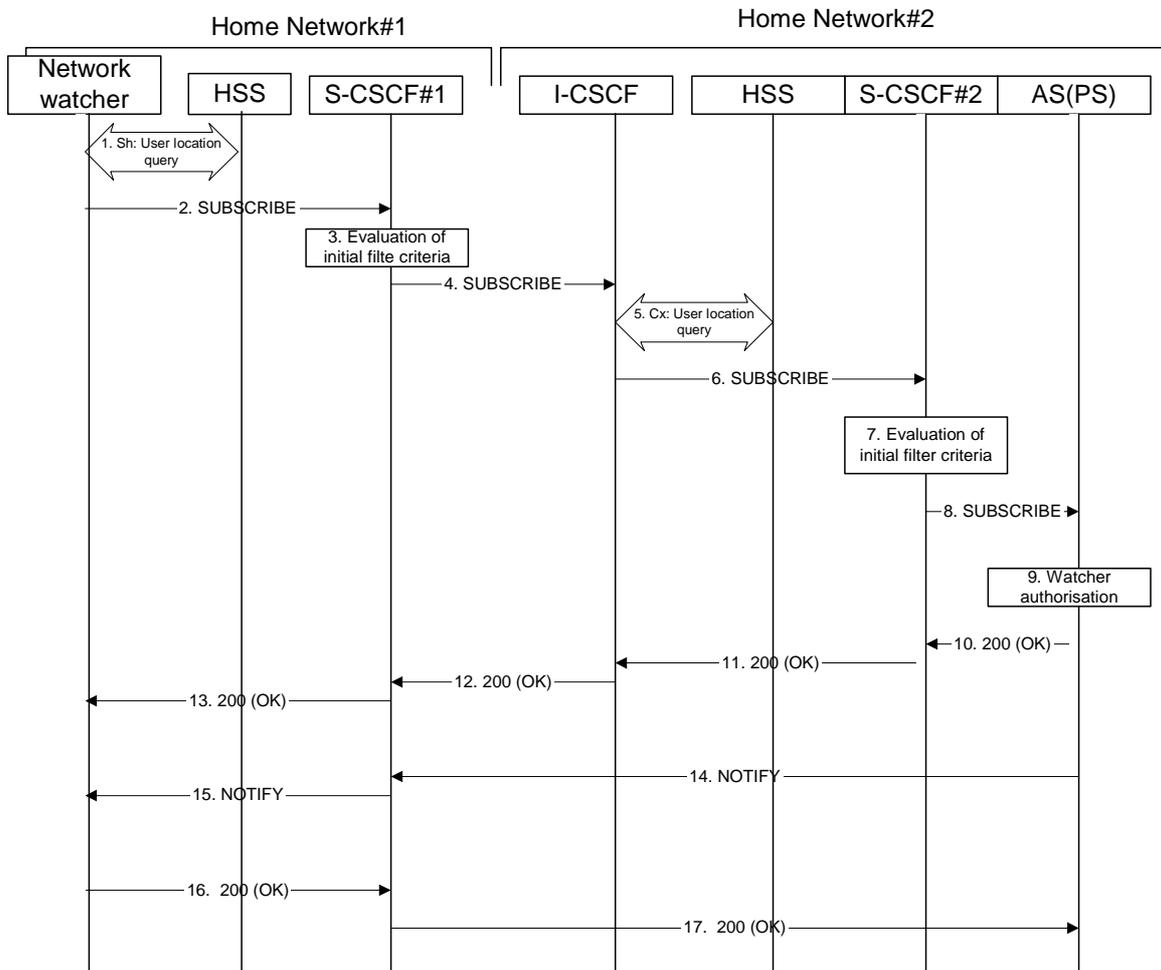
**Figure A.3.5-1: Network based watcher subscribing on behalf of IMS watcher
for presence information of IMS presentities**

Figure A.3.5-1 shows a trusted network based watcher subscribing on behalf of an IMS watcher to presence event notification about an IMS based presentity. The presentity is in a different IM CN subsystem than the network based watcher and the signalling flow assumes that the IMS watcher on whose behalf the network based watcher subscribes is registered to the IMS network. The details of the signalling flows are as follows:

1.   **Sh: User Location Query procedure**

       The network based watcher sends a query to the HSS to find out the S-CSCF of the user on whose behalf the subscription is initiated. The HSS responds with the address of the current S-CSCF for the originating subscriber.

2. **SUBSCRIBE request (Network based watcher to S-CSCF) - see example in table A.3.5-2**

    The SUBSCRIBE request is constructed and forwarded to S-CSCF. The S-CSCF is inserted into the Route header of the SUBSCRIBE request.

Table A.3.5-2: SUBSCRIBE request (network watcher to S-CSCF)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP watcher.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
Max-Forwards: 69
P-Asserted-Identity: <sip:user1_public1@home1.net>
Privacy: none
Route: <sip:scscf1.home1.net;lr;orig>
From: <sip:user1_public1@home1.net>;tag=31415
To: <sip:user2_public1@home2.net>
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 61 SUBSCRIBE
Event:PRESENCE
Expires: 7200
Accept: application/pidf+xml;q=0.3, application/pidf-partial+xml;q=1
Contact: <sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp>
Content-Length: 0
```

Request-URI: Public user identity of the user to whose events the subscriber subscribes to.

P-Asserted-Identity: The network based watcher inserts the public user identity of the watcher on whose behalf the subscription is made into the P-Asserted-Identity header field..

Route: The Route header is populated with the address of the S-CSCF obtained from the response to the user location query performed by the network based watcher on the Sh interface.

Event: This field is populated with the value "presence" to specify the use of the presence package.

Contact: The contact information of the network based watcher.

3. **Evaluation of initial filter criteria**

    S-CSCF#1 validates the service profile of the subscriber identified in the P-Asserted-Identity header field and evaluates the initial filter criteria. For this example, assume no Application Server involvement.

4. **SUBSCRIBE request (S-CSCF to I-CSCF) - see example in table A.3.5-4**

    S-CSCF#1 performs an analysis of the destination address, and determines the network operator to whom the destination subscriber belongs. Since the originating operator does not desire to keep their internal configuration hidden, S-CSCF#1 forwards the SUBSCRIBE request directly to the I-CSCF in the destination network.

Table A.3.5-4: SUBSCRIBE (S-CSCF to I-CSCF)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK351g45.1, SIP/2.0/UDP
      network.home1.net;branch=z9hG4bK240f34.1,
Max-Forwards: 68
P-Asserted-Identity: <sip:user1_public1@home1.net>
Privacy:
Record-Route: <sip:scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Expires:
Accept:
Contact:
Content-Length:
```

5. **Cx: User Location Query procedure**

The I-CSCF sends a query to the HSS to find out the S-CSCF of the called user. The HSS responds with the address of the current S-CSCF for the terminating subscriber.

For detailed message flows see 3GPP TS 29.228 [10].

Table A.3.5-5a provides the parameters in the SIP SUBSCRIBE request (flow 4), which are sent to the HSS.

Table A.3.5-5a: Cx: User registration status query procedure (I-CSCF to HSS)

Message source and destination	Cx: Information element name	Information source in SIP SUBSCRIBE	Description
I-CSCF to HSS	User Public Identity	Request-URI	This information element indicates the public user identity

Table A.3.5-5b provides the parameters sent from the HSS that need to be mapped to the SIP SUBSCRIBE request (flow 6) and sent to the S-CSCF.

Table A.3.5-5b: Cx: User registration status query procedure (HSS to I-CSCF)

Message source and destination	Cx: Information element name	Mapping to SIP header in SIP SUBSCRIBE	Description
HSS to I-CSCF	S-CSCF name	Route header field	This information indicates the serving CSCF's name of that user

6. **SUBSCRIBE request (I-CSCF to S-CSCF) - see example in table A.3.5-6**

   The I-CSCF forwards the SUBSCRIBE request to the S-CSCF (S-CSCF#2) that will handle the termination.

Table A.3.5-6: SUBSCRIBE request (I-CSCF to S-CSCF)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP icscf2_s.home2.net;branch=z9hG4bK871y12.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK351g45.1, SIP/2.0/UDP
     network.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 67
P-Asserted-Identity:
Privacy:
Route: <sip:scscf2.home2.net;lr>
Record-Route:
From:
To:
Call-ID:
CSeq:
Event:
Expires:
Accept:
Contact:
Content-Length:
```

NOTE: The I-CSCF does not add itself to the Record-Route header, as it has no need to remain in the signalling path for the subsequent requests.

7. **Evaluation of initial filter criteria**

   S-CSCF#2 validates the service profile of this subscriber and evaluates the initial filter criteria. For sip:user2_public1@home2.net S-CSCF#2 has termination initial filter criteria with sService pPoints of interest Trigger of Method = SUBSCRIBE and Event = "presence" that informs the S-CSCF to route the SUBSCRIBE request to the Application Server ps.home2.net. The S-CSCF#2 has preconfigured information not to create a Record-Route header for this request.

CR-Form-v7.1

CHANGE REQUEST

| ⌘ | **24.141** CR **43** | ⌘**rev** | **-** | ⌘ | Current version: | **6.3.0** | ⌘ |

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐   ME **X** Radio Access Network ☐   Core Network **X**

Title: ⌘	Reference update: event-list	
Source: ⌘	Nokia	
Work item code:⌘	PRESNC	**Date:** ⌘ 14/04/2005
Category: ⌘ **F**		**Release:** ⌘ Rel-6

Use *one* of the following categories:
  F *(correction)*
  A *(corresponds to a correction in an earlier release)*
  B *(addition of feature),*
  C *(functional modification of feature)*
  D *(editorial modification)*
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

Use *one* of the following releases:
Ph2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*
Rel-7 *(Release 7)*

Reason for change: ⌘	The current TS contains internet draft references which work is in progress. This CR provides update to the simple-event-list reference.
Summary of change:⌘	Internet draft references updated.
Consequences if not approved: ⌘	Old version of internet draft is referenced by the TS.

Clauses affected: ⌘	2, A.3.3, A.5.3

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

2 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document in the same Release as the present document.

[1]   3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2]   3GPP TS 22.141: "Presence Service; Stage 1".

[3]   3GPP TS 23.002: "Network architecture".

[4]   3GPP TS 23.141: "Presence service; Architecture and functional description; Stage 2".

[5]   3GPP TS 23.218: "IP Multimedia (IM) session handling; IM call model; Stage 2".

[6]   3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".

[7]   3GPP TS 24.109: "Bootstrapping interface (Ub) and Network application function interface (Ua); Protocol details".

[8]   3GPP TS 24.228 Release 5: "Signalling flows for the IP multimedia call control based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

[9]   3GPP TS 24.229: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

[10]   3GPP TS 29.228: "IP Multimedia (IM) Subsystem Cx and Dx Interfaces; Signalling flows and message contents".

[11]   3GPP TS 33.222: "Generic Authentication Architecture (GAA); Access to network application functions using Hypertext Transfer Protocol over Transport Layer Security (HTTPS)".

[12]   IETF RFC 2664 (1999): "FYI on Questions and Answers - Answers to Commonly asked New Internet User Questions".

[13]   IETF RFC 2246 (1999): "The TLS Protocol Version 1.0".

[14]   IETF RFC 2387 (August 1998): "The MIME Multipart/Related Content-type".

[15]   IETF RFC 2616 (June 1999): "Hypertext Transfer Protocol -- HTTP/1.1".

[15A]   IETF RFC 2617 (June 1999): " HTTP Authentication: Basic and Digest Access Authentication".

[16]   IETF RFC 2778 (2000): "A Model for Presence and Instant Messaging".

[17]   IETF RFC 3261 (June 2002): "SIP: Session Initiation Protocol".

[18]   IETF RFC 3263 (June 2002): "Session Initiation Protocol (SIP): Locating SIP Servers".

[19]   IETF RFC 3265 (March 2002): "Session Initiation Protocol (SIP)-Specific Event Notification".

[20]   IETF RFC 3310 (2002): "Hypertext Transfer Protocol (HTTP) Digest Authentication Using Authentication and Key Agreement (AKA)".

[21]   IETF RFC 3863 (August 2004): "Presence Information Data Format (PIDF)".

[22]	draft-ietf-simple-event-list-05 07 (October December 2004): "A Session Initiation Protocol (SIP) Event Notification Extension for Resource Lists".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[23]	IETF RFC 3903 (October 2004): " Session Initiation Protocol (SIP) for Event State Publication".

[24]	draft-ietf-simple-partial-notify-03 (October 2004): "Partial Notification of Presence Information".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[25]	draft-ietf-simple-prescaps-ext-02 (October 2004): "User Agent Capability Extension to Presence Information Data Format (PIDF)".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[26]	draft-ietf-simple-rpid-04 (October 2004): "RPID: Rich Presence Extensions to the Presence Information Data Format (PIDF)".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[27]	IETF RFC 3856 (August 2004): "A Presence Event Package for the Session Initiation Protocol (SIP)".

[28]	IETF RFC 3857 (August 2004): "A Watcher Information Event Template-Package for the Session Initiation Protocol (SIP)".

[29]	IETF RFC 3858 (August 2004): "An Extensible Markup Language (XML) Based Format for Watcher Information".

[30]	draft-ietf-simple-filter-format-03 (October 2004): "An Extensible Markup Language (XML) Based Format for Event Notification Filtering".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[31]	draft-ietf-simple-event-filter-funct-03 (October 2004): "Functional Description of Event Notification Filtering".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[32]	draft-ietf-simple-cipid-03 (July 2004): "CIPID: Contact Information in Presence Information Data Format".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[33]	draft-ietf-simple-xcap-04 (October 2004): "The Extensible Markup Language (XML) Configuration Access Protocol (XCAP)".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[34]	draft-ietf-simple-xcap-pidf-manipulation-usage-02 (October 2004): "An Extensible Markup Language (XML) Configuration Access Protocol (XCAP) Usage for Manipulating Presence Document Contents".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[35]	draft-ietf-simple-presence-rules-01 (October 2004): "Presence Authorization Rules".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[36]	draft-ietf-simple-xcap-list-usage-04 (October 2004): "An Extensible Markup Language (XML) Format for Representing Resource Lists".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[37]	draft-ietf-geopriv-pidf-lo-03 (September 2004): "A Presence-based GEOPRIV Location Object Format".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[38]   draft-ietf-simple-partial-pidf-format-02 (October 2004): "Presence Information Data Format (PIDF) Extension for Partial Presence".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[39]   draft-ietf-simple-xcap-package-02 (July 2004): "An Extensible Markup Language (XML) Document Format for Indicating Changes in XML Configuration Access Protocol (XCAP) Resources".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[40]   draft-ietf-sip-content-indirect-mech-05 (October 2004): "A Mechanism for Content Indirection in Session Initiation Protocol (SIP) Messages".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[41]   draft-rosenberg-simple-common-policy-caps-01 (July 2004): "An Extensible Markup Language (XML) Representation for Expressing Policy Capabilities".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[42]   draft-rosenberg-simple-pres-policy-caps-01 (July 2004): "An Extensible Markup Language (XML) Representation for Expressing Presence Policy Capabilities".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[43]   draft-ietf-sipping-config-framework-05 (October 2004): "A Framework for Session Initiation Protocol User Agent Profile Delivery".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[44]   draft-ietf-simple-presence-data-model-01 (October 2004): "A Data Model for Presence".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[45]   draft-ietf-simple-partial-publish-01 (October 2004): "Partial Publication of Presence Information".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

---------------- NEXT CHANGE --------------------

A.3.3 Watcher subscribing to resource list, UE in visited network

A.3.3.1 Watcher subscribing to his own resource list, UE in visited network - Successful subscription
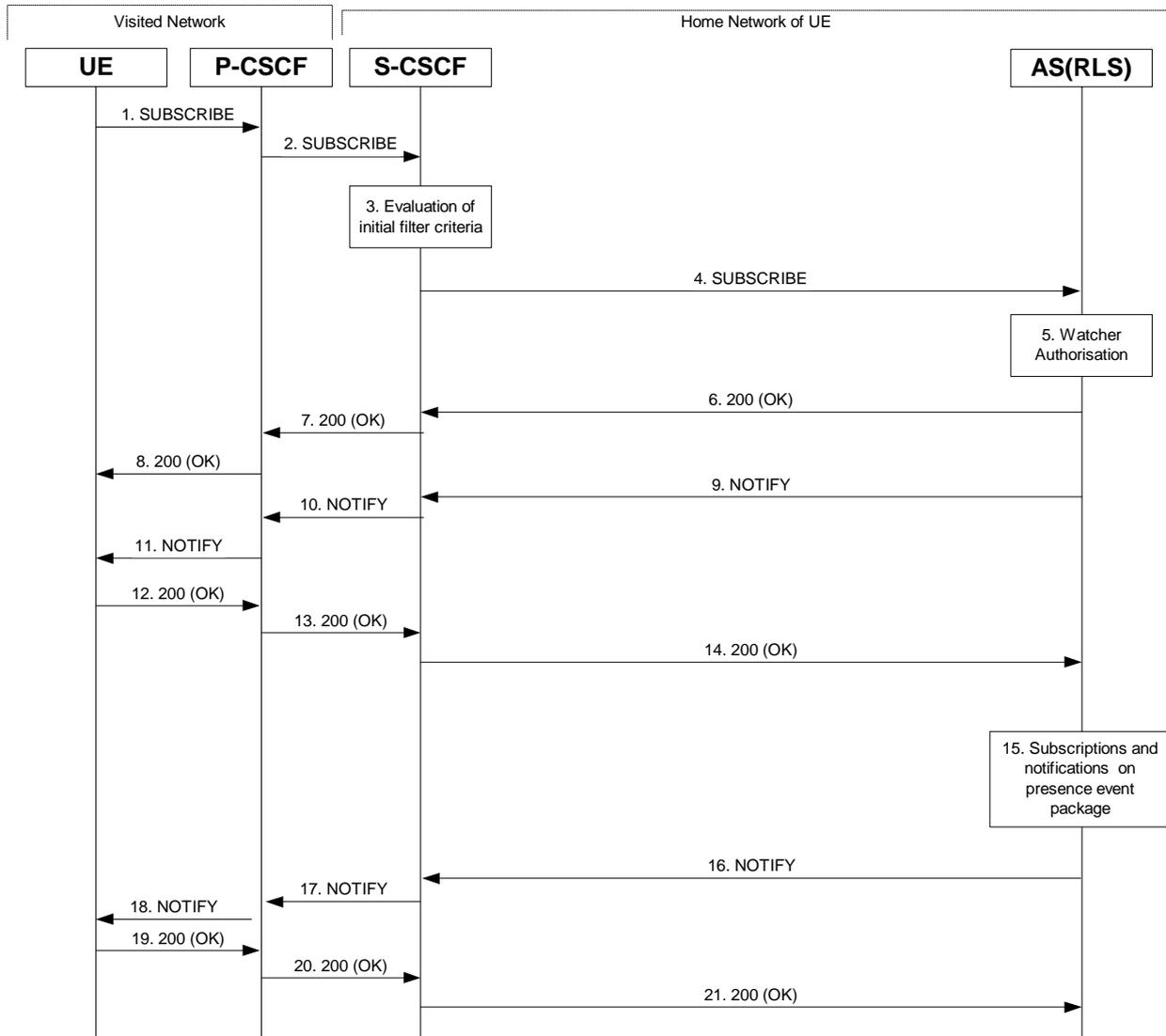
Figure A.3.3.1-1: Watcher subscribing to resource list

Figure A.3.3.1-1 shows a watcher subscribing to resource list event notification. The details of the signalling flows are as follows:

1. **SUBSCRIBE request (UE to P-CSCF) – see example in table A.3.3.1-1**

   A watcher agent in a UE wishes to watch a number of presentities, or certain presence information of these presentities. The list of presentities are identified by a SIP URI. In order to initiate a subscription to the RLS, the UE generates a SUBSCRIBE request indicating support for "eventlist", together with an indication of the length of time this periodic subscription should last.

Table A.3.3.1-1: SUBSCRIBE request (UE to P-CSCF)

```
SUBSCRIBE sip:user1_list1@home1.net SIP/2.0
Via: SIP/2.0/UDP [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
Max-Forwards: 70
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
Route: <sip:pcscf1.visited1.net:7531;lr;comp=sigcomp>, <sip:orig@scscf1.home1.net;lr>
P-Preferred-Identity: <sip:user1_public1@home1.net>
Privacy: none
From: <sip:user1_public1@home1.net>;tag=31415
To: <sip:user1_list1@home1.net>
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 123 SUBSCRIBE
Require: sec-agree
Proxy-Require: sec-agree
Security-Verify: ipsec-3gpp; q=0.1; alg=hmac-sha-1-96; spi-c=98765432; spi-s=87654321; port-
     c=8642; port-s=7531
Event: presence
Supported: eventlist
Expires: 7200
Accept: application/pidf+xml, application/rlmi+xml, multipart/related
Contact: <sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp>
Content-Length: 0
```

Request-URI: SIP URI of the resource list representing the collection of public user identities whose events the subscriber subscribes to.

Event: This field is populated with the value "presence" to specify the use of the presence package.

Accept: This field is populated with the value "application/pidf+xml", "application/rlmi+xml" and "multipart/related" indicating that the UE supports both body types for the eventlist extension additionally to PIDF.

Supported: This field is populated with the value 'eventlist' to specify the support for the eventlist extension.

To: Same as the Request-URI.

2. **SUBSCRIBE request (P-CSCF to S-CSCF) – see example in table A.3.3.1-2**

   The P-CSCF looks up the serving network information for the public user identity that was stored during the registration procedure. The SUBSCRIBE request is forwarded to S-CSCF#1. A Route header is inserted into SUBSCRIBE request. The information for the Route header is taken from the service route determined during registration.

Table A.3.3.1-2: SUBSCRIBE request (P-CSCF to S-CSCF)

```
SUBSCRIBE sip:user1_list1@home1.net SIP/2.0
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Access-Network-Info:
Route: <sip:orig@scscf1.home1.net;lr>
Max-Forwards: 69
P-Asserted-Identity: <sip:user1_public1@home1.net>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=223551024"
Privacy:
Record-Route: <sip:pcscf1.visited1.net;lr>
Route: <sip:scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Supported:
Expires:
Accept:
Contact:
Content-Length:
```

3. **Evaluation of initial filter criteria**

The S-CSCF validates the service profile of this subscriber and evaluates the initial filter criteria. Assuming that sip:user1_list1@home1.net is a statically created PSI, sip:user1_list1@home1.net is included in the service profile as part of an originating initial Filter Criteria with Service Trigger Point of Method = SUBSCRIBE AND Supported = 'eventlist' AND Request-URI = sip:user1_list1@home1.net that informs the S-CSCF to route the SUBSCRIBE request to the application server sip:rls.home1.net.

If there is no initial filter criteria for this PSI (sip:user1_list1@home1.net), the assumption is that the PSI is a sub domain-based PSI. The procedure defined in RFC 3263 [18] with DNS NAPTR and SRV queries may then be used to get the IP address of the application server home1.net.

Editor's note: The handling of alternative PSI routing examples should be described and expanded in subclause A.3.1 rather than in this location.

4. **SUBSCRIBE request (S-CSCF to RLS) – see example in table A.3.3.1-4**

The S-CSCF forwards the SUBSCRIBE request to the RLS.

Table A.3.3.1-4: SUBSCRIBE request (S-CSCF to RLS)

```
SUBSCRIBE sip:user1_list1@home1.net SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK344a65.1, SIP/2.0/UDP
     pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
Max-Forwards: 68
P-Access-Network-Info:
P-Asserted-Identity: <sip:user1_public1@home1.net>, <tel:+1-212-555-1111>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=223551024"; orig-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
     ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Privacy:
Record-Route: <sip:orig@scscf1.home1.net;lr>, <sip:pcscf1.visited1.net;lr>
Route: <sip:rls.home1.net;lr>, <sip:orig@scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Supported:
Expires:
Accept:
Contact:
Content-Length:
```

P-Charging-Vector: The S-CSCF populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The S-CSCF populates the P-Charging-Function-Addresses header field to be passed to the RLS.

5. **Authorization of watcher**

The RLS performs the necessary authorization checks on the originator to ensure that he/she is authorized to use the resource list. In this example this condition has been met, so the PS sends a 200 (OK) response to the S-CSCF. If the previous condition failed, then a 403 (Forbidden) response would be sent to the S-CSCF.

6. **200 (OK) response (RLS to S-CSCF) - see example in table A.3.3.1-6**

The RLS sends the response to the S-CSCF.

Table A.3.3.1-6: 200 (OK) response (RLS to S-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK344a65.1, SIP/2.0/UDP
     pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=223551024"; orig-ioi=home1.net;
     term-ioi=home1.net
Record-Route:
From:
To: <sip:user1_list1@home1.net>;tag=151170
Call-ID:
CSeq:
Require: eventlist
Expires:
Contact:
Content-Length: 0
```

P-Charging-Vector: The RLS stores the terminating Inter Operator Identifier (IOI) parameter and populates the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter of this header.

7. **200 (OK) response (S-CSCF to P-CSCF) - see example in table A.3.3.1-7**

The S-CSCF forwards the response to the P-CSCF.

Table A.3.3.1-7: 200 (OK) response (S-CSCF to P-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=223551024"
Record-Route:
From:
To:
Call-ID:
CSeq:
Require:
Expires:
Contact:
Content-Length:
```

P-Charging-Vector: The S-CSCF stores the terminating Inter Operator Identifier (IOI) parameter received.

8. **200 (OK) response (P-CSCF to UE) - see example in table A.3.3.1-8**

The P-CSCF forwards the response to the watcher agent in the UE.

Table A.3.3.1-8: 200 (OK) response (P-CSCF to UE)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
Record-Route: <sip:orig@scscf1.home1.net;lr>, <sip:pcscf1.visited1.net:7531;lr;comp=sigcomp>
From:
To:
Call-ID:
CSeq:
Require:
Expires:
Contact:
Content-Length:
```

9. **NOTIFY request (RLS to S-CSCF) - see example in table A.3.3.1-9**

The RLS generates a NOTIFY request including the RLMI document as a result of the SUBSCRIBE request.

Table A.3.3.1-9 NOTIFY request (RLS to S-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP rls.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 70
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=323551024"; orig-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
     ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.visited1.net;lr>
From: <sip:user1_list1@home1.net>;tag=151170
To: <sip:user1_public1@home1.net>;tag=31415
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 89 NOTIFY
Subscription-State: active;expires=7200
Require: eventlist
Event: presence
Contact: <sip:rls.home1.net>
Content-Type: application/rlmi+xml;charset="UTF-8"
Content-Length:

<?xml version="1.0" encoding="UTF-8"?>
  <list xmlns="urn:ietf:params:xml:ns:rmli"
       uri="sip:user1_list1@home1.net" version="1" fullState="true">
     <resource uri="pres:user2_public1@home2.net" name="Kovacs Janos">
       <name>Kovacs Janos</name>
        <instance id="hqzsuxtfyq" state="active" cid="ZvSvkz@rls.home1.net"/>
     </resource>
     <resource uri="pres:user3_public1@home3.net" name="Szabo Bela">
       <name>Szabo Bela</name>
        <instance id="aakdsjklsa" state="active" cid="HJjbssk@rls.home1.net"/>
     </resource>
  </list>
```

P-Charging-Vector: The RLS inserts this header and populates the icid parameters with a globally unique value and adds the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The RLS populates the P-Charging-Function-Addresses header field to be passed to the S-CSCF.

10. **NOTIFY request (S-CSCF to P-CSCF) - see example in table A.3.3.1-10**

The S-CSCF forwards the NOTIFY request to the P-CSCF.

Table A.3.3.1-10: NOTIFY request (S-CSCF to P-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     rls.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 69
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=323551024"
P-Charging-Function-Addresses:
Route: <sip:pcscf1.visited1.net;lr>
Record-Route: <sip:scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Require:
Event:
Contact:
Content-Length:

(…)
```

P-Charging-Vector: The S-CSCF stores originating Inter Operator Identifier (IOI) parameter received.

P-Charging-Function-Addresses: The S-CSCF stores the P-Charging-Function-Addresses header field and passes this header to the P-CSCF.

11. **NOTIFY request (P-CSCF to UE) – see example in table A.3.3.1-11**

    The P-CSCF forwards the NOTIFY request to the watcher in the UE.

Table A.3.3.1-11: NOTIFY request (P-CSCF to UE)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
      scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
      rls.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 68
Record-Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.visited1.net:7531;lr;comp=sigcomp>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Require:
Event:
Contact:
Content-Length:

(…)
```

12. **200 (OK) response (UE to P-CSCF) – see example in table A.3.3.1-12**

    The UE acknowledges the NOTIFY request with a 200 (OK) response to the P-CSCF.

Table A.3.3.1-12: 200 (OK) response (UE to P-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
      scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
      rls.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
From:
To:
Call-ID:
CSeq:
Content-Length: 0
```

13. **200 (OK) response (P-CSCF to S-CSCF) – see example in table A.3.3.1-13**

    The P-CSCF forwards the 200 (OK) response to the S-CSCF.

Table A.3.3.1-13: 200 (OK) response (P-CSCF to S-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
      rls.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=323551024"
From:
To:
Call-ID:
CSeq:
Content-Length:
```

14. **200 (OK) response (S-CSCF to RLS) - see example in table A.3.3.1-14**

    The S-CSCF#2 forwards the response to the RLS in the home network of the UE.

Table A.3.3.1-14: 200 (OK) response (S-CSCF to RLS)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP rls.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=323551024"; orig-ioi=home1.net;
     term-ioi=home1.net
From:
To:
Call-ID:
CSeq:
Content-Length:
```

P-Charging-Vector: The S-CSCF inserts the originating Inter Operator Identifier (IOI) parameter received and populates the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter of this header.

15. **Subscriptions and notifications on presence event package**

After the RLS generated a NOTIFY request to inform the UE about the subscription state, the RLS generates the necessary SUBSCRIBE requests to the presentities present in the resource list as described in subclause A.3.4.1. As soon as it receives NOTIFY request(s) about a state change in one or more presentities, it generates a NOTIFY request.

16. **NOTIFY request (RLS to S-CSCF) – see example in table A.3.3.1-16**

The RLS copies the body of the incoming NOTIFY request(s) into the body of the outgoing NOTIFY request using MIME type multipart/related. Further notification sent by the RLS may contain either the full or the partial set of presence information (only the presence information that has changed since the last notification) as described in draft-ietf-simple-event-list [22].

In this example it is assumed that the RLS has received two NOTIFY requests from presentities sip:user2_public1@home2.net and sip:user3_public1@home3.net before generating the NOTIFY request in table A.3.3.1-16 to the UE.

Table A.3.3.1-16 NOTIFY request (RLS to S-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP rls.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 70
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=423551024"; orig-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
     ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.visited1.net;lr>
From: <sip:user1_list1@home1.net>;tag=151170
To: <sip:user1_public1.home1.net>;tag=31415
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 90 NOTIFY
Subscription-State: active;expires=5000
Require: eventlist
Event: presence
Contact: <sip:rls.home1.net>
Content-Type: multipart/related;type="application/rlmi+xml";
     start="<nXYxAE@rls.home1.net>";boundary="50UBfW7LSCVLtggUPe5z"
Content-Length: (...)

--50UBfW7LSCVLtggUPe5z
Content-Transfer-Encoding: binary
Content-ID: <nXYxAE@rls.home1.net>
Content-Type: application/rlmi+xml;charset="UTF-8"

<?xml version="1.0" encoding="UTF-8"?>
  <list xmlns="urn:ietf:params:xml:ns:rmli"
       uri="sip:user1_list1@home1.net" version="1" fullState="true">
     <resource uri="pres:user2_public1@home2.net" name="Kovacs Janos">
       <name>Kovacs Janos</name>
       <instance id="hqzsuxtfyq" state="active" cid="ZvSvkz@rls.home1.net"/>
     </resource>
     <resource uri="pres:user3_public1@home3.net" name="Szabo Bela">
       <name>Szabo Bela</name>
       <instance id="aakdsjklsa" state="active" cid="HJjbssk@rls.home1.net"/>
     </resource>
  </list>

--50UBfW7LSCVLtggUPe5z
Content-Transfer-Encoding: binary
Content-ID: <ZvSvkz@rls.home1.net>
Content-Type: application/pidf+xml;charset="UTF-8"

<?xml version="1.0" encoding="UTF-8"?>
   <presence xmlns="urn:ietf:params:xml:ns:pidf"
           xmlns:es="urn:ietf:params:xml:ns:pidf:status:rpid-status"
           xmlns:et="urn:ietf:params:xml:ns:pidf:rpid-tuple"
           xmlns:ep="urn:ietf:params:xml:ns:pidf:rpid-person"
           xmlns:dmp="urn:ietf:params:xml:ns:pidf:person"
           xmlns:pcp="urn:ietf:params:xml:ns:pidf:servcaps"
           xmlns:ci="urn:ietf:params:xml:ns:pidf:cipid"
           entity="pres:user2_public1@home2.net">

     <tuple id="a8098a.672364762364">
       <status>
         <basic>open</basic>
         <es:privacy><text/></es:privacy>
         <es:status-icon>http://example.com/~user2/icon.gif</es:status-icon>
       </status>
       <et:class>sip</et:class>
       <pcp:video>false</pcp:video>
       <pcp:audio>true</pcp:audio>
       <contact priority="0.8">sip:user2_public1@home2.net</contact>
```

```
            <note xml:lang="en">Don't Disturb Please!</note>
            <note xml:lang="fr">Ne derangez pas, s'il vous plait</note>
            <timestamp>2003-08-27T11:49:29Z</timestamp>
        </tuple>

        <tuple id="jklhgf9788934774.78">
          <status>
            <basic>open</basic>
          </status>
          <et:class>assistant</et:class>
          <et:relationship>assistant</et:relationship>
          <contact priority="1.0">tel:+1-212-555-2222</contact>
          <note xml:lang="en">She's my secretary</note>
          <timestamp>2003-08-27T11:49:29Z</timestamp>
        </tuple>

        <dmp:person>
          <ep:class>presentity</ep:class>
          <ci:homepage>http://example.com/~user2</ci:homepage>
          <ci:card>http://example.com/~user2/card.vcd</ci:card>
          <dmp:status>
            <ep:activities><ep:meeting/></ep:activities>
            <ep:place-type until="2003-08-27T17:30:00Z">office</ep:place-type>
          </dmp:status>
        </dmp:person>

    </presence>

--50UBfW7LSCVLtggUPe5z
Content-Transfer-Encoding: binary
Content-ID: <ZvSvkz@pres.example.com>
Content-Type: application/pidf+xml;charset="UTF-8"

<?xml version="1.0" encoding="UTF-8"?>
    <presence xmlns="urn:ietf:params:xml:ns:pidf"
            xmlns:es="urn:ietf:params:xml:ns:pidf:status:rpid-status"
            xmlns:et="urn:ietf:params:xml:ns:pidf:rpid-tuple"
            xmlns:ep="urn:ietf:params:xml:ns:pidf:rpid-person"
            xmlns:dmp="urn:ietf:params:xml:ns:pidf:person"
            xmlns:pcp="urn:ietf:params:xml:ns:pidf:servcaps"
            entity="pres:user3_public1@home3.net">

      <tuple id="h7833hjkk.dsajfjdsaf">
        <status>
          <basic>closed</basic>
          <es:privacy><es:text/></es:privacy>
          <pcp:prescaps>
            <pcp:video>false</pcp:video>
            <pcp:audio>true</pcp:audio>
          </pcp:prescaps>
        </status>
        <et:class>sip</et:class>
        <contact priority="0.8">sip:user3_public1@home3.net</contact>
        <note xml:lang="en">Don't Disturb Please!</note>
        <note xml:lang="hu">Senki se merjen zavarni!</note>
        <timestamp>2003-08-27T11:48:59Z</timestamp>
      </tuple>

      <tuple id="sajdhdsahjh75vvcb774.78">
        <status>
          <basic>open</basic>
        </status>
        <et:class>supervisor</et:class>
        <et:relationship>supervisor</et:relationship>
        <contact priority="1.0">tel:+1-858-204-9141</contact>
        <note xml:lang="en">He's my supervisor</note>
        <timestamp>2003-08-27T11:48:59Z</timestamp>
      </tuple>

      <dmp:person>
        <ci:homepage>http://example.com/~user3</ci:homepage>
        <ci:card>http://example.com/~user3/card.vcd</ci:card>
        <et:class>presentity</et:class>
        <dmp:status>
          <ep:activities><ep:vacation/></ep:activities>
          <ep:place-type until="2003-09-10T17:30:00Z">ship</ep:place-type>
        </dmp:status>
      </dmp:person>
```

```
    </presence>

--50UBfW7LSCVLtggUPe5z--
```

P-Charging-Vector: The RLS inserts this header and populates the icid parameters with a globally unique value and adds the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The RLS populates the P-Charging-Function-Addresses header field to be passed to the S-CSCF.

Content-Type: Set to the value of the Accept: header received in the SUBSCRIBE request.

The message body in the NOTIFY request that carries the presence information of the presentity is formed as indicated in draft-ietf-simple-event-list [22], draft-ietf-simple-presence-data-model [44], draft-ietf-simple-rpid [26], draft-ietf-simple-cipid [32] and draft-ietf-simple-prescaps-ext [25].

17. **NOTIFY request (S-CSCF to P-CSCF) - see example in table A.3.3.1-17**

The S-CSCF forwards the NOTIFY request to the P-CSCF.

Table A.3.3.1-17: NOTIFY request (S-CSCF to P-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     rls.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 69
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=423551024"
P-Charging-Function-Addresses:
Route: <sip:pcscf1.visited1.net;lr>
Record-Route: <sip:scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Require:
Event:
Contact:
Content Type:
Content-Length:

(…)
```

P-Charging-Vector: The RLS stores the originating Inter Operator Identifier (IOI) parameter received.

P-Charging-Function-Addresses: The S-CSCF stores the P-Charging-Function-Addresses header field and passes this header to the P-CSCF.

18.   **NOTIFY request (P-CSCF to UE) - see example in table A.3.3.1-18**

The P-CSCF forwards the NOTIFY request to the watcher in the UE.

Table A.3.3.1-18: NOTIFY request (P-CSCF to UE)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     rls.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 68
Record-Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.visited1.net:7531;lr;comp=sigcomp>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Require:
Event:
Content-Type:
Content-Length:

(…)
```

19.   **200 (OK) response (UE to P-CSCF) – see example in table A.3.3.1-19**

The UE acknowledges the NOTIFY request with a 200 (OK) response to the P-CSCF.

Table A.3.3.1-19: 200 (OK) response (UE to P-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     rls.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
From:
To:
Call-ID:
CSeq:
Content-Length: 0
```

20.   **200 (OK) response (P-CSCF to S-CSCF) - see example in table A.3.3.1-20**

The P-CSCF forwards the 200 (OK) response to the S-CSCF.

Table A.3.3.1-20: 200 (OK) response (P-CSCF to S-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     rls.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=423551024"
From:
To:
Call-ID:
CSeq:
Content-Length:
```

21. **200 (OK) response (S-CSCF to RLS) - see example in table A.3.3.1-21**

The S-CSCF#2 forwards the response to the RLS in the home network of the UE.

Table A.3.3.1-21: 200 (OK) response (S-CSCF to RLS)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP rls.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=423551024"; orig-ioi=home1.net;
      term-ioi=home1.net
From:
To:
Call-ID:
CSeq:
Content-Length:
```

P-Charging-Vector: The S-CSCF inserts the originating Inter Operator Identifier (IOI) parameter received and populates the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter of this header.

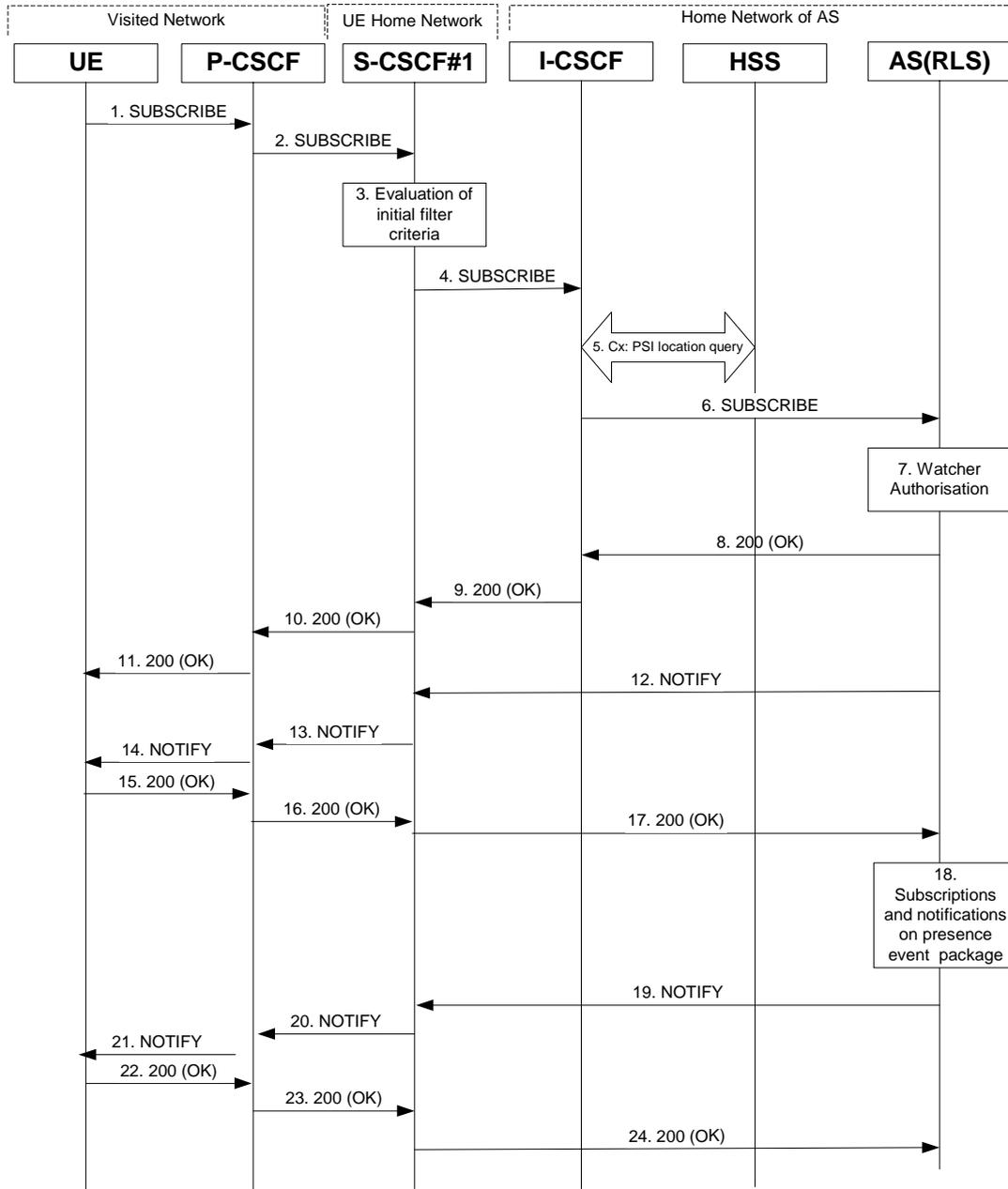## A.3.3.2 Watcher subscribing to a resource list, UE in visited network - successful subscription

Figure A.3.3.2-1 Watcher subscribing to resource list

Figure A.3.3.2-1 shows a watcher subscribing to resource list event notification. The details of the signalling flows are as follows:

1. **SUBSCRIBE request (UE to P-CSCF) - see example in table A.3.3.2-1**

   A watcher agent in a UE wishes to watch a number of presentities, or certain presence information of these presentities. The list of presentities are identified by a SIP URI. In order to initiate a subscription to the RLS, the UE generates a SUBSCRIBE request indicating support for 'eventlist', together with an indication of the length of time this periodic subscription should last.

Table A.3.3.2-1: SUBSCRIBE request (UE to P-CSCF)

```
SUBSCRIBE sip:user2_list1@home2.net SIP/2.0
Via: SIP/2.0/UDP [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
Max-Forwards: 70
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
Route: <sip:pcscf1.visited1.net:7531;lr;comp=sigcomp>, <sip:orig@scscf1.home1.net;lr>
P-Preferred-Identity: <sip:user1_public1@home1.net>
Privacy: none
From: <sip:user1_public1@home1.net>;tag=31415
To: <sip:user2_list1@home1.net>
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 123 SUBSCRIBE
Require: sec-agree
Proxy-Require: sec-agree
Security-Verify: ipsec-3gpp; q=0.1; alg=hmac-sha-1-96; spi-c=98765432; spi-s=87654321; port-
      c=8642; port-s=7531
Event: presence
Supported: eventlist
Expires: 7200
Accept: application/pidf+xml, application/rlmi+xml, multipart/related
Contact: <sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp>
Content-Length: 0
```

Request-URI: SIP URI of the resource list representing the collection of public user identities whose events the subscriber subscribes to.

Event: This field is populated with the value "presence" to specify the use of the presence package.

Accept: This field is populated with the value "application/pidf+xml", "application/rlmi+xml" and "multipart/related" indicating that the UE supports the eventlist extension additionally to PIDF.

Supported: This field is populated with the value 'eventlist' to specify the support for the eventlist extension.

To: Same as the Request-URI.

2. **SUBSCRIBE request (P-CSCF to S-CSCF) - see example in table A.3.3.2-2**

The P-CSCF looks up the serving network information for the public user identity that was stored during the registration procedure. The SUBSCRIBE request is forwarded to S-CSCF#1. A Route header is inserted into SUBSCRIBE request. The information for the Route header is taken from the service route determined during registration.

Table A.3.3.2-2: SUBSCRIBE request (P-CSCF to S-CSCF)

```
SUBSCRIBE sip:user2_list1@home2.net SIP/2.0
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Access-Network-Info:
Route: <sip:orig@scscf1.home1.net;lr>
Max-Forwards: 69
P-Asserted-Identity: <sip:user1_public1@home1.net>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"
Privacy:
Record-Route: <sip:pcscf1.visited1.net;lr>
Route: <sip:scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Supported:
Expires:
Accept:
Contact:
Content-Length:
```

3. **Evaluation of initial filter criteria**

S-CSCF#1 validates the service profile of this subscriber and evaluates the initial filter criteria. For this example, assume no application server involvement.

4. **SUBSCRIBE request (S-CSCF to I-CSCF) - see example in table A.3.3.2-4**

S-CSCF#1 performs an analysis of the destination address. As the destination address points to a resource that is in a different network as the S-CSCF, the S-CSCF sends the request to the I-CSCF of home2.net.

Table A.3.3.2-4: SUBSCRIBE request (S-CSCF to I-CSCF)

```
SUBSCRIBE sip:user2_list1@home2.net SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK344a65.1, SIP/2.0/UDP
     pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
Max-Forwards: 68
P-Asserted-Identity: <sip:user1_public1@home1.net>, <tel:+1-212-555-1111>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"; orig-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
     ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Privacy:
Record-Route: <orig@sip:scscf1.home1.net;lr>, <sip:pcscf1.visited1.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Supported:
Expires:
Accept:
Contact:
Content-Length:
```

5. **PSI location query**

The I-CSCF sends a query to the HSS to find the RLS where sip:user2_list1@home2.net is hosted. The HSS responds with the address of the RLS.

For detailed message flows see 3GPP TS 29.228 [10].

Table A.3.3.2-5a provides the parameters in the SIP SUBSCRIBE request (flow 4), which are sent to the HSS.

Table A.3.3.2-5a Cx: User registration status query procedure (I-CSCF to HSS)

Message source & destination	Cx: Information element name	Information source in SIP SUBSCRIBE	Description
I-CSCF to HSS	User Public Identity	Request-URI:	This information element indicates the PSI of the RLS

Table A.3.3.2-5b provides the parameters sent from the HSS that need to be mapped to SIP SUBSCRIBE (flow 6) and sent to S-CSCF.

Table A.3.3.2-5b Cx: User registration status query procedure (HSS to I-CSCF)

Message source & destination	Cx: Information element name	Mapping to SIP header in SIP SUBSCRIBE	Description
HSS to I-CSCF	S-CSCF name	Route header field	This information indicates the address of the RLS

6. **SUBSCRIBE request (I-CSCF to RLS) - see example in table A.3.3.2-6**

The I-CSCF forwards the SUBSCRIBE request to the RLS.

Table A.3.3.2-6: SUBSCRIBE request (I-CSCF to S-CSCF)

```
SUBSCRIBE sip:user2_list1@home2.net SIP/2.0
Via: SIP/2.0/UDP icscf2_s.home2.net;branch=z9hG4bK871y12.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK344a65.1, SIP/2.0/UDP
     pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
Max-Forwards: 67
P-Asserted-Identity:
P-Charging-Vector:
Privacy:
Record-Route:
Route: <sip:rls.home2.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Supported:
Expires:
Accept:
Contact:
Content-Length:
```

7. **Authorization of watcher**

The RLS performs the necessary authorization checks on the originator to ensure that he/she is authorized to use the resource list. In this example this condition has been met, so the PS sends a 200 (OK) response to the S-CSCF. If the previous condition failed, then a 403 (Forbidden) response would be sent to the S-CSCF.

8.   **200 (OK) response (RLS to I-CSCF) - see example in table A.3.3.2-8**

The RLS sends the response to the S-CSCF.

Table A.3.3.2-8: 200 (OK) response (RLS to I-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP icscf2_s.home2.net;branch=z9hG4bK871y12.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK344a65.1, SIP/2.0/UDP
     pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"; orig-ioi=home1.net;
     term-ioi=home2.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
     ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Record-Route:
From:
To: <sip:user2_list1@home2.net>;tag=151170
Call-ID:
CSeq:
Require: eventlist
Expires:
Contact: <sip:rls.home2.net>
Content-Length: 0
```

P-Charging-Vector: The RLS stores the originating Inter Operator Identifier (IOI) parameter and populates the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The RLS stores the P-Charging-Function-Addresses header field and passes this header to the I-CSCF.

9.   **200 (OK) response (I-CSCF to S-CSCF) - see example in table A.3.3.2-9**

The I-CSCF forwards the response to the S-CSCF.

Table A.3.3.2-9: 200 (OK) response (I-CSCF to S-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK344a65.1, SIP/2.0/UDP
     pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Charging-Vector:
Record-Route:
From:
To:
Call-ID:
CSeq:
Require:
Expires:
Contact:
Content-Length: 0
```

P-Charging-Vector: The RLS stores the header and passes this header to the S-CSCF.

10. **200 (OK) response (S-CSCF to P-CSCF) - see example in table A.3.3.2-10**

    The S-CSCF forwards the response to the P-CSCF.

Table A.3.3.2-10: 200 (OK) response (S-CSCF to P-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"
Record-Route:
From:
To:
Call-ID:
CSeq:
Require:
Expires:
Contact:
Content-Length:
```

P-Charging-Vector: The S-CSCF stores the terminating Inter Operator Identifier (IOI) parameter.

11. **200 (OK) response (P-CSCF to UE) - see example in table A.3.3.2-11**

    The P-CSCF forwards the response to the watcher agent in the UE.

Table A.3.3.2-11: 200 (OK) response (P-CSCF to UE)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
Record-Route: <sip:orig@scscf1.home1.net;lr>, <sip:pcscf1.home1.net:7531;lr;comp=sigcomp>
From:
To:
Call-ID:
CSeq:
Require:
Expires:
Contact:
Content-Length:
```

12. **NOTIFY request (RLS to S-CSCF) – see example in table A.3.3.2-12**

The RLS generates a NOTIFY request including the RLMI document as a result of the SUBSCRIBE request.

Table A.3.3.2-12: NOTIFY request (RLS to S-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP rls.home2.net;branch=z9hG4bK240f34.1
Max-Forwards: 70
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=123551024"; orig-ioi=home1.net
Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.visited1.net;lr>
From: <sip:user2_list1@home1.net>;tag=151170
To: <sip:user1_public1.home1.net>;tag=31415
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 89 NOTIFY
Subscription-State: active;expires=5000
Require: eventlist
Event: presence
Contact: <sip:rls.home1.net>
Content-Type: application/rlmi+xml;charset="UTF-8"
Content-Length: (...)

<?xml version="1.0" encoding="UTF-8"?>
  <list xmlns="urn:ietf:params:xml:ns:rmli"
        uri="sip:user1_list1@home1.net" version="1" fullState="true">
     <resource uri="pres:user2_public1@home2.net" name="Kovacs Janos">
       <name>Kovacs Janos</name>
       <instance id="hqzsuxtfyq" state="active" cid="ZvSvkz@rls.home2.net"/>
     </resource>
     <resource uri="pres:user3_public1@home2.net" name="Szabo Bela">
       <name>Szabo Bela</name>
       <instance id="aakdsjklsa" state="active" cid="HJjbssk@rls.home2.net"/>
     </resource>
  </list>
```

P-Charging-Vector: The RLS populates the icid parameter with a globally unique value and populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

13. **NOTIFY request (S-CSCF to P-CSCF) - see example in table A.3.3.2-13**

The S-CSCF#1 forwards the NOTIFY request to the P-CSCF.

Table A.3.3.2-13: NOTIFY request (S-CSCF to P-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
      rls.home2.net;branch=z9hG4bK240f34.1
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=123551024"
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
      ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Max-Forwards: 69
Record-Route: <sip:scscf1.home1.net;lr>
Route: <sip:pcscf1.visited1.net;lr>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Require:
Event:
Contact:
Content-Type:
Content-Length:

(…)
```

P-Charging-Vector: The S-CSCF stores the originating Inter Operator Identifier (IOI) parameter.

P-Charging-Function-Addresses: The RLS populates the P-Charging-Function-Addresses header field to be passed to the I-CSCF.

14. **NOTIFY request (P-CSCF to UE) - see example in table A.3.3.2-14**

    The P-CSCF forwards the NOTIFY request to the watcher in the UE.

Table A.3.3.2-14: NOTIFY request (P-CSCF to UE)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     rls.home2.net;branch=z9hG4bK240f34.1
Max-Forwards: 68
Record-Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.home1.net:7531;lr;comp=sigcomp>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Require:
Event: Contact:
Content-Type:
Content-Length:

(…)
```

15. **200 (OK) response (UE to P-CSCF) - see example in table A.3.3.2-15**

    The UE acknowledges the NOTIFY request with a 200 (OK) to the P-CSCF.

Table A.3.3.2-15: 200 (OK) response (UE to P-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     rls.home2.net;branch=z9hG4bK240f34.1
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
From:
To:
Call-ID:
CSeq:
Content-Length: 0
```

16. **200 (OK) response (P-CSCF to S-CSCF) – see example in table A.3.3.2-16**

    The P-CSCF forwards the 200 (OK) response to the S-CSCF#1.

Table A.3.3.2-16: 200 (OK) response (P-CSCF to S-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     rls.home2.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=123551024"
From:
To:
Call-ID:
CSeq:
Content-Length:
```

17. **200 (OK) response (S-CSCF to RLS) - see example in table A.3.3.2-17**

     The S-CSCF#1 forwards the response to the RLS in the home network of the UE.

Table A.3.3.2-17: 200 (OK) response (S-CSCF to RLS)

```
SIP/2.0 200 OK
Via: SP/2.0/UDP rls.home2.net;branch=z9hG4bK240f34.1
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=123551024"; orig-ioi=home1.net:
     term-ioi=home1.net
From:
To:
Call-ID:
CSeq:
Content-Length:
```

P-Charging-Vector: The S-CSCF insertes the originating Inter Operator Identifier (IOI) parameter received and populates the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter of this header.

18. **Subscriptions and notifications on presence event package**

     After the RLS generated a 200 (OK) response to the SUBSCRIBE request from the UE, it generates the necessary SUBSCRIBE requests to the presentities present in the resource list as described in subclause A.3.4.1. As soon as it receives NOTIFY request(s) about a state change in one or more presentities, it generates a NOTIFY request.

19. **NOTIFY request (RLS to S-CSCF) – see example in table A.3.3.2-19**

The RLS copies the body of the incoming NOTIFY request(s) into the body of the outgoing NOTIFY request using MIME type multipart/related. Further notification sent by the RLS contain may contain either the full or the partial set of presence information (only the presence information that has changed since the last notification) as described in draft-ietf-simple-event-list [22].

In this example it is assumed that the RLS receives two NOTIFY requests from presentities sip:user2_public1@home2.net and sip:user3_public1@home3.net before generating the NOTIFY request in subclause A.3.3.2-23 to the UE.

Table A.3.3.2-19: NOTIFY request (RLS to S-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP rls.home2.net;branch=z9hG4bK240f34.1
Max-Forwards: 70
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=223551024"; orig-ioi=home1.net
Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.visited1.net;lr>
From: <sip:user2_list1@home1.net>;tag=151170
To: <sip:user1_public1.home1.net>;tag=31415
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 89 NOTIFY
Subscription-State: active;expires=5000
Require: eventlist
Event: presence
Contact: <sip:rls.home2.net>
Content-Type: multipart/related;type="application/rlmi+xml";
      start="<nXYxAE@rls.home2.net>";boundary="50UBfW7LSCVLtggUPe5z"
Content-Length: (...)

--50UBfW7LSCVLtggUPe5z
Content-Transfer-Encoding: binary
Content-ID: <nXYxAE@rls.home2.net>
Content-Type: application/rlmi+xml;charset="UTF-8"

<?xml version="1.0" encoding="UTF-8"?>
  <list xmlns="urn:ietf:params:xml:ns:rmli"
        uri="sip:user1_list1@home1.net" version="1" fullState="true">
     <resource uri="pres:user2_public1@home2.net" name="Kovacs Janos">
       <name>Kovacs Janos</name>
       <instance id="hqzsuxtfyq" state="active" cid="ZvSvkz@rls.home2.net"/>
     </resource>
     <resource uri="pres:user3_public1@home3.net" name="Szabo Bela">
       <name>Szabo Bela</name>
       <instance id="aakdsjklsa" state="active" cid="HJjbssk@rls.home2.net"/>
     </resource>
  </list>

--50UBfW7LSCVLtggUPe5z
Content-Transfer-Encoding: binary
Content-ID: <ZvSvkz@rls.home2.net>
Content-Type: application/pidf+xml;charset="UTF-8"

<?xml version="1.0" encoding="UTF-8"?>
   <presence xmlns="urn:ietf:params:xml:ns:pidf"
             xmlns:es="urn:ietf:params:xml:ns:pidf:status:rpid-status"
             xmlns:et="urn:ietf:params:xml:ns:pidf:rpid-tuple"
             xmlns:ep="urn:ietf:params:xml:ns:pidf:rpid-person"
             xmlns:dmp="urn:ietf:params:xml:ns:pidf:person"
             xmlns:pcp="urn:ietf:params:xml:ns:pidf:servcaps"
             xmlns:ci="urn:ietf:params:xml:ns:pidf:cipid"
             entity="pres:user2_public1@home2.net">

    <tuple id="a8098a.672364762364">
      <status>
        <basic>open</basic>
        <es:privacy><text/></es:privacy>
        <es:status-icon>http://example.com/~user2/icon.gif</es:status-icon>
      </status>
      <et:class>sip</et:class>
      <pcp:video>false</pcp:video>
      <pcp:audio>true</pcp:audio>
      <contact priority="0.8">sip:user2_public1@home2.net</contact>
      <note xml:lang="en">Don't Disturb Please!</note>
      <note xml:lang="fr">Ne derangez pas, s'il vous plait</note>
```

```
          <timestamp>2003-08-27T11:49:29Z</timestamp>
       </tuple>

       <tuple id="jklhgf9788934774.78">
          <status>
            <basic>open</basic>
          </status>
          <et:class>assistant</et:class>
          <et:contact-type>presentity</et:contact-type>
          <et:relationship>assistant</et:relationship>
          <contact priority="1.0">tel:+1-212-555-2222</contact>
          <note xml:lang="en">She's my secretary</note>
          <timestamp>2003-08-27T11:49:29Z</timestamp>
       </tuple>

       <dmp:person>
          <ep:class>presentity</ep:class>
          <ci:homepage>http://example.com/~user2</ci:homepage>
          <ci:card>http://example.com/~user2/card.vcd</ci:card>
          <dmp:status>
            <ep:activities><ep:meeting/></ep:activities>
            <ep:place-type until="2003-08-27T17:30:00Z">office</ep:place-type>
          </dmp:status>
       </dmp:person>

    </presence>

--50UBfW7LSCVLtggUPe5z
Content-Transfer-Encoding: binary
Content-ID: <ZvSvkz@pres.example.com>
Content-Type: application/pidf+xml;charset="UTF-8"

<?xml version="1.0" encoding="UTF-8"?>
    <presence xmlns="urn:ietf:params:xml:ns:pidf"
              xmlns:es="urn:ietf:params:xml:ns:pidf:status:rpid-status"
              xmlns:et="urn:ietf:params:xml:ns:pidf:rpid-tuple"
              xmlns:ep="urn:ietf:params:xml:ns:pidf:rpid-person"
              xmlns:dmp="urn:ietf:params:xml:ns:pidf:person"
              xmlns:pcp="urn:ietf:params:xml:ns:pidf:servcaps"
              entity="pres:user3_public1@home3.net">

       <tuple id="h7833hjkk.dsajfjdsaf">
          <status>
            <basic>closed</basic>
            <es:privacy><es:text/></es:privacy>
            <pcp:prescaps>
              <pcp:video>false</pcp:video>
              <pcp:audio>true</pcp:audio>
            </pcp:prescaps>
          </status>
          <et:class>sip</et:class>
          <contact priority="0.8">sip:user3_public1@home3.net</contact>
          <note xml:lang="en">Don't Disturb Please!</note>
          <note xml:lang="hu">Senki se merjen zavarni!</note>
          <timestamp>2003-08-27T11:48:59Z</timestamp>
       </tuple>

       <tuple id="sajdhdsahjh75vvcb774.78">
          <status>
            <basic>open</basic>
          </status>
          <et:class>supervisor</et:class>
          <et:relationship>supervisor</et:relationship>
          <contact priority="1.0">tel:+1-858-204-9141</contact>
          <note xml:lang="en">He's my supervisor</note>
          <timestamp>2003-08-27T11:48:59Z</timestamp>
       </tuple>

       <dmp:person>
          <ci:homepage>http://example.com/~user3</ci:homepage>
          <ci:card>http://example.com/~user3/card.vcd</ci:card>
          <et:class>presentity</et:class>
          <dmp:status>
            <ep:activities><ep:vacation/></ep:activities>
            <ep:place-type until="2003-09-10T17:30:00Z">ship</ep:place-type>
          </dmp:status>
       </dmp:person>
```

```
    </presence>

--50UBfW7LSCVLtggUPe5z--
```

P-Charging-Vector: The RLS populates the icid parameter with a globally unique value and populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

Content-Type: Set to the value of the Accept: header received in the SUBSCRIBE request.

The message body in the NOTIFY request that carries the presence information of the presentity is formed as indicated in draft-ietf-simple-event-list [22], draft-ietf-simple-presence-data-model [44], draft-ietf-simple-rpid [26], draft-ietf-simple-cipid [32] and draft-ietf-simple-prescaps-ext [25].

20. **NOTIFY request (S-CSCF to P-CSCF) - see example in table A.3.3.2-20**

The S-CSCF#1 forwards the NOTIFY request to the P-CSCF.

Table A.3.3.2-20: NOTIFY request (S-CSCF to P-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     rls.home2.net;branch=z9hG4bK240f34.1
Max-Forwards: 69
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=223551024"
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
     ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Route: <sip:pcscf1.visited1.net;lr>
Record-Route: <sip:scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Require:
Event:
Contact:
Content-Type:
Content-Length:

(…)
```

P-Charging-Vector: The S-CSCF stores the terminating Inter Operator Identifier (IOI) parameter received.

P-Charging-Function-Addresses: The S-CSCF populates the P-Charging-Function-Addresses header field to be passed to the P-CSCF.

21. **NOTIFY request (P-CSCF to UE) - see example in table A.3.3.2-21**

    The P-CSCF forwards the NOTIFY request to the watcher in the UE.

Table A.3.3.2-21: NOTIFY request (P-CSCF to UE)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK332b23.1SIP/2.0/UDP rls.home2.net;branch=z9hG4bK240f34.1
Max-Forwards: 68
Record-Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.home1.net:7531;lr;comp=sigcomp>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Require:
Event:
Contact:
Content-Type:
Content-Length:

(…)
```

22. **200 (OK) response (UE to P-CSCF) - see example in table A.3.3.2-22**

    The UE acknowledges the NOTIFY request with a 200 (OK) to the P-CSCF.

Table A.3.3.2-22: 200 (OK) response (UE to P-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK332b23.1SIP/2.0/UDP rls.home2.net;branch=z9hG4bK240f34.1
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
From:
To:
Call-ID:
CSeq:
Content-Length: 0
```

23. **200 (OK) response (P-CSCF to S-CSCF) – see example in table A.3.3.2-23**

    The P-CSCF forwards the 200 (OK) response to the S-CSCF#1.

Table A.3.3.2-23: 200 (OK) response (P-CSCF to S-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     rls.home2.net;branch=z9hG4bK240f34.1
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=223551024", orig-ioi=hom1.net,
     term-ioi=visited1.net
P-Access-Network-Info:
From:
To:
Call-ID:
CSeq:
Content-Length:
```

24.   **200 (OK) response (S-CSCF to RLS) – see example in table A.3.3.2-24**

The S-CSCF#2 forwards the response to the RLS in the home network of the UE.

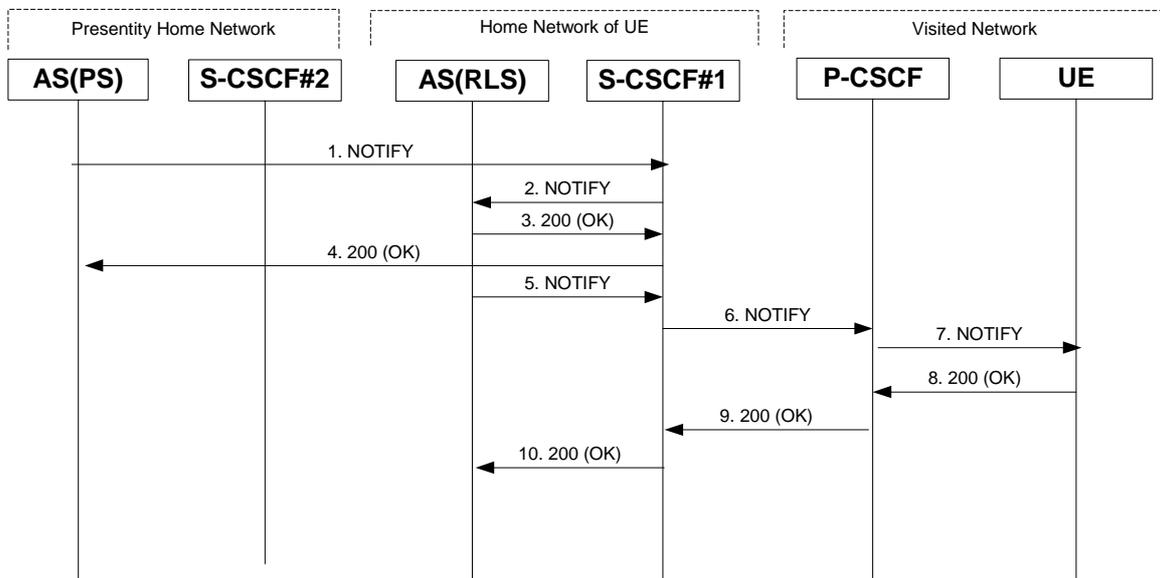**Table A.3.3.2-24: 200 (OK) response (S-CSCF to RLS)**

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP rls.home2.net;branch=z9hG4bK240f34.1
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=223551024", orig-ioi=hom1.net;
       term-ioi=home1.net
From:
To:
Call-ID:
CSeq:
Content-Length:
```

P-Charging-Vector: The S-CSCF inserts the originating Inter Operator Identifier (IOI) parameter received and populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

-------------------NEXT CHANGE------------------

A.5.3   Notification to resource list in a different network and notification to watcher in the visited network

A.5.3.1   Successful notification

Figure A.5.3.1-1: Notification to resource list in a different network and notification to watcher in the visited network

Figure A.5.3.1-1 shows the PS providing presence event notification about a presentity to a RLS in a different network. This notification triggers the RLS to provide presence event notification to the watcher. The details of the signalling flows are as follows:

1.   **NOTIFY request (PS to S-CSCF) - see example in table A.5.3.1-1**

The PS determines which authorized watchers are entitled to receive presence information. For each appropriate watcher, the PS sends a NOTIFY request that contains the updated state of presence information. In this example the notification is only sent to the RLS.

The NOTIFY request may either contain the complete set of presence information, or only those presence information that have changed since the last notification. For this example, the complete set of presence information is sent.

Table A.5.3.1-1: NOTIFY request (PS to S-CSCF)

```
NOTIFY sip:rls.home1.net SIP/2.0
Via: SIP/2.0/UDP ps.home2.net;branch=z9hG4bK240f34.1
Max-Forwards: 70
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=623551024"; orig-ioi=home12.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
     ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Route: <sip:scscf1.home1.net;lr>
From: <sip:user2_public1@home2.net>;tag=151170
To: <sip:user1_public1@home1.net>;tag=31415
Call-ID: gahjt393yhakfh83hfasl98a
CSeq: 43 NOTIFY
Subscription-State: active;expires=5000
Event: presence
Contact: <sip:ps.home2.net>
Content-Type: application/pidf+xml
Content-Length: (...)

<?xml version="1.0" encoding="UTF-8"?>
   <presence xmlns="urn:ietf:params:xml:ns:pidf"
             xmlns:es="urn:ietf:params:xml:ns:pidf:status:rpid-status"
             xmlns:et="urn:ietf:params:xml:ns:pidf:rpid-tuple"
             xmlns:ep="urn:ietf:params:xml:ns:pidf:rpid-person"
             xmlns:dmp="urn:ietf:params:xml:ns:pidf:person"
             xmlns:pcp="urn:ietf:params:xml:ns:pidf:servcaps"
             xmlns:ci="urn:ietf:params:xml:ns:pidf:cipid"
         entity="pres:user2_public1@home2.net ">

    <tuple id="a8098a.672364762364">
      <status>
        <basic>open</basic>
        <es:privacy><text/></es:privacy>
        <es:status-icon>http://example.com/~user2/icon.gif</es:status-icon>
      </status>
      <et:class>sip</et:class>
      <pcp:video>false</pcp:video>
      <pcp:audio>true</pcp:audio>
      <contact priority="0.8">sip:user2_public1@home2.net</contact>
      <note xml:lang="en">Don't Disturb Please!</note>
      <note xml:lang="fr">Ne derangez pas, s'il vous plait</note>
      <timestamp>2003-08-27T17:35:29Z</timestamp>
    </tuple>

    <dmp:person>
      <ep:class>presentity</ep:class>
      <ci:homepage>http://example.com/~user2</ci:homepage>
      <ci:card>http://example.com/~user2/card.vcd</ci:card>
      <dmp:status>
        <ep:activities><ep:meeting/></ep:activities>
        <ep:place-type until="2003-08-27T17:30:00Z">office</ep:place-type>
      </dmp:status>
    </dmp:person>

   </presence>
```

P-Charging-Vector: The PS populates the icid parameter with a globally unique value and populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The PS populates the P-Charging-Function-Addresses header field to be passed to the S-CSCF.

2. **NOTIFY request (S-CSCF to RLS) - see example in table A.5.3.1-2**

> The S-CSCF#1 forwards the NOTIFY request to the RLS.

Table A.5.3.1-2: NOTIFY request (S-CSCF to RLS)

```
NOTIFY sip:rls.home1.net SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bKehuehjgt, SIP/2.0/UDP
     scscf2.home2.net;branch=z9hG4bK764z87.1, SIP/2.0/UDP ps.home2.net;branch=z9hG4bK348923.1
Max-Forwards: 69
P-Charging-Vector:
P-Charging-Function-Addresses:
Record-Route: <sip:scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Event:
Contact:
Content-Type:
Content-Length:

(…)
```

P-Charging-Vector: The S-CSCF stores the originating Inter Operator Identifier (IOI) parameter and populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The S-CSCF stores the P-Charging-Function-Addresses header field and passes this header to the RLS.

3. **200 (OK) response (RLS to S-CSCF) - see example in table A.5.3.1-3**

> The RLS generates a 200 (OK) response to the NOTIFY request.

Table A.5.3.1-3: 200 (OK) response (RLS to S-CSCF)

```
SIP/2.0 200 OK
Via:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=623551024"; orig-
     ioi=home1.net:term-ioi=home1.net
From:
To:
Call-ID:
CSeq:
Content-Length: 0
```

P-Charging-Vector: The RLS stores the terminating Inter Operator Identifier (IOI) parameter and populates the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter of this header.

4. **200 (OK) response (S-CSCF to PS) - see example in table A.5.3.1-4**

> The S-CSCF#1 forwards the 200 (OK) response to the PS.

Table A.5.3.1-4: 200 (OK) response (S-CSCF to PS)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP ps.home2.net;branch=z9hG4bK348923.1
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=623551024"; orig-
     ioi=home1.net:term-ioi=home1.net
From:
To:
Call-ID:
CSeq:
Content-Length:
```

P-Charging-Vector: The S-CSCF stores the terminating Inter Operator Identifier (IOI) parameter and.populates the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter of this header.

5. **NOTIFY request (RLS to S-CSCF#1) - see example in table A.5.3.1-5**

The RLS may decide to wait for other notifications and combine them in a single notification towards the UE or it sends the notification to the UE without any waiting. In this example, the RLS does not wait for other notifications.

Table A.5.3.1-5: NOTIFY request (RLS to S-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP rls.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 70
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=723551024"; orig-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
      ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.visited1.net;lr>
From: <sip:user1_list1@home1.net>;;tag=151170
To: <sip:user1_public1@home1.net>;tag=31415
Call-ID: gahjt393yhakfh83hfasl98a
CSeq: 90 NOTIFY
Subscription-State: active;expires=4500
Require: eventlist
Event: presence
Contact: <sip:rls.home1.net>
Content-Type: multipart/related;type="application/rlmi+xml";
      start="<njhhsdhj@rls.home1.net>";boundary="70UBfW7L78hjgfgUPe5z"
Content-Length: (...)

--70UBfW7L78hjgfgUPe5z
Content-Transfer-Encoding: binary
Content-ID: <njhhsdhj@rls.home1.net>
Content-Type: application/rlmi+xml;charset="UTF-8"

<?xml version="1.0" encoding="UTF-8"?>
  <list xmlns="urn:ietf:params:xml:ns:rmli"
        uri="sip:user1_list1@home1.net"
                  version="2"
                  fullState="false"
      <resource uri="pres:user2_public1@home2.net" name="Kovacs Janos">
        <name>Kovacs Janos</name>
        <instance id="hqzsuxtfyq" state="active" cid="uhjgfd@rls.home1.net"/>
      </resource>
  </list>

--70UBfW7L78hjgfgUPe5z
Content-Transfer-Encoding: binary
Content-ID: <uhjgfd@rls.home1.net>
Content-Type: application/pidf+xml;charset="UTF-8"

<?xml version="1.0" encoding="UTF-8"?>
   <presence xmlns="urn:ietf:params:xml:ns:pidf"
             xmlns:es="urn:ietf:params:xml:ns:pidf:status:rpid-status"
             xmlns:et="urn:ietf:params:xml:ns:pidf:rpid-tuple"
             xmlns:ep="urn:ietf:params:xml:ns:pidf:rpid-person"
             xmlns:dmp="urn:ietf:params:xml:ns:pidf:person"
             xmlns:pcp="urn:ietf:params:xml:ns:pidf:servcaps"
             xmlns:ci="urn:ietf:params:xml:ns:pidf:cipid"
             entity="pres:user2_public1@home2.net">

     <tuple id="a8098a.672364762364">
       <status>
         <basic>open</basic>
         <es:privacy><text/></es:privacy>
         <es:status-icon>http://example.com/~user2/icon.gif</es:status-icon>
       </status>
       <et:class>sip</et:class>
       <pcp:video>false</pcp:video>
       <pcp:audio>true</pcp:audio>
       <contact priority="0.8">sip:user2_public1@home2.net</contact>
       <note xml:lang="en">Don't Disturb Please!</note>
       <note xml:lang="fr">Ne derangez pas, s'il vous plait</note>
       <timestamp>2003-08-27T17:35:29Z</timestamp>
     </tuple>
```

```
    <dmp:person>
      <ep:class>presentity</ep:class>
      <ci:homepage>http://example.com/~user2</ci:homepage>
      <ci:card>http://example.com/~user2/card.vcd</ci:card>
      <dmp:status>
        <ep:activities><ep:meeting/></ep:activities>
        <ep:place-type until="2003-08-27T17:30:00Z">office</ep:place-type>
      </dmp:status>
    </dmp:person>

  </presence>

--70UBfW7L78hjgfgUPe5z
```

P-Charging-Vector: The RLS populates the icid parameter with a globally unique value and populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The RLS populates the P-Charging-Function-Addresses header field to be passed to the S-CSCF.

6. **NOTIFY request (S-CSCF to P-CSCF) - see example in table A.5.3.6**

The S-CSCF forwards the NOTIFY request to the P-CSCF.

Table A.5.3.1-6: NOTIFY request (S-CSCF to P-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     rls.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 69
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=723551024"
P-Charging-Function-Addresses:
Route: <sip:pcscf1.visited1.net;lr>
Record-Route: <sip:scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Require:
Event:
Contact:
Content-Type:
Content-Length:

(…)
```

P-Charging-Vector: The S-CSCF stores the originating Inter Operator Identifier (IOI) parameter.

P-Charging-Function-Addresses: The S-CSCF stores the P-Charging-Function-Addresses header field and passes this header to the P-CSCF.

7. **NOTIFY request (P-CSCF to UE) - see example in table A.5.3.1-7**

The P-CSCF forwards the NOTIFY request to the UE.

Table A.5.3.1-7: NOTIFY request (P-CSCF to UE)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
      scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
      rls.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 68
Record-Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.visited1.net:7531;lr;comp=sigcomp>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Require:
Event:
Contact:
Content-Type:
Content-Length:

(…)
```

8. **200 (OK) response (UE to P-CSCF) - see example in table A.5.3.1-8**

The UE acknowledges the NOTIFY request with a 200 (OK) response to the P-CSCF.

Table A.5.3.1-8: 200 (OK) response (UE to P-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
      scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
      rls.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
From:
To:
Call-ID:
CSeq:
Content-Length: 0
```

9. **200 (OK) response (P-CSCF to S-CSCF) – see example in table A.5.3.1-9**

The P-CSCF forwards the 200 (OK) response to the S-CSCF.

Table A.5.3.1-9: 200 (OK) response (P-CSCF to S-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
      rls.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=723551024"
From:
To:
Call-ID:
CSeq:
Content-Length:
```

10. **200 (OK) response (S-CSCF to RLS) – see example in table A.5.3.1-10**

The S-CSCF forwards the response to the RLS in the home network of the presentity.

Table A.5.3.1-10: 200 (OK) response (S-CSCF to RLS)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP rls.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=723551024"; orig-
      ioi=home1.net:term-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
      ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
From:
To:
Call-ID:
CSeq:
Content-Length:
```

P-Charging-Vector: The S-CSCF stores the terminating Inter Operator Identifier (IOI) parameter and populates the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The S-CSCF stores the P-Charging-Function-Addresses header field and passes this header to the RLS.

CR-Form-v7.1

CHANGE REQUEST

⌘	**24.141** CR **44**	⌘**rev**	**-**	⌘	Current version:	**6.3.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐   ME **X** Radio Access Network ☐   Core Network **X**

Title:	⌘	Reference update: filter		
Source:	⌘	Nokia		
Work item code:⌘		PRESNC	***Date:*** ⌘	14/04/2005
Category:	⌘	**F**	***Release:*** ⌘	Rel-6

Use <u>one</u> of the following categories: **F** *(correction)* **A** *(corresponds to a correction in an earlier release)* **B** *(addition of feature),* **C** *(functional modification of feature)* **D** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	Use <u>one</u> of the following releases: Ph2 *(GSM Phase 2)* R96 *(Release 1996)* R97 *(Release 1997)* R98 *(Release 1998)* R99 *(Release 1999)* Rel-4 *(Release 4)* Rel-5 *(Release 5)* Rel-6 *(Release 6)* Rel-7 *(Release 7)*

Reason for change:	⌘	The current TS contains internet draft references which work is in progress. This CR provides update to the simple-filter-format and simple-event-filter-funct references.
Summary of change:⌘		Internet draft references updated (no technical change).
Consequences if not approved:	⌘	Old versions of internet drafts are referenced by the TS.

Clauses affected:	⌘	2

			Y	N		
Other specs affected:	⌘			**X**	Other core specifications	⌘
				X	Test specifications	
				X	O&M Specifications	

Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are
    closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

2   References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document in the same Release as the present document.

[1]   3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2]   3GPP TS 22.141: "Presence Service; Stage 1".

[3]   3GPP TS 23.002: "Network architecture".

[4]   3GPP TS 23.141: "Presence service; Architecture and functional description; Stage 2".

[5]   3GPP TS 23.218: "IP Multimedia (IM) session handling; IM call model; Stage 2".

[6]   3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".

[7]   3GPP TS 24.109: "Bootstrapping interface (Ub) and Network application function interface (Ua); Protocol details".

[8]   3GPP TS 24.228 Release 5: "Signalling flows for the IP multimedia call control based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

[9]   3GPP TS 24.229: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

[10]   3GPP TS 29.228: "IP Multimedia (IM) Subsystem Cx and Dx Interfaces; Signalling flows and message contents".

[11]   3GPP TS 33.222: "Generic Authentication Architecture (GAA); Access to network application functions using Hypertext Transfer Protocol over Transport Layer Security (HTTPS)".

[12]   IETF RFC 2664 (1999): "FYI on Questions and Answers - Answers to Commonly asked New Internet User Questions".

[13]   IETF RFC 2246 (1999): "The TLS Protocol Version 1.0".

[14]   IETF RFC 2387 (August 1998): "The MIME Multipart/Related Content-type".

[15]   IETF RFC 2616 (June 1999): "Hypertext Transfer Protocol -- HTTP/1.1".

[15A]   IETF RFC 2617 (June 1999): " HTTP Authentication: Basic and Digest Access Authentication".

[16]   IETF RFC 2778 (2000): "A Model for Presence and Instant Messaging".

[17]   IETF RFC 3261 (June 2002): "SIP: Session Initiation Protocol".

[18]   IETF RFC 3263 (June 2002): "Session Initiation Protocol (SIP): Locating SIP Servers".

[19]   IETF RFC 3265 (March 2002): "Session Initiation Protocol (SIP)-Specific Event Notification".

[20]   IETF RFC 3310 (2002): "Hypertext Transfer Protocol (HTTP) Digest Authentication Using Authentication and Key Agreement (AKA)".

[21]   IETF RFC 3863 (August 2004): "Presence Information Data Format (PIDF)".

[22]   draft-ietf-simple-event-list-05 (October 2004): "A Session Initiation Protocol (SIP) Event Notification Extension for Resource Lists".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[23]   IETF RFC 3903 (October 2004): " Session Initiation Protocol (SIP) for Event State Publication".

[24]   draft-ietf-simple-partial-notify-03 (October 2004): "Partial Notification of Presence Information".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[25]   draft-ietf-simple-prescaps-ext-02 (October 2004): "User Agent Capability Extension to Presence Information Data Format (PIDF)".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[26]   draft-ietf-simple-rpid-04 (October 2004): "RPID: Rich Presence Extensions to the Presence Information Data Format (PIDF)".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[27]   IETF RFC 3856 (August 2004): "A Presence Event Package for the Session Initiation Protocol (SIP)".

[28]   IETF RFC 3857 (August 2004): "A Watcher Information Event Template-Package for the Session Initiation Protocol (SIP)".

[29]   IETF RFC 3858 (August 2004): "An Extensible Markup Language (XML) Based Format for Watcher Information".

[30]   draft-ietf-simple-filter-format-03 05 (October 2004March 2005): "An Extensible Markup Language (XML) Based Format for Event Notification Filtering".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[31]   draft-ietf-simple-event-filter-funct-03 05 (October 2004March 2005): "Functional Description of Event Notification Filtering".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[32]   draft-ietf-simple-cipid-03 (July 2004): "CIPID: Contact Information in Presence Information Data Format".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[33]   draft-ietf-simple-xcap-04 (October 2004): "The Extensible Markup Language (XML) Configuration Access Protocol (XCAP)".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[34]   draft-ietf-simple-xcap-pidf-manipulation-usage-02 (October 2004): "An Extensible Markup Language (XML) Configuration Access Protocol (XCAP) Usage for Manipulating Presence Document Contents".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[35]   draft-ietf-simple-presence-rules-01 (October 2004): "Presence Authorization Rules".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[36]   draft-ietf-simple-xcap-list-usage-04 (October 2004): "An Extensible Markup Language (XML) Format for Representing Resource Lists".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[37]   draft-ietf-geopriv-pidf-lo-03 (September 2004): "A Presence-based GEOPRIV Location Object Format".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[38]   draft-ietf-simple-partial-pidf-format-02 (October 2004): "Presence Information Data Format (PIDF) Extension for Partial Presence".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[39]   draft-ietf-simple-xcap-package-02 (July 2004): "An Extensible Markup Language (XML) Document Format for Indicating Changes in XML Configuration Access Protocol (XCAP) Resources".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[40]   draft-ietf-sip-content-indirect-mech-05 (October 2004): "A Mechanism for Content Indirection in Session Initiation Protocol (SIP) Messages".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[41]   draft-rosenberg-simple-common-policy-caps-01 (July 2004): "An Extensible Markup Language (XML) Representation for Expressing Policy Capabilities".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[42]   draft-rosenberg-simple-pres-policy-caps-01 (July 2004): "An Extensible Markup Language (XML) Representation for Expressing Presence Policy Capabilities".

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CR-Form-v7.1

CHANGE REQUEST

| ⌘ | **24.141** CR **45** | ⌘**rev** | **-** | ⌘ | Current version: | **6.3.0** | ⌘ |

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME **X** Radio Access Network ☐ Core Network **X**

Title: ⌘	Reference update: xcap		
Source: ⌘	Nokia		
Work item code:⌘	PRESNC	**Date:** ⌘	14/04/2005
Category: ⌘	**F**	**Release:** ⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
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C *(functional modification of feature)*
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Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)
Rel-7 (Release 7)

Reason for change: ⌘	The current TS contains internet draft references which work is in progress. This CR provides update to the simple-xcap reference.
Summary of change:⌘	Internet draft references updated – changing AUID (also namespace prefixes extended, limit to UTF-8, but for those no technical change in TS needed).
Consequences if not approved: ⌘	Old versions of internet drafts are referenced by the TS.

Clauses affected: ⌘	2, 3.2, 6.3.2.4, A.8.1		

	Y	N	
Other specs ⌘		**X**	Other core specifications ⌘
affected:		**X**	Test specifications
		X	O&M Specifications

Other comments: ⌘	

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[14]   IETF RFC 2387 (August 1998): "The MIME Multipart/Related Content-type".

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----------------- NEXT CHANGE ------------------

3.2   Abbreviations

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

AS	Application Server
AUID	Application ~~Usage~~ Unique ID
CN	Core Network
CPIM	Common Profile for Instant Messaging
CSCF	Call Session Control Function
EPA	Event Publication Agent
ESC	Event State Compositor
HSS	Home Subscriber Server
HTTP	HyperText Transfer Protocol
I-CSCF	Interrogating - CSCF
IM	IP Multimedia
IOI	Inter Operator Identifier
IP	Internet Protocol
MIME	Multipurpose Internet Mail Extensions

P-CSCF	Proxy - CSCF
PIDF	Presence Information Data Format
PNA	Presence Network Agent
PS	Presence Server
PSI	Public Service Identity
PUA	Presence User Agent
RLMI	Resource List Meta-Information
RLS	Resource List Server
RPID	Rich Presence Information Data
S-CSCF	Serving - CSCF
SIP	Session Initiation Protocol
TLS	Transport Layer Security
UE	User Equipment
URI	Universal Resource Identifier
XCAP	XML Configuration Access Protocol
XML	Extensible Markup Language

----------------- NEXT CHANGE ------------------

6.3.2.4   Publication acceptance of hard state presence information

When the XCAP server receives an HTTP PUT, HTTP GET or HTTP DELETE request for publishing, fetching or deleting of hard state presence information, the XCAP server shall first authenticate the request in accordance with 3GPP TS 24.109 [7] and then perform authorization. Afterwards the XCAP server shall:

a) if the HTTP URI points to a predefined directory reserved for storing MIME objects and the request is an HTTP PUT request, replace any existing content referenced by the Request-URI with the content of the request;

b) if the Request-URI points to an uncreated directory, create the directory, store the content there and associate the content with the Request-URI. For all requests, i.e. HTTP PUT, HTTP GET and HTTP DELETE requests, generate an appropriate response in accordance with RFC 2616 [15]; or

c) if the HTTP URI points to an XCAP directory and the Application Usage Unique ID (AUID) part of the HTTP URI is set to "pidf-manipulation", process the request and generate an appropriate response in accordance with draft-ietf-simple-xcap [33], draft-ietf-simple-xcap-pidf-manipulation-usage [34] and RFC 2616 [15].

----------------- NEXT CHANGE ------------------

A.8.1   Introduction

This subclause shows signalling flows relating to the manipulation of presence service data over the Ut reference point using XCAP. The flows only shows the signalling between the XCAP server and the XCAP client, thus possible proxies located in between the entities are not shown in the example signalling flows.

Each example signalling flow shows several sequences of manipulation of data for the presence service.

NOTE: Error conditions are not considered in the examples e.g. if authorization checks fail in the XCAP server, XML Schema compliancy checks fail or the file specified by the URI does not exist then an appropriate 4xx response is sent to the client.

Clarifications how XCAP is using HTTP are described in in draft-ietf-simple-xcap-03 [33].

NOTE: The authentication proxy resides between UE (XCAP client) and AS (XCAP server), and examples of signalling flows for the authentication proxy are provided in 3GPP TS 24.109 [7].

CR-Form-v7.1

CHANGE REQUEST

⌘	**24.141** CR **46**	⌘**rev**	**-**	⌘	Current version:	**6.3.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐   ME **X** Radio Access Network ☐ Core Network **X**

Title: ⌘	Reference update: xcap-list-usage	
Source: ⌘	Nokia	
Work item code:⌘	PRESNC	**Date:** ⌘ 14/04/2005
Category: ⌘ **F**		**Release:** ⌘ Rel-6

Use <u>one</u> of the following categories:
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  A (corresponds to a correction in an earlier release)
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  R96   (Release 1996)
  R97   (Release 1997)
  R98   (Release 1998)
  R99   (Release 1999)
  Rel-4 (Release 4)
  Rel-5 (Release 5)
  Rel-6 (Release 6)
  Rel-7 (Release 7)

Reason for change: ⌘	The current TS contains internet draft references which work is in progress. This CR provides update to the simple-xcap-list-usage reference.
Summary of change:⌘	Internet draft references updated (no technical change).
Consequences if not approved: ⌘	Old versions of internet drafts are referenced by the TS.

Clauses affected: ⌘	2

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘	

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CR-Form-v7.1

CHANGE REQUEST

⌘	**24.141** CR **47**	⌘**rev**	**-**	⌘	Current version:	**6.3.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:　　UICC apps⌘ ☐　　　　ME **X** Radio Access Network ☐　Core Network **X**

Title:	⌘	Reference update: policy

Source:	⌘	Nokia

Work item code:	⌘	PRESNC		**Date:**	⌘	14/04/2005

Category:	⌘	**F**		**Release:**	⌘	Rel-6

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Reason for change:	⌘	The current TS contains internet draft references which work is in progress. This CR provides update to the rosenberg-simple-common-policy-caps and rosenberg-simple-pres[policy-caps references.

Summary of change:	⌘	Internet draft references updated, erroneous reference corrected.

Consequences if not approved:	⌘	Old versions of internet drafts are referenced by the TS.

Clauses affected:	⌘	2, 6.4.1.3

		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	AUID related changes are in the CR updating xcap reference.

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[8]   3GPP TS 24.228 Release 5: "Signalling flows for the IP multimedia call control based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

[9]   3GPP TS 24.229: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

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[11]   3GPP TS 33.222: "Generic Authentication Architecture (GAA); Access to network application functions using Hypertext Transfer Protocol over Transport Layer Security (HTTPS)".

[12]   IETF RFC 2664 (1999): "FYI on Questions and Answers - Answers to Commonly asked New Internet User Questions".

[13]   IETF RFC 2246 (1999): "The TLS Protocol Version 1.0".

[14]   IETF RFC 2387 (August 1998): "The MIME Multipart/Related Content-type".

[15]   IETF RFC 2616 (June 1999): "Hypertext Transfer Protocol -- HTTP/1.1".

[15A]   IETF RFC 2617 (June 1999): " HTTP Authentication: Basic and Digest Access Authentication".

[16]   IETF RFC 2778 (2000): "A Model for Presence and Instant Messaging".

[17]   IETF RFC 3261 (June 2002): "SIP: Session Initiation Protocol".

[18]   IETF RFC 3263 (June 2002): "Session Initiation Protocol (SIP): Locating SIP Servers".

[19]   IETF RFC 3265 (March 2002): "Session Initiation Protocol (SIP)-Specific Event Notification".

[20]   IETF RFC 3310 (2002): "Hypertext Transfer Protocol (HTTP) Digest Authentication Using Authentication and Key Agreement (AKA)".

[21]   IETF RFC 3863 (August 2004): "Presence Information Data Format (PIDF)".

[22]   draft-ietf-simple-event-list-05 (October 2004): "A Session Initiation Protocol (SIP) Event Notification Extension for Resource Lists".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[23]   IETF RFC 3903 (October 2004): " Session Initiation Protocol (SIP) for Event State Publication".

[24]   draft-ietf-simple-partial-notify-03 (October 2004): "Partial Notification of Presence Information".

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[25]   draft-ietf-simple-prescaps-ext-02 (October 2004): "User Agent Capability Extension to Presence Information Data Format (PIDF)".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[26]   draft-ietf-simple-rpid-04 (October 2004): "RPID: Rich Presence Extensions to the Presence Information Data Format (PIDF)".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[27]   IETF RFC 3856 (August 2004): "A Presence Event Package for the Session Initiation Protocol (SIP)".

[28]   IETF RFC 3857 (August 2004): "A Watcher Information Event Template-Package for the Session Initiation Protocol (SIP)".

[29]   IETF RFC 3858 (August 2004): "An Extensible Markup Language (XML) Based Format for Watcher Information".

[30]   draft-ietf-simple-filter-format-03 (October 2004): "An Extensible Markup Language (XML) Based Format for Event Notification Filtering".

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[31]   draft-ietf-simple-event-filter-funct-03 (October 2004): "Functional Description of Event Notification Filtering".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[32]   draft-ietf-simple-cipid-03 (July 2004): "CIPID: Contact Information in Presence Information Data Format".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

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Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[34]   draft-ietf-simple-xcap-pidf-manipulation-usage-02 (October 2004): "An Extensible Markup Language (XML) Configuration Access Protocol (XCAP) Usage for Manipulating Presence Document Contents".

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[35]   draft-ietf-simple-presence-rules-01 (October 2004): "Presence Authorization Rules".

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[36]   draft-ietf-simple-xcap-list-usage-04 (October 2004): "An Extensible Markup Language (XML) Format for Representing Resource Lists".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[37]   draft-ietf-geopriv-pidf-lo-03 (September 2004): "A Presence-based GEOPRIV Location Object Format".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[38]   draft-ietf-simple-partial-pidf-format-02 (October 2004): "Presence Information Data Format (PIDF) Extension for Partial Presence".

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Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[40]   draft-ietf-sip-content-indirect-mech-05 (October 2004): "A Mechanism for Content Indirection in Session Initiation Protocol (SIP) Messages".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[41]   draft-rosenberg-simple-common-policy-caps-01 02 (July 2004February 2005): "An Extensible Markup Language (XML) Representation for Expressing Policy Capabilities".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[42]   draft-rosenberg-simple-pres-policy-caps-01 02 (July 2004February 2005): "An Extensible Markup Language (XML) Representation for Expressing Presence Policy Capabilities".

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[43]   draft-ietf-sipping-config-framework-05 (October 2004): "A Framework for Session Initiation Protocol User Agent Profile Delivery".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[44]   draft-ietf-simple-presence-data-model-01 (October 2004): "A Data Model for Presence".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

[45]   draft-ietf-simple-partial-publish-01 (October 2004): "Partial Publication of Presence Information".

Editor's note: The above document cannot be formally referenced until it is published as an RFC.

------------------ NEXT CHANGE ------------------

6.3.1.3   Manipulating the subscription authorization policy

When the XCAP server intends to manipulate the subscription authorization policy, it shall generate an HTTP PUT, HTTP GET or HTTP DELETE request in accordance with RFC 2616 [15], draft-ietf-simple-xcap [33] and draft-ietf-simple-presence-rules [35].

The XCAP client may use an HTTP GET in accordance with RFC 2616 [15], draft-ietf-simple-xcap [33] and draft-rosenberg-simple-common-policy-caps [4241] for fetching of the authorization policy capabilities which the XCAP server supports.

When the XCAP client intends to authorize a different value of the same presence attribute to different watchers or watcher groups, the XCAP client shall authorize a single tuple or person element including one of the different values of the same presence attribute to every watcher or watcher groups by using a specific "inclusion set" as specified in draft-ietf-simple-presence-rules [35].

CR-Form-v7.1

CHANGE REQUEST

| ⌘ | **24.141** CR **48** | ⌘**rev** | **-** | ⌘ | Current version: | **6.3.0** | ⌘ |

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐   ME **X** Radio Access Network ☐   Core Network **X**

Title: ⌘	Reference update: config framework	
Source: ⌘	Nokia	
Work item code:⌘	PRESNC	***Date:*** ⌘ 14/04/2005
Category: ⌘ **F**		***Release:*** ⌘ Rel-6

Use <u>one</u> of the following categories:
F (correction)
A (corresponds to a correction in an earlier release)
B (addition of feature),
C (functional modification of feature)
D (editorial modification)
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use <u>one</u> of the following releases:
Ph2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)
Rel-7 (Release 7)

Reason for change: ⌘	The current TS contains internet draft references which work is in progress. This CR provides update to the sipping-config-framework reference.
Summary of change:⌘	Internet draft references updated.
Consequences if not approved: ⌘	Old versions of internet drafts are referenced by the TS.

Clauses affected: ⌘	2

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘	

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

2 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document in the same Release as the present document.

[1]   3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2]   3GPP TS 22.141: "Presence Service; Stage 1".

[3]   3GPP TS 23.002: "Network architecture".

[4]   3GPP TS 23.141: "Presence service; Architecture and functional description; Stage 2".

[5]   3GPP TS 23.218: "IP Multimedia (IM) session handling; IM call model; Stage 2".

[6]   3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".

[7]   3GPP TS 24.109: "Bootstrapping interface (Ub) and Network application function interface (Ua); Protocol details".

[8]   3GPP TS 24.228 Release 5: "Signalling flows for the IP multimedia call control based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

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[10]   3GPP TS 29.228: "IP Multimedia (IM) Subsystem Cx and Dx Interfaces; Signalling flows and message contents".

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[12]   IETF RFC 2664 (1999): "FYI on Questions and Answers - Answers to Commonly asked New Internet User Questions".

[13]   IETF RFC 2246 (1999): "The TLS Protocol Version 1.0".

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[21]   IETF RFC 3863 (August 2004): "Presence Information Data Format (PIDF)".

[22] draft-ietf-simple-event-list-05 (October 2004): "A Session Initiation Protocol (SIP) Event Notification Extension for Resource Lists".

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[24] draft-ietf-simple-partial-notify-03 (October 2004): "Partial Notification of Presence Information".

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[25] draft-ietf-simple-prescaps-ext-02 (October 2004): "User Agent Capability Extension to Presence Information Data Format (PIDF)".

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[26] draft-ietf-simple-rpid-04 (October 2004): "RPID: Rich Presence Extensions to the Presence Information Data Format (PIDF)".

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[27] IETF RFC 3856 (August 2004): "A Presence Event Package for the Session Initiation Protocol (SIP)".

[28] IETF RFC 3857 (August 2004): "A Watcher Information Event Template-Package for the Session Initiation Protocol (SIP)".

[29] IETF RFC 3858 (August 2004): "An Extensible Markup Language (XML) Based Format for Watcher Information".

[30] draft-ietf-simple-filter-format-03 (October 2004): "An Extensible Markup Language (XML) Based Format for Event Notification Filtering".

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[33] draft-ietf-simple-xcap-04 (October 2004): "The Extensible Markup Language (XML) Configuration Access Protocol (XCAP)".

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[38] draft-ietf-simple-partial-pidf-format-02 (October 2004): "Presence Information Data Format (PIDF) Extension for Partial Presence".

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[39] draft-ietf-simple-xcap-package-02 (July 2004): "An Extensible Markup Language (XML) Document Format for Indicating Changes in XML Configuration Access Protocol (XCAP) Resources".

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[41] draft-rosenberg-simple-common-policy-caps-01 (July 2004): "An Extensible Markup Language (XML) Representation for Expressing Policy Capabilities".

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[42] draft-rosenberg-simple-pres-policy-caps-01 (July 2004): "An Extensible Markup Language (XML) Representation for Expressing Presence Policy Capabilities".

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CR-Form-v7.1

CHANGE REQUEST

| ⌘ | **24.141 CR 40** | ⌘**rev** | **1** | ⌘ | Current version: | **6.3.0** | ⌘ |

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐　　ME ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Editorial corrections
Source:	⌘	Nokia
Work item code:⌘	PRESNC	***Date:*** ⌘ 27/04/2005

Category: ⌘ **F**　　　　　　　　　　　　　　　　***Release:*** ⌘ Rel-6

Use <u>one</u> of the following categories:　　Use <u>one</u> of the following releases:
F *(correction)*　　　　　　　　　　　　Ph2　*(GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*　R96　*(Release 1996)*
B *(addition of feature),*　　　　　　　　R97　*(Release 1997)*
C *(functional modification of feature)*　　R98　*(Release 1998)*
D *(editorial modification)*　　　　　　　R99　*(Release 1999)*
Detailed explanations of the above categories can　Rel-4　*(Release 4)*
be found in 3GPP TR 21.900.　　　　　　　Rel-5　*(Release 5)*
　　　　　　　　　　　　　　　　　　Rel-6　*(Release 6)*
　　　　　　　　　　　　　　　　　　Rel-7　*(Release 7)*

Reason for change:	⌘	Editorial errors in specification
Summary of change:⌘		5.3.5.1: asspecified --> as specified
		A.3.2.1: Functio --> Function
		A.3.3.2: insertes --> inserts
		A.3.4.1: "presence"that --> "presence" that
		A.5.2.1: "SIP/2.0/UDP" duplication removed
		A.5.3.1: and.populates --> and populates
		A.6.2: notifys --> notifications; insertes --> inserts (occurs twice);
		and.populates --> and populates
		A.8.1: "in" duplication removed
Consequences if ***not approved:***	⌘	Editorial errors left in specification

Clauses affected:	⌘	5.3.5.1, A.3.2.1, A.3.3.2, A.3.4.1, A.5.2.1, A.5.3.1, A.6.2, A.8.1 (not always the complete clauses are shown)

		Y	N		
Other specs	⌘		X	Other core specifications	⌘
affected:			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	

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5.3.5.1 General

In addition to the procedures specified in subclause 5.3.5, the PNA shall support the procedures specified in 3GPP TS 24.229 [9] appropriate to the functional entity in which the PNA is implemented.

The PNA can collect presence information about the presentity from a number of core network entities. The PNA can combine information from various core network entities to form more complete presence information.

Among these core network entities, the S-CSCF uses SIP to deliver presence information to the PNA over the Pi reference point as specified in subclause 5.3.5.2.

NOTE: As part of the configuration of AS to provide a presence system, appropriate settings are downloaded to the initial filter criteria in the S-CSCF to ensure this occurs. The PNA will receive third-party REGISTER requests as specified in 3GPP TS 24.229 [9] subclauses 5.4.1.7 and 5.7.1.1.

----------------NEXT CHANGE---------------
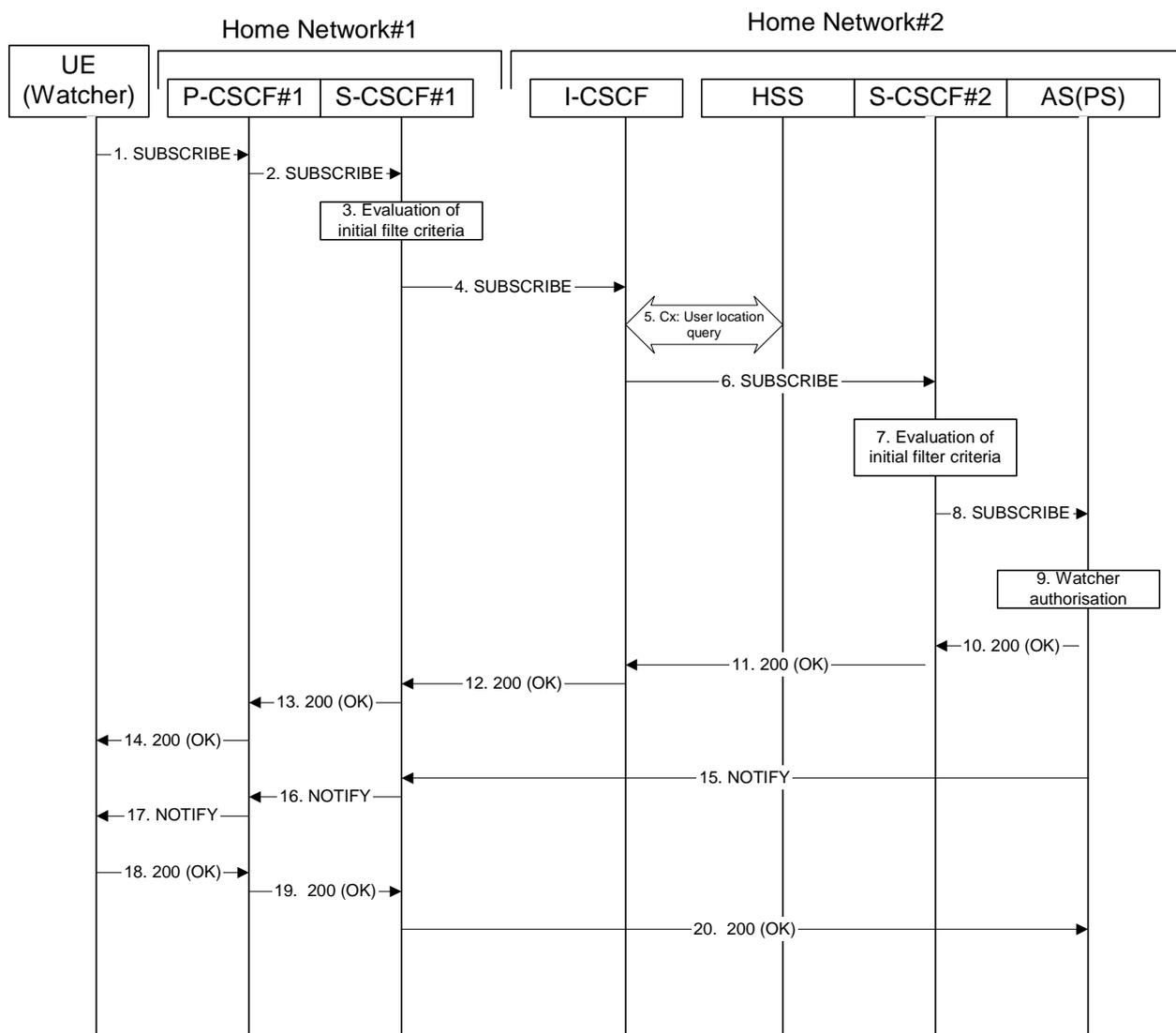
A.3.2.1 Successful subscription

Figure A.3.2.1-1: Watcher subscribing for presence information

Figure A.3.2.1-1 shows a watcher subscribing to presence event notification about a presentity. The presentity is in a different IM CN subsystem. The details of the signalling flows are as follows:

1. **SUBSCRIBE request (UE (watcher) to P-CSCF) - see example in table A.3.2.1-1**

   A watcher agent in a UE wishes to watch a presentity, or certain presence information of the presentity. To initiate a subscription, the UE generates a SUBSCRIBE request containing the "presence" event that it wishes to be notified of, together with an indication of the length of time this periodic subscription should last and the support for partial notification.

Table A.3.2.1-1: SUBSCRIBE request (UE (watcher) to P-CSCF)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKnashds7
Max-Forwards: 70
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
Route: <sip:pcscf1.visited1.net:7531;lr;comp=sigcomp>, <sip:orig@scscf1.home1.net;lr>
P-Preferred-Identity: <sip:user1_public1@home1.net>
Privacy: none
From: <sip:user1_public1@home1.net>;tag=31415
To: <sip:user2_public1@home2.net>
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 61 SUBSCRIBE
Require: sec-agree
Proxy-Require: sec-agree
Security-Verify: ipsec-3gpp; q=0.1; alg=hmac-sha-1-96; spi-c=98765432; spi-s=87654321; port-
     c=8642; port-s=7531
Event: presence
Expires: 7200
Accept: application/pidf+xml;q=0.3, application/pidf-partial+xml;q=1
Contact: <sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp>
Content-Length: 0
```

Request-URI: Public user identity whose events the subscriber subscribes to.

Event: This field is populated with the value "presence" to specify the use of the presence package.

Accept: This field is populated with the value 'application/pidf+xml' and 'application/pidf-partial+xml', latter one with higher preference.

To: Same as the Request-URI.

2. **SUBSCRIBE request (P-CSCF to S-CSCF) - see example in table A.3.2.1-2**

   The P-CSCF looks up the serving network information for the public user identity that was stored during the registration procedure. The SUBSCRIBE request is forwarded to S-CSCF. A Route header is inserted into SUBSCRIBE request. The information for the Route header is taken from the service route determined during registration.

Table A.3.2.1-2: SUBSCRIBE request (P-CSCF to S-CSCF)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP pcscf1.home1.net;branch=z9hG4bK240f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKnashds7
P-Access-Network-Info:
Max-Forwards: 69
P-Asserted-Identity: <sip:user1_public1@home1.net>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"
Privacy:
Route: <sip:orig@scscf1.home1.net;lr>
Record-Route: <sip:pcscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Expires:
Accept:
Contact:
Content-Length:
```

3.   **Evaluation of initial filter criteria**

     S-CSCF#1 validates the service profile of this subscriber and evaluates the initial filter criteria. For this
     example, assume no Application Server involvement.

4.   **SUBSCRIBE request (S-CSCF to I-CSCF) - see example in table A.3.2.1-4**

     S-CSCF#1 performs an analysis of the destination address, and determines the network operator to whom the
     destination subscriber belongs. Since the originating operator does not desire to keep their internal
     configuration hidden, S-CSCF#1 forwards the SUBSCRIBE request directly to the I-CSCF in the destination
     network.

Table A.3.2.1-4: SUBSCRIBE (S-CSCF to I-CSCF)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK351g45.1, SIP/2.0/UDP
     pcscf1.home1.net;branch=z9hG4bK240f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;;branch=z9hG4bKnashds7
Max-Forwards: 68
P-Asserted-Identity: <sip:user1_public1@home1.net>, <tel:+1-212-555-1111>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"; orig-ioi=home1.net
Privacy:
Record-Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Expires:
Accept:
Contact:
Content-Length:
```

5.   **Cx: User Location Query procedure**

     The I-CSCF sends a query to the HSS to find out the S-CSCF of the called user. The HSS responds with the
     address of the current S-CSCF for the terminating subscriber.

     For detailed message flows see 3GPP TS 29.228 [10].

     Table A.3.2.1-5a provides the parameters in the SIP SUBSCRIBE request (flow 4), which are sent to the
     HSS.

Table A.3.2.1-5a: Cx: User registration status query procedure (I-CSCF to HSS)

Message source and destination	Cx: Information element name	Information source in SIP SUBSCRIBE	Description
I-CSCF to HSS	User Public Identity	Request-URI	This information element indicates the public user identity

Table A.3.2.1-5b provides the parameters sent from the HSS that need to be mapped to the SIP SUBSCRIBE request (flow 6) and sent to the S-CSCF.

Table A.3.2.1-5b: Cx: User registration status query procedure (HSS to I-CSCF)

Message source and destination	Cx: Information element name	Mapping to SIP header in SIP SUBSCRIBE	Description
HSS to I-CSCF	S-CSCF name	Route header field	This information indicates the serving CSCF's name of that user

6. **SUBSCRIBE request (I-CSCF to S-CSCF) - see example in table A.3.2.1-6**

The I-CSCF forwards the SUBSCRIBE request to the S-CSCF (S-CSCF#2) that will handle the termination.

Table A.3.2.1-6: SUBSCRIBE request (I-CSCF to S-CSCF)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP icscf2_s.home2.net;branch=z9hG4bK871y12.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK351g45.1, SIP/2.0/UDP
     pcscf1.home1.net;branch=z9hG4bK240f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKnashds7
Max-Forwards: 67
P-Asserted-Identity:
P-Charging-Vector:
Privacy:
Route: <sip:scscf2.home2.net;lr>
Record-Route:
From:
To:
Call-ID:
CSeq:
Event:
Expires:
Accept:
Contact:
Content-Length:
```

NOTE: The I-CSCF does not add itself to the Record-Route header, as it has no need to remain in the signalling path for the subsequent requests.

7. **Evaluation of initial filter criteria**

S-CSCF#2 validates the service profile of this subscriber and evaluates the initial filter criteria. For sip:user2_public1@home2.net S-CSCF#2 has termination initial filter criteria with service points of interest of Method = SUBSCRIBE and Event = "presence" that informs the S-CSCF to route the SUBSCRIBE request to the Application Server ps.home2.net. The S-CSCF#2 has preconfigured information not to create a Record-Route entry for this request.

8. **SUBSCRIBE request (S-CSCF to PS) – see example in table A.3.2.1-8**

The S-CSCF forwards the SUBSCRIBE request to the PS.

Table A.3.2.1-8: SUBSCRIBE request (S-CSCF to PS)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP scscf2.home2.net;branch=z9hG4bK764z87.1, SIP/2.0/UDP
      icscf2_s.home2.net;branch=z9hG4bK871y12.1, SIP/2.0/UDP
      scscf1.home1.net;branch=z9hG4bK351g45.1, SIP/2.0/UDP
      pcscf1.home1.net;branch=z9hG4bK240f34.1, SIP/2.0/UDP
      [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKnashds7
Max-Forwards: 66
P-Asserted-Identity:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"; orig-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
      ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Privacy:
Route: <sip:ps.home2.net;lr>, <sip:scscf2.home2.net;lr>
Record-Route:
From:
To:
Call-ID:
CSeq:
Event:
Expires:
Accept:
Contact:
Content-Length:
```

P-Charging-Vector:	The S-CSCF stores the originating Inter Operator Identifier (IOI) parameter received and populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header and removes the terminating IOI parameter.
P-Charging-Function-Addresses:	The S-CSCF populates the P-Charging-Function-Addresses header field to be passed to the PS.

9. **Authorization of watcher**

The PS performs the necessary authorization checks on the originator to ensure it is allowed to watch the presentity. In this example all privacy conditions are met, so the PS sends a 200 (OK) response to the S-CSCF.

In the case where the privacy/authorization checks failed, then a necessary 2xx or 4xx response would be sent to the S-CSCF. The selection of the correct response code depends on the presentity's subscription authorization policy document.

10. **200 (OK) response (PS to S-CSCF) - see example in table A.3.2.1-10**

The PS sends the response to S-CSCF#2.

Table A.3.2.1-10: 200 (OK) response (PS to S-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP scscf2.home2.net;branch=z9hG4bK764z87.1, SIP/2.0/UDP
icscf2_s.home2.net;branch=z9hG4bK871y12.1, SIP/2.0/UDP
      scscf1.home1.net;branch=z9hG4bK351g45.1, SIP/2.0/UDP
      pcscf1.home1.net;branch=z9hG4bK240f34.1, SIP/2.0/UDP
      [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKnashds7
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"; orig-ioi=home1.net;
      term-ioi=home2.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
      ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Record-Route:
From:
To: <sip:user2_public1@home2.net>;tag=151170
Call-ID:
CSeq:
Expires:
Contact: <sip:ps.home2.net>
Content-Length:
```

---------------NEXT CHANGE---------------

A.3.3.2   Watcher subscribing to a resource list, UE in visited network - successful subscription
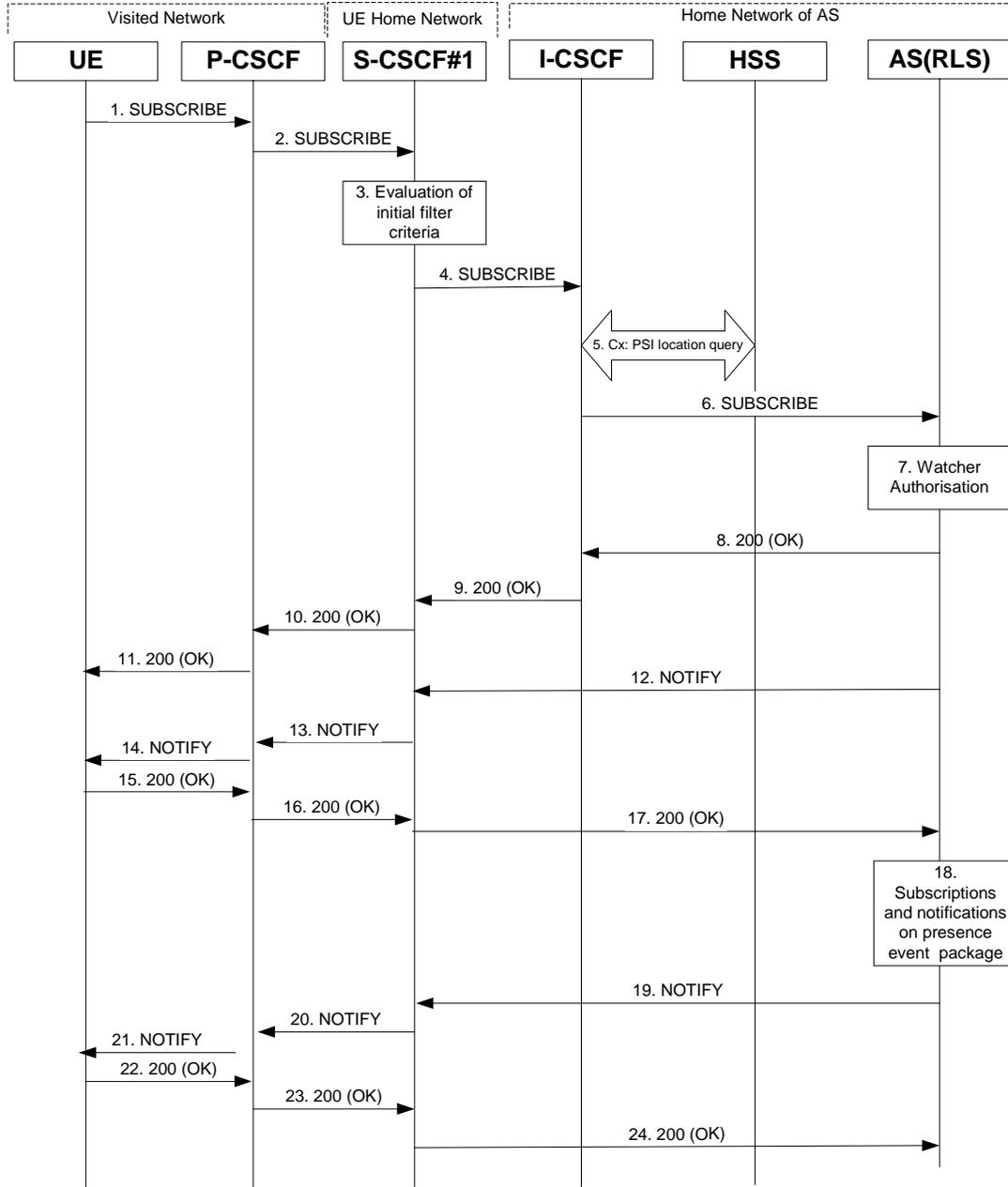

Figure A.3.3.2-1 Watcher subscribing to resource list

Figure A.3.3.2-1 shows a watcher subscribing to resource list event notification. The details of the signalling flows are as follows:

1. **SUBSCRIBE request (UE to P-CSCF) - see example in table A.3.3.2-1**

    A watcher agent in a UE wishes to watch a number of presentities, or certain presence information of these presentities. The list of presentities are identified by a SIP URI. In order to initiate a subscription to the RLS, the UE generates a SUBSCRIBE request indicating support for 'eventlist', together with an indication of the length of time this periodic subscription should last.

Table A.3.3.2-1: SUBSCRIBE request (UE to P-CSCF)

```
SUBSCRIBE sip:user2_list1@home2.net SIP/2.0
Via: SIP/2.0/UDP [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
Max-Forwards: 70
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
Route: <sip:pcscf1.visited1.net:7531;lr;comp=sigcomp>, <sip:orig@scscf1.home1.net;lr>
P-Preferred-Identity: <sip:user1_public1@home1.net>
Privacy: none
From: <sip:user1_public1@home1.net>;tag=31415
To: <sip:user2_list1@home1.net>
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 123 SUBSCRIBE
Require: sec-agree
Proxy-Require: sec-agree
Security-Verify: ipsec-3gpp; q=0.1; alg=hmac-sha-1-96; spi-c=98765432; spi-s=87654321; port-
      c=8642; port-s=7531
Event: presence
Supported: eventlist
Expires: 7200
Accept: application/pidf+xml, application/rlmi+xml, multipart/related
Contact: <sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp>
Content-Length: 0
```

Request-URI: SIP URI of the resource list representing the collection of public user identities whose events the subscriber subscribes to.

Event: This field is populated with the value "presence" to specify the use of the presence package.

Accept: This field is populated with the value "application/pidf+xml", "application/rlmi+xml" and "multipart/related" indicating that the UE supports the eventlist extension additionally to PIDF.

Supported: This field is populated with the value 'eventlist' to specify the support for the eventlist extension.

To: Same as the Request-URI.

2.   **SUBSCRIBE request (P-CSCF to S-CSCF) - see example in table A.3.3.2-2**

The P-CSCF looks up the serving network information for the public user identity that was stored during the registration procedure. The SUBSCRIBE request is forwarded to S-CSCF#1. A Route header is inserted into SUBSCRIBE request. The information for the Route header is taken from the service route determined during registration.

Table A.3.3.2-2: SUBSCRIBE request (P-CSCF to S-CSCF)

```
SUBSCRIBE sip:user2_list1@home2.net SIP/2.0
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Access-Network-Info:
Route: <sip:orig@scscf1.home1.net;lr>
Max-Forwards: 69
P-Asserted-Identity: <sip:user1_public1@home1.net>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"
Privacy:
Record-Route: <sip:pcscf1.visited1.net;lr>
Route: <sip:scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Supported:
Expires:
Accept:
Contact:
Content-Length:
```

3.   **Evaluation of initial filter criteria**

S-CSCF#1 validates the service profile of this subscriber and evaluates the initial filter criteria. For this example, assume no application server involvement.

4.   **SUBSCRIBE request (S-CSCF to I-CSCF) - see example in table A.3.3.2-4**

S-CSCF#1 performs an analysis of the destination address. As the destination address points to a resource that is in a different network as the S-CSCF, the S-CSCF sends the request to the I-CSCF of home2.net.

Table A.3.3.2-4: SUBSCRIBE request (S-CSCF to I-CSCF)

```
SUBSCRIBE sip:user2_list1@home2.net SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK344a65.1, SIP/2.0/UDP
     pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
Max-Forwards: 68
P-Asserted-Identity: <sip:user1_public1@home1.net>, <tel:+1-212-555-1111>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"; orig-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
     ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Privacy:
Record-Route: <orig@sip:scscf1.home1.net;lr>, <sip:pcscf1.visited1.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Supported:
Expires:
Accept:
Contact:
Content-Length:
```

5.   **PSI location query**

The I-CSCF sends a query to the HSS to find the RLS where sip:user2_list1@home2.net is hosted. The HSS responds with the address of the RLS.

For detailed message flows see 3GPP TS 29.228 [10].

Table A.3.3.2-5a provides the parameters in the SIP SUBSCRIBE request (flow 4), which are sent to the HSS.

Table A.3.3.2-5a Cx: User registration status query procedure (I-CSCF to HSS)

Message source & destination	Cx: Information element name	Information source in SIP SUBSCRIBE	Description
I-CSCF to HSS	User Public Identity	Request-URI:	This information element indicates the PSI of the RLS

Table A.3.3.2-5b provides the parameters sent from the HSS that need to be mapped to SIP SUBSCRIBE (flow 6) and sent to S-CSCF.

Table A.3.3.2-5b Cx: User registration status query procedure (HSS to I-CSCF)

Message source & destination	Cx: Information element name	Mapping to SIP header in SIP SUBSCRIBE	Description
HSS to I-CSCF	S-CSCF name	Route header field	This information indicates the address of the RLS

6.   **SUBSCRIBE request (I-CSCF to RLS) - see example in table A.3.3.2-6**

The I-CSCF forwards the SUBSCRIBE request to the RLS.

Table A.3.3.2-6: SUBSCRIBE request (I-CSCF to S-CSCF)

```
SUBSCRIBE sip:user2_list1@home2.net SIP/2.0
Via: SIP/2.0/UDP icscf2_s.home2.net;branch=z9hG4bK871y12.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK344a65.1, SIP/2.0/UDP
     pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
Max-Forwards: 67
P-Asserted-Identity:
P-Charging-Vector:
Privacy:
Record-Route:
Route: <sip:rls.home2.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Supported:
Expires:
Accept:
Contact:
Content-Length:
```

7.   **Authorization of watcher**

The RLS performs the necessary authorization checks on the originator to ensure that he/she is authorized to use the resource list. In this example this condition has been met, so the PS sends a 200 (OK) response to the S-CSCF. If the previous condition failed, then a 403 (Forbidden) response would be sent to the S-CSCF.

8. **200 (OK) response (RLS to I-CSCF) - see example in table A.3.3.2-8**

    The RLS sends the response to the S-CSCF.

Table A.3.3.2-8: 200 (OK) response (RLS to I-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP icscf2_s.home2.net;branch=z9hG4bK871y12.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK344a65.1, SIP/2.0/UDP
     pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"; orig-ioi=home1.net;
     term-ioi=home2.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
     ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Record-Route:
From:
To: <sip:user2_list1@home2.net>;tag=151170
Call-ID:
CSeq:
Require: eventlist
Expires:
Contact: <sip:rls.home2.net>
Content-Length: 0
```

P-Charging-Vector: The RLS stores the originating Inter Operator Identifier (IOI) parameter and populates the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The RLS stores the P-Charging-Function-Addresses header field and passes this header to the I-CSCF.

9. **200 (OK) response (I-CSCF to S-CSCF) - see example in table A.3.3.2-9**

    The I-CSCF forwards the response to the S-CSCF.

Table A.3.3.2-9: 200 (OK) response (I-CSCF to S-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK344a65.1, SIP/2.0/UDP
     pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Charging-Vector:
Record-Route:
From:
To:
Call-ID:
CSeq:
Require:
Expires:
Contact:
Content-Length: 0
```

P-Charging-Vector: The RLS stores the header and passes this header to the S-CSCF.

10. **200 (OK) response (S-CSCF to P-CSCF) - see example in table A.3.3.2-10**

    The S-CSCF forwards the response to the P-CSCF.

Table A.3.3.2-10: 200 (OK) response (S-CSCF to P-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
    [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"
Record-Route:
From:
To:
Call-ID:
CSeq:
Require:
Expires:
Contact:
Content-Length:
```

P-Charging-Vector: The S-CSCF stores the terminating Inter Operator Identifier (IOI) parameter.

11. **200 (OK) response (P-CSCF to UE) - see example in table A.3.3.2-11**

    The P-CSCF forwards the response to the watcher agent in the UE.

Table A.3.3.2-11: 200 (OK) response (P-CSCF to UE)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
Record-Route: <sip:orig@scscf1.home1.net;lr>, <sip:pcscf1.home1.net:7531;lr;comp=sigcomp>
From:
To:
Call-ID:
CSeq:
Require:
Expires:
Contact:
Content-Length:
```

12. **NOTIFY request (RLS to S-CSCF) – see example in table A.3.3.2-12**

The RLS generates a NOTIFY request including the RLMI document as a result of the SUBSCRIBE request.

Table A.3.3.2-12: NOTIFY request (RLS to S-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP rls.home2.net;branch=z9hG4bK240f34.1
Max-Forwards: 70
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=123551024"; orig-ioi=home1.net
Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.visited1.net;lr>
From: <sip:user2_list1@home1.net>;tag=151170
To: <sip:user1_public1.home1.net>;tag=31415
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 89 NOTIFY
Subscription-State: active;expires=5000
Require: eventlist
Event: presence
Contact: <sip:rls.home1.net>
Content-Type: application/rlmi+xml;charset="UTF-8"
Content-Length: (...)

<?xml version="1.0" encoding="UTF-8"?>
  <list xmlns="urn:ietf:params:xml:ns:rmli"
        uri="sip:user1_list1@home1.net" version="1" fullState="true">
     <resource uri="pres:user2_public1@home2.net" name="Kovacs Janos">
       <instance id="hqzsuxtfyq" state="active" cid="ZvSvkz@rls.home2.net"/>
     </resource>
     <resource uri="pres:user3_public1@home2.net" name="Szabo Bela">
       <instance id="aakdsjklsa" state="active" cid="HJjbssk@rls.home2.net"/>
     </resource>
  </list>
```

P-Charging-Vector: The RLS populates the icid parameter with a globally unique value and populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

13. **NOTIFY request (S-CSCF to P-CSCF) - see example in table A.3.3.2-13**

The S-CSCF#1 forwards the NOTIFY request to the P-CSCF.

Table A.3.3.2-13: NOTIFY request (S-CSCF to P-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     rls.home2.net;branch=z9hG4bK240f34.1
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=123551024"
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
     ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Max-Forwards: 69
Record-Route: <sip:scscf1.home1.net;lr>
Route: <sip:pcscf1.visited1.net;lr>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Require:
Event:
Contact:
Content-Type:
Content-Length:

(…)
```

P-Charging-Vector: The S-CSCF stores the originating Inter Operator Identifier (IOI) parameter.

P-Charging-Function-Addresses: The RLS populates the P-Charging-Function-Addresses header field to be passed to the I-CSCF.

14. **NOTIFY request (P-CSCF to UE) - see example in table A.3.3.2-14**

    The P-CSCF forwards the NOTIFY request to the watcher in the UE.

Table A.3.3.2-14: NOTIFY request (P-CSCF to UE)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     rls.home2.net;branch=z9hG4bK240f34.1
Max-Forwards: 68
Record-Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.home1.net:7531;lr;comp=sigcomp>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Require:
Event: Contact:
Content-Type:
Content-Length:

(…)
```

15. **200 (OK) response (UE to P-CSCF) - see example in table A.3.3.2-15**

    The UE acknowledges the NOTIFY request with a 200 (OK) to the P-CSCF.

Table A.3.3.2-15: 200 (OK) response (UE to P-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     rls.home2.net;branch=z9hG4bK240f34.1
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
From:
To:
Call-ID:
CSeq:
Content-Length: 0
```

16. **200 (OK) response (P-CSCF to S-CSCF) – see example in table A.3.3.2-16**

    The P-CSCF forwards the 200 (OK) response to the S-CSCF#1.

Table A.3.3.2-16: 200 (OK) response (P-CSCF to S-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     rls.home2.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=123551024"
From:
To:
Call-ID:
CSeq:
Content-Length:
```

17. **200 (OK) response (S-CSCF to RLS) - see example in table A.3.3.2-17**

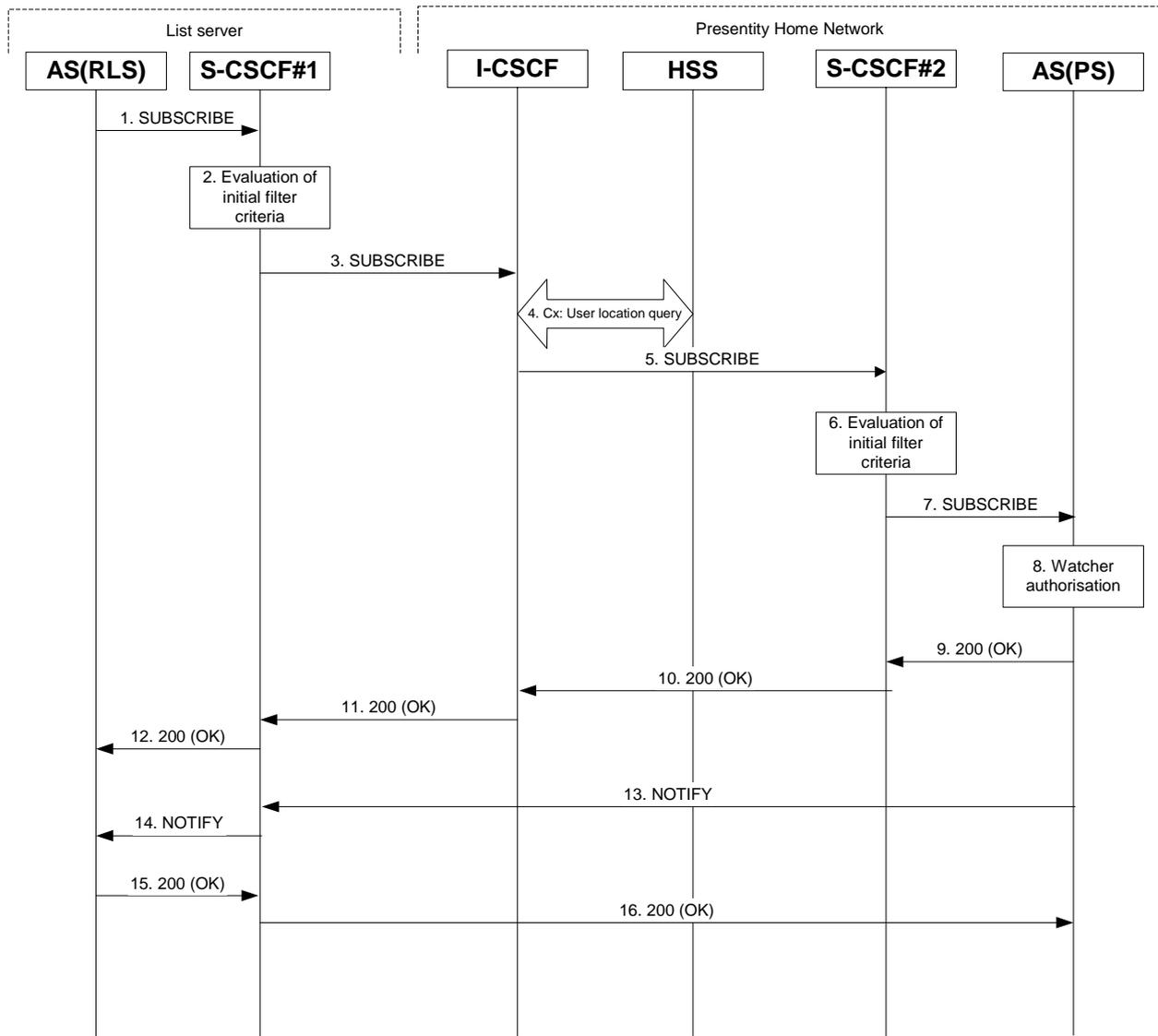The S-CSCF#1 forwards the response to the RLS in the home network of the UE.

Table A.3.3.2-17: 200 (OK) response (S-CSCF to RLS)

```
SIP/2.0 200 OK
Via: SP/2.0/UDP rls.home2.net;branch=z9hG4bK240f34.1
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=123551024"; orig-ioi=home1.net:
      term-ioi=home1.net
From:
To:
Call-ID:
CSeq:
Content-Length:
```

P-Charging-Vector: The S-CSCF insertes the originating Inter Operator Identifier (IOI) parameter received and populates the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter of this header.

----------------NEXT CHANGE--------------

A.3.4.1 Successful subscription

Figure A.3.4.1-1 RLS subscribing to presentities in different network

Figure A.3.4.1-1 shows the RLS subscribing to presence event notification about a presentity. The presentity is in a different IM CN subsystem. The details of the signalling flows are as follows:

1. **SUBSCRIBE request (RLS to S-CSCF) – see example in table A.3.4.1-1**

    The RLS resolves the watcher's resource address (the address is received according to subclause A.3.3) and subscribes to presence event notification at all the presentities that are represented by the resource list SIP URI. The home network of these presentities can be different or in the same network, as the RLS. In this example only a single subscription is shown where the home network of the presentity is another network. Subscriptions to other presentities follow a similar procedure. To initiate a subscription, the RLS generates a SUBSCRIBE request containing the "presence" event that it wishes to be notified of, together with an indication of the length of time this periodic subscription should last. The RLS sends the SUBSCRIBE request to the S-CSCF of "sip:user1_public1@home1.net" (S-CSCF#1). The address of S-CSCF#1 is either remembered from previous transactions (when "sip:user1_public1@home1.net" has subscribed for the resource list) or queried by the RLS using the Sh interface.

Table A.3.4.1-1 SUBSCRIBE request (RLS to S-CSCF)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP rls.home1.net;branch=z9hG4bKehuefdam
Max-Forwards: 70
Route: <sip:scscf1.home1.net;lr>
P-Asserted-Identity: <sip:user1_public1@home1.net>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=323551024"; orig-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
      ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
From: <sip:user1_public1@home1.net>;tag=31415
To: <sip:user2_public1@home2.net>
Call-ID: q987a9a87g087abgf7qyg7ag
CSeq: 123 SUBSCRIBE
Event: presence
Expires: 7200
Accept: application/pidf+xml
Contact: <sip:rls.home1.net>
Content-Length: 0
```

Request-URI:	Public user identity whose events the RLS subscribes to.
P-Charging-Vector:	The RLS populates the icid parameter with a new globally unique value and populates the originating Inter Operator Identifier (IOI) parameter with the identifier of its own network of RLS.
P-Charging-Function-Addresses:	The RLS populates the P-Charging-Function-Addresses header field to be passed to the S-CSCF.
To:	Same as the Request-URI.
Event:	This field is populated with the value "presence" to specify the use of the presence package.
Accept:	This field is populated with the value "application/pidf+xml".

2. **Evaluation of initial filter criteria**

   S-CSCF#1 validates the service profile of this subscriber and evaluates the initial filter criteria. For this example, assume no application server involvement.

3. **SUBSCRIBE request (S-CSCF to I-CSCF) – see example in table A.3.4.1-3**

   S-CSCF#1 performs an analysis of the destination address, and determines the network operator to whom the destination subscriber belongs. S-CSCF#1 forwards the request to the I-CSCF.

Table A.3.4.1-3 SUBSCRIBE request (S-CSCF to I-CSCF)

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bKehuehjgt, SIP/2.0/UDP
      rls.home1.net;branch=z9hG4bKehuefdam
Max-Forwards: 69
Record-Route: <sip:orig@scscf1.home1.net;lr>
P-Asserted-Identity:
P-Charging-Vector:
From:
To:
Call-ID:
CSeq:
Event:
Expires:
Accept:
Contact:
Content-Length:
```

P-Charging-Vector:	The S-CSCF stores the originating Inter Operator Identifier (IOI) parameter received.

4.   **Cx: User Location Query procedure**

The I-CSCF sends a query to the HSS to find out the S-CSCF of the presentity. The HSS responds with the address of the current S-CSCF for the presentity.

For detailed message flows see 3GPP TS 29.228 [10].

Table A.3.4.1-4a provides the parameters in the SIP SUBSCRIBE request (flow 3), which are sent to the HSS.

Table A.3.4.1-4a: Cx: User registration status query procedure (I-CSCF to HSS)

Message source and destination	Cx: Information element name	Information source in SIP SUBSCRIBE	Description
I-CSCF to HSS	User Public Identity	Request-URI	This information element indicates the public user identity

Table A.3.4.1-4b provides the parameters sent from the HSS that need to be mapped to SIP SUBSCRIBE request (flow 5) and sent to the S-CSCF.

Table A.3.4.1-4b: Cx: User registration status query procedure (HSS to I-CSCF)

Message source and destination	Cx: Information element name	Mapping to SIP header in SIP SUBSCRIBE	Description
HSS to I-CSCF	S-CSCF name	Route header field	This information indicates the serving CSCF's name of that user

5.   **SUBSCRIBE request (I-CSCF to S-CSCF) - see example in table A.3.4.1-5**

The I-CSCF forwards the SUBSCRIBE request to the S-CSCF#2 that will handle the termination.

**Table A.3.4.1-5: SUBSCRIBE request (I-CSCF to S-CSCF)**

```
SUBSCRIBE sip:user2_public1@home2.net SIP/2.0
Via: SIP/2.0/UDP icscf2_s.home2.net;branch=z9hG4bKj5hgrt2o, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bKehuehjgt, SIP/2.0/UDP
     rls.home1.net;branch=z9hG4bKehuefdam
Max-Forwards: 68
P-Asserted-Identity:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=323551024"; orig-ioi=home1.net;
Route: <sip:scscf2.home2.net;lr>
Record-Route:
From:
To:
Call-ID:
CSeq:
Event:
Expires:
Accept:
Contact:
Content-Length:
```

6.   **Evaluation of initial filter criteria**

S-CSCF#2 validates the service profile of this subscriber and evaluates the initial filter criteria. For sip:user2_public1@home2.net the S-CSCF has Termination initial Filter Criteria with Service Points of Interest of Method = SUBSCRIBE AND Event = "presence" that informs the S-CSCF to route the SUBSCRIBE request to the Application Server ps.home2.net. The S-CSCF#2 has preconfigured information not to create a Record-Route entry for this request.

----------------NEXT CHANGE---------------

A.5.2.1   Successful notification
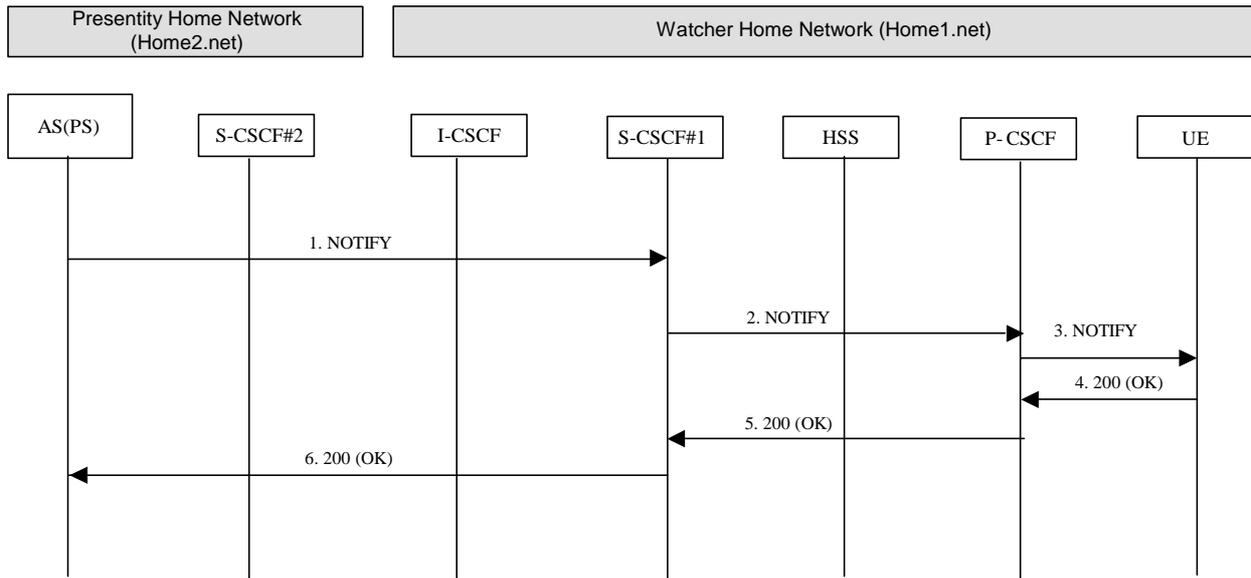
Figure A.5.2.1-1: Notification to watcher in the visited network

Figure A.5.2.1-1 shows how a watcher is notified of updates to a presentity's presence information. The signalling flow is applicable to the case where the watcher and presentity are in the same or in different IM CN subsystems.

1. **NOTIFY request (PS to S-CSCF) – see example in table A.5.2.1-1**

   The PS determines which authorized watchers are entitled to receive the updates of the presence information for this presentity. For each appropriate watcher, the PS sends a NOTIFY request that contains the updated state of presence information. The NOTIFY request may either contain the complete set of presence information, or only the information that has changed since the last notification. In this example, the watcher indicated preference for partial notification in the SUBSCRIBE request, so the NOTIFY request is formulated according to draft-ietf-simple-partial-notify [24] and draft-ietf-simple-partial-pidf-format [38] by including only the information that has changed since the last notification. (Note that the first NOTIFY request has contained the full state of the presence information.)

Table A.5.2.1-1: NOTIFY request (PS to S-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP ps.home2.net;branch=z9hG4bK240f34.1
Max-Forwards: 70
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=523551024"; orig-ioi=home2.net
Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.home1.net;lr>
From: <sip:user2_public1@home2.net>;tag=151170
To: <sip:user1_public1@home1.net>;tag=31415
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 43 NOTIFY
Subscription-State: active;expires=5000
Event: presence
Contact: <sip:ps.home2.net>
Content-Type: application/pidf-diff+xml
Content-Length: (...)

<?xml version="1.0" encoding="UTF-8"?>
   <pidf-diff xmlns="urn:ietf:params:xml:ns:pidf-diff"
         entity="pres:user2_public1@home2.net" version="1">

    <add parent="presence" sel="*[2]">
      <![CDATA[
```

```
     <tuple id="xfjsk">
      <status>
        <basic>open</basic>
        <es:status-icon>http://example.com/~user2/iconABC.gif</es:status-icon>
      </status>
      <et:class>voice</et:class>
      <contact priority="0.2">tel:40302020@home2.net</contact>
      <note xml:lang="en">This is a new tuple inserted as the 2nd tuple.</note>
      <timestamp>2004-11-01T11:49:29Z</timestamp>
     </tuple>
       ]] >
   </add>
   <replace sel="presence/tuple[@id="a8098a.672364762364"]/status/basic/text()">closed
   </replace>

   <remove sel="presence/tuple[@id="a8098a.672364762364"]/status/es:privacy"/>

   <remove sel="presence/tuple[@id="a8098a.672364762364"]/status/rs:activity"/>

   <replace sel="presence/tuple[@id="a8098a.672364762364"]/status/es:status-icon/text()">
   http://example.com/~user2/iconXYZ.gif</replace>

  </pidf-diff>
```

P-Charging-Vector: The PS populates the icid parameter with a globally unique value and populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

2. **NOTIFY request (S-CSCF to P-CSCF) - see example in table A.5.2.1-2**

   The S-CSCF forwards the NOTIFY request to the P-CSCF.

Table A.5.2.1-2: NOTIFY request (S-CSCF to P-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     scscf2.home2.net;branch=z9hG4bK764z87.1, SIP/2.0/UDP ps.home2.net;branch=z9hG4bK240f34.1
Max-Forwards: 69
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=523551024"
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
     ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Route: <sip:pcscf1.home1.net;lr>
Record-Route: <sip:scscf2.home2.net;lr>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Event:
Contact:
Content-Type:
Content-Length:

(…)
```

P-Charging-Vector: The S-CSCF stores the originating Inter Operator Identifier (IOI) parameter.

P-Charging-Function-Addresses: The S-CSCF populates the P-Charging-Function-Addresses header field to be passed to the P-CSCF.

3. **NOTIFY request (P-CSCF to UE) - see example in table A.5.2.1-3**

   The P-CSCF forwards the NOTIFY request to the UE.

Table A.5.2.1-3: NOTIFY request (P-CSCF to UE)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP pcscf1.home1.net;branch=240f34.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK351g45.1, SIP/2.0/UDP ps.home2.net;branch=z9hG4bK348923.1
Max-Forwards: 68
Record-Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.home1.net:7531;lr;comp=sigcomp>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Event:
Contact:
Content-Type:
Content-Length:

(…)
```

4.   **200 (OK) response (UE to P-CSCF) - see example in table A.5.2.1-4**

The UE acknowledges the NOTIFY request with a 200 (OK) response to the P-CSCF.

Table A.5.2.1-4: 200 (OK) response (UE to P-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP pcscf1.home1.net;branch=240f34.1, SIP/2.0/UDP
     scscf2.home2.net;branch=z9hG4bK764z87.1, SIP/2.0/UDP ps.home2.net;branch=z9hG4bK348923.1
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
From:
To:
Call-ID:
CSeq:
Content-Length: 0
```

5.   **200 (OK) response (P-CSCF to S-CSCF) - see example in table A.5.2.1-5**

The P-CSCF forwards the 200 (OK) response to the S-CSCF.

Table A.5.2.1-5: 200 (OK) response (P-CSCF to S-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     ps.home2.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=523551024"
From:
To:
Call-ID:
CSeq:
Content-Length:
```

6.   **200 (OK) response (S-CSCF to PS) - see example in table A.5.2.1-6**

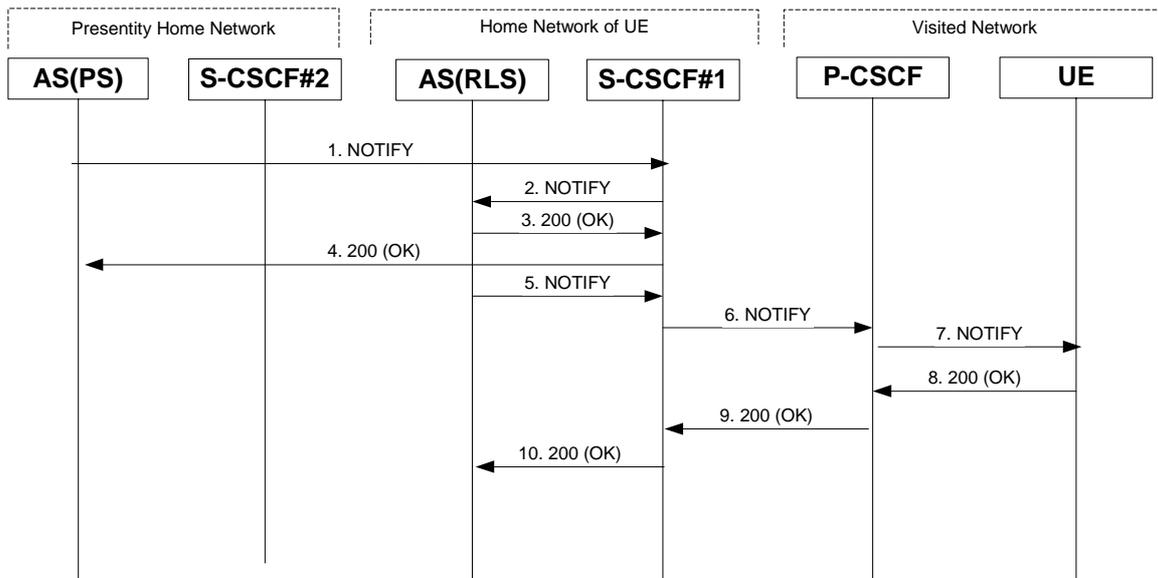The S-CSCF forwards the 200 (OK) response to the PS.

Table A.5.2.1-6: 200 (OK) response (S-CSCF to PS)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP SIP/2.0/UDP ps.home2.net;branch=z9hG4bK240f34.1
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=523551024"; orig-
     ioi=home1.net:term-ioi=home2.net
From:
To:
Call-ID:
CSeq:
Content-Length:
```

P-Charging-Vector: The S-CSCF inserts the originating Inter Operator Identifier (IOI) parameter and populates the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter of this header.

A.5.3 Notification to resource list in a different network and notification to watcher in the visited network

A.5.3.1 Successful notification

Figure A.5.3.1-1: Notification to resource list in a different network and notification to watcher in the visited network

Figure A.5.3.1-1 shows the PS providing presence event notification about a presentity to a RLS in a different network. This notification triggers the RLS to provide presence event notification to the watcher. The details of the signalling flows are as follows:

1. **NOTIFY request (PS to S-CSCF) - see example in table A.5.3.1-1**

   The PS determines which authorized watchers are entitled to receive presence information. For each appropriate watcher, the PS sends a NOTIFY request that contains the updated state of presence information. In this example the notification is only sent to the RLS.

   The NOTIFY request may either contain the complete set of presence information, or only those presence information that have changed since the last notification. For this example, the complete set of presence information is sent.

Table A.5.3.1-1: NOTIFY request (PS to S-CSCF)

```
NOTIFY sip:rls.home1.net SIP/2.0
Via: SIP/2.0/UDP ps.home2.net;branch=z9hG4bK240f34.1
Max-Forwards: 70
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=623551024"; orig-ioi=home12.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
      ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Route: <sip:scscf1.home1.net;lr>
From: <sip:user2_public1@home2.net>;tag=151170
To: <sip:user1_public1@home1.net>;tag=31415
Call-ID: gahjt393yhakfh83hfasl98a
CSeq: 43 NOTIFY
Subscription-State: active;expires=5000
Event: presence
Contact: <sip:ps.home2.net>
Content-Type: application/pidf+xml
Content-Length: (...)

<?xml version="1.0" encoding="UTF-8"?>
   <presence xmlns="urn:ietf:params:xml:ns:pidf"
             xmlns:es="urn:ietf:params:xml:ns:pidf:status:rpid-status"
             xmlns:et="urn:ietf:params:xml:ns:pidf:rpid-tuple"
             xmlns:ep="urn:ietf:params:xml:ns:pidf:rpid-person"
             xmlns:dmp="urn:ietf:params:xml:ns:pidf:person"
             xmlns:pcp="urn:ietf:params:xml:ns:pidf:servcaps"
             xmlns:ci="urn:ietf:params:xml:ns:pidf:cipid"
        entity="pres:user2_public1@home2.net ">

    <tuple id="a8098a.672364762364">
      <status>
        <basic>open</basic>
        <es:privacy><text/></es:privacy>
        <es:status-icon>http://example.com/~user2/icon.gif</es:status-icon>
      </status>
      <et:class>sip</et:class>
      <pcp:video>false</pcp:video>
      <pcp:audio>true</pcp:audio>
      <contact priority="0.8">sip:user2_public1@home2.net</contact>
      <note xml:lang="en">Don't Disturb Please!</note>
      <note xml:lang="fr">Ne derangez pas, s'il vous plait</note>
      <timestamp>2003-08-27T17:35:29Z</timestamp>
    </tuple>

    <dmp:person>
      <ep:class>presentity</ep:class>
      <ci:homepage>http://example.com/~user2</ci:homepage>
      <ci:card>http://example.com/~user2/card.vcd</ci:card>
      <dmp:status>
        <ep:activities><ep:meeting/></ep:activities>
        <ep:place-type until="2003-08-27T17:30:00Z">office</ep:place-type>
      </dmp:status>
    </dmp:person>

  </presence>
```

P-Charging-Vector:	The PS populates the icid parameter with a globally unique value and populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.
P-Charging-Function-Addresses:	The PS populates the P-Charging-Function-Addresses header field to be passed to the S-CSCF.

2. **NOTIFY request (S-CSCF to RLS) - see example in table A.5.3.1-2**

   The S-CSCF#1 forwards the NOTIFY request to the RLS.

Table A.5.3.1-2: NOTIFY request (S-CSCF to RLS)

```
NOTIFY sip:rls.home1.net SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bKehuehjgt, SIP/2.0/UDP
     scscf2.home2.net;branch=z9hG4bK764z87.1, SIP/2.0/UDP ps.home2.net;branch=z9hG4bK348923.1
Max-Forwards: 69
P-Charging-Vector:
P-Charging-Function-Addresses:
Record-Route: <sip:scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Event:
Contact:
Content-Type:
Content-Length:

(…)
```

P-Charging-Vector: The S-CSCF stores the originating Inter Operator Identifier (IOI) parameter and populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The S-CSCF stores the P-Charging-Function-Addresses header field and passes this header to the RLS.

3. **200 (OK) response (RLS to S-CSCF) - see example in table A.5.3.1-3**

   The RLS generates a 200 (OK) response to the NOTIFY request.

Table A.5.3.1-3: 200 (OK) response (RLS to S-CSCF)

```
SIP/2.0 200 OK
Via:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=623551024"; orig-
     ioi=home1.net:term-ioi=home1.net
From:
To:
Call-ID:
CSeq:
Content-Length: 0
```

P-Charging-Vector: The RLS stores the terminating Inter Operator Identifier (IOI) parameter and populates the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter of this header.

4. **200 (OK) response (S-CSCF to PS) - see example in table A.5.3.1-4**

   The S-CSCF#1 forwards the 200 (OK) response to the PS.

Table A.5.3.1-4: 200 (OK) response (S-CSCF to PS)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP ps.home2.net;branch=z9hG4bK348923.1
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=623551024"; orig-
     ioi=home1.net:term-ioi=home1.net
From:
To:
Call-ID:
CSeq:
Content-Length:
```

   P-Charging-Vector: The S-CSCF stores the terminating Inter Operator Identifier (IOI) parameter and populates
the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter
of this header.

----------------NEXT CHANGE-------------

A.6.2 PUA subscribing to watcher list and receiving a notification of an already pending watcher subscription followed by a notification of a subscription from a new watcher not already in the watcher list
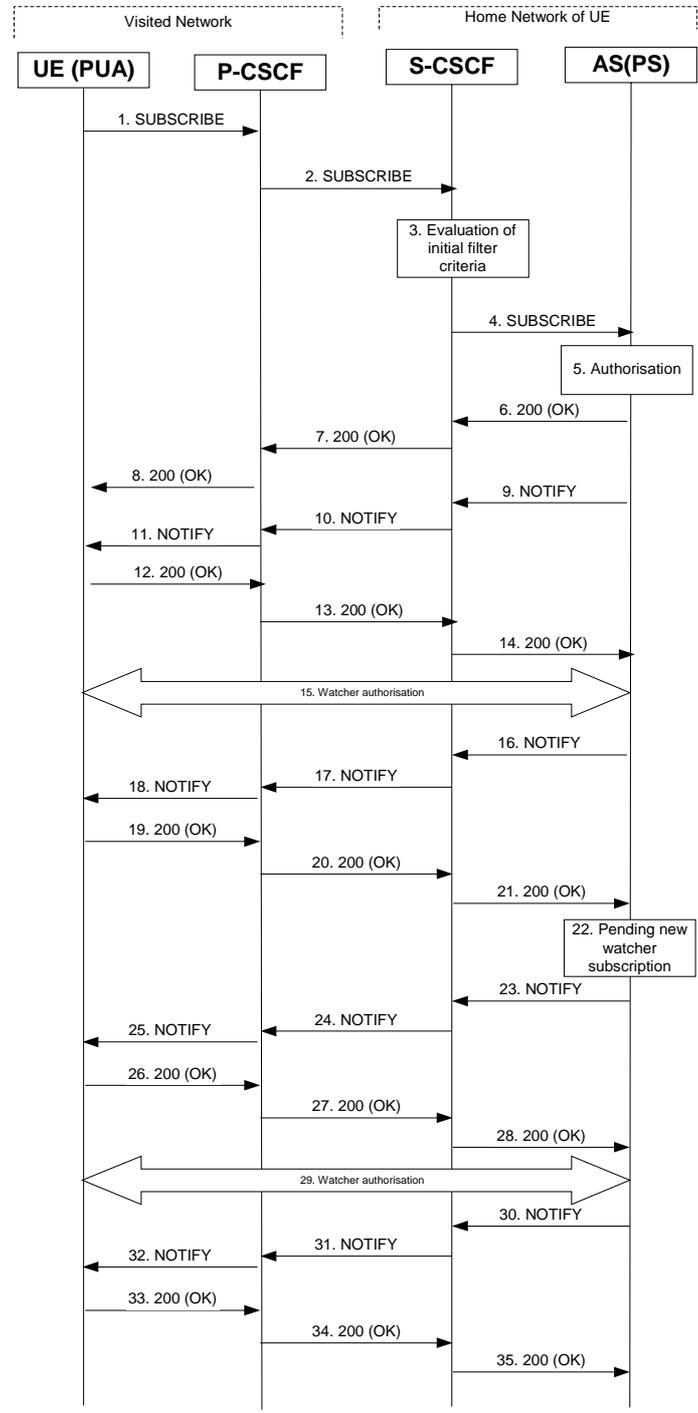
**Figure A.6.2-1: PUA subscribing to watcher list and receiving a notification
of an already pending watcher subscription followed by a notification of a subscription
from a new watcher not already in the watcher list**

Figure A.6.2-1 shows a PUA subscribing to watcher list and receiving a notification of an already pending watcher subscription followed by a notification of a subscription from a new watcher not already in the watcher list. In this

example the default watcherinfo subscription filtering policy is applied meaning that a partial state of a watcher-info document is transported in the ~~notifys~~notifications. The details of the signalling flows as follows:

1. **SUBSCRIBE request (UE to P-CSCF) – see example in table A.6.2-1**

    The presentity wishes to watch his own watcher information, therefore he subscribes for the watcher information template-package of presence. The UE generates a SUBSCRIBE request containing the presence.winfo event, together with an indication of the length of time this periodic subscription should last.

Table A.6.2-1: SUBSCRIBE request (UE to P-CSCF)

```
SUBSCRIBE sip:user1_public1@home1.net SIP/2.0
Via: SIP/2.0/UDP [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
Max-Forwards: 70
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
Route: <sip:pcscf1.visited1.net:7531;lr;comp=sigcomp>, <sip:orig@scscf1.home1.net;lr>
P-Preferred-Identity: <sip:user1_public1@home1.net>
Privacy: none
From: <sip:user1_public1@home1.net>;tag=31415
To: <sip:user1_public1@home1.net>
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 123 SUBSCRIBE
Require: sec-agree
Proxy-Require: sec-agree
Security-Verify: ipsec-3gpp; q=0.1; alg=hmac-sha-1-96; spi-c=98765432; spi=87654321; port-
        c=8642; port-s=7531
Event: presence.winfo
Expires: 7200
Accept: application/watcherinfo+xml
Contact: <sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp>
Content-Length: 0
```

Request URI: Public user identity whose events the subscriber subscribes to. In this case the Public User Identity of the presentity in SIP URI format.

Event: This field is populated with the value "presence.winfo" to specify the use of the watcher information template-package of presence.

Accept: This field is populated with the value 'application/watcherinfo+xml' indicating that the UE supports this body type for notification.

To: Same as the Request-URI.

2.   **SUBSCRIBE request (P-CSCF to S-CSCF) – see example in table A.6.2-2**

The P-CSCF looks up the serving network information for the public user identity that was stored during the registration procedure. The SUBSCRIBE request is forwarded to the S-CSCF. A Route header is inserted into SUBSCRIBE request.

Table A.6.2-2: SUBSCRIBE request (P-CSCF to S-CSCF)

```
SUBSCRIBE sip:user1_public1@home1.net SIP/2.0
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=z9hG4bK120f34.1 ,SIP/2.0/UDP
      [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Access-Network-Info:
Max-Forwards: 69
P-Asserted-Identity: <sip:user1_public1@home1.net>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"
Privacy:
Route: <sip:orig@scscf1.home1.net;lr>
Record-Route: <sip:pcscf1.visited1.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Expires:
Accept:
Contact:
Content-Length:
```

3.   **Evaluation of initial filter criteria**

The S-CSCF validates the service profile of this subscriber and evaluates the initial filter criteria. For sip:user1_public1@home1.net the S-CSCF has originating initial Filter Criteria with Service Point Trigger of Method = SUBSCRIBE AND Event = "presence.winfo" that informs the S-CSCF to route the SUBSCRIBE request to the Application Server sip:ps.home1.net.

4.   **SUBSCRIBE request (S-CSCF to PS) – see example in table A.6.2-4**

The S-CSCF forwards the SUBSCRIBE request to the PS.

Table A.6.2-4: SUBSCRIBE request (S-CSCF to PS)

```
SUBSCRIBE sip:user1_public1@home1.net SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK344a65.1, SIP/2.0/UDP
      pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
      [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Access-Network-Info:
Max-Forwards: 68
P-Asserted-Identity: <sip:user1_public1@home1.net>, <tel:+1-212-555-1111>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"; orig-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
      ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Privacy:
Route: <sip:ps.home1.net;lr>, <sip:scscf1.home1.net;lr>
Record-Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.visited1.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Expires:
Accept:
Contact:
Content-Length:
```

P-Charging-Vector: The S-CSCF inserts the originating Inter Operator Identifier (IOI) parameter received and populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The S-CSCF stores the P-Charging-Function-Addresses header field and passes this header to the PS.

5. **Authorization**

   The PS performs the necessary authorization checks on the originator. In this example, the originator is the owner of the watcher information, so he/she is authorized to see the full watcher information.

   In other examples (when the originator is not the owner of the watcher information) subscribers are only allowed to monitor the state of their own subscription, which means that they will receive notifications only containing the state of their own subscription. This requires that a terminating initial Filter Criteria with Service Point Trigger of Method = SUBSCRIBE AND Event = "presence.winfo" has been defined for the user sip:user1_public1@home1.net.

6. **200 (OK) response (PS to S-CSCF) - see example in table A.6.2-6**

   The PS sends the response to the S-CSCF.

   Table A.6.2-6: 200 (OK) response (PS to S-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK344a65.1, SIP/2.0/UDP
     pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"; orig-
     ioi=home1.net:term-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
     ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Record-Route:
From:
To: <sip:user1_public1@home1.net>;tag=151170
Call-ID:
CSeq:
Expires:
Contact: <sip:ps.home1.net>
Content-Length: 0
```

P-Charging-Vector: The PS stores the originating Inter Operator Identifier (IOI) parameter and populates the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The PS stores the P-Charging-Function-Addresses header field and passes this header to the S-CSCF.

7. **200 (OK) response (S-CSCF to P-CSCF) - see example in table A.6.2-7**

   The S-CSCF forwards the response to the P-CSCF.

   Table A.6.2-7: 200 (OK) response (S-CSCF to P-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=023551024"
Record-Route:
From:
To:
Call-ID:
CSeq:
Expires:
Contact:
Content-Length:
```

P-Charging-Vector: The S-CSCF stores the terminating Inter Operator Identifier (IOI) parameter.

8.   **200 (OK) response (P-CSCF to UE) - see example in table A.6.2-8**

The P-CSCF forwards the response to the PUA in the UE.

Table A.6.2-8: 200 (OK) response (P-CSCF to UE)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
Record-Route: <sip:orig@scscf1.home1.net;lr>, <sip:pcscf1.home1.net:7531;lr;comp=sigcomp>
From:
To:
Call-ID:
CSeq:
Expires:
Contact:
Content-Length:
```

9.   **NOTIFY request (PS to S-CSCF) - see example in table A.6.2-9**

After the PS generated a 200 (OK) response to the SUBSCRIBE request from the UE, it generates a NOTIFY request containing the current state of the watcher information. The watcher information contains one pending subscription.

Table A.6.2-9 NOTIFY request (PS to S-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP ps.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 70
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=123551024"; orig-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
     ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.visited1.net;lr>
From: <sip:user1_public1@home1.net>;tag=151170
To: <sip:user1_public1@home1.net>;tag=31415
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 89 NOTIFY
Subscription-State: active;expires=7200
Event: presence.winfo
Contact: <sip:ps.home1.net>
Content-Type: application/watcherinfo+xml
Content-Length: (...)

<?xml version="1.0"?>
   <watcherinfo xmlns="urn:ietf:params:xml:ns:watcherinfo"
              version="0" state="full">
    <watcher-list resource="sip:user1_public1@home1.net" package="presence">
      <watcher id="77ajsyy76" event="subscribe"
              status="pending">sip:user2_public1@home2.net</watcher>
    </watcher-list>
   </watcherinfo>
```

P-Charging-Vector: The PS populates the icid parameter with a globally unique value and populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The PS populates the P-Charging-Function-Addresses header field to be passed to the S-CSCF.

10. **NOTIFY request (S-CSCF to P-CSCF) – see example in table A.6.2-10**

The S-CSCF forwards the NOTIFY request to the P-CSCF.

Table A.6.2-10: NOTIFY request (S-CSCF to P-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     ps.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 69
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=123551024"
P-Charging-Function-Addresses:
Route: <sip:pcscf1.visited1.net;lr>
Record-Route: <sip:scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Event:
Contact:
Content-Type:
Content-Length:

(…)
```

P-Charging-Vector: The S-CSCF stores the originating Inter Operator Identifier (IOI) parameter received.

P-Charging-Function-Addresses: The S-CSCF stores the P-Charging-Function-Addresses header field and passes this header to the P-CSCF.

11. **NOTIFY request (P-CSCF to UE) - see example in table A.6.2-11**

The P-CSCF forwards the NOTIFY request to the PUA in the UE.

Table A.6.2-11: NOTIFY request (P-CSCF to UE)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK351g45.1, SIP/2.0/UDP ps.home2.net;branch=z9hG4bK348923.1
Record-Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.home1.net:7531;lr;comp=sigcomp>
Max-Forwards: 68
From:
To:
Call-ID:
CSeq:
Subscription-State:
Event:
Contact:
Content-Type:
Content-Length:

(…)
```

12. **200 (OK) response (UE to P-CSCF) – see example in table A.6.2-12**

The PUA on the UE determines that this is a full state watcher-info document and replaces any current watcher-info with the new document. The UE acknowledges the NOTIFY request with a 200 (OK) response to the P-CSCF.

Table A.6.2-12: 200 (OK) response (UE to P-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
     scscf2.home2.net;branch=z9hG4bK764z87.1, SIP/2.0/UDP ps.home2.net;branch=z9hG4bK348923.1
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
From:
To:
Call-ID:
CSeq:
Content-Length: 0
```

13. **200 (OK) response (P-CSCF to S-CSCF) – see example in table A.6.2-13**

The P-CSCF forwards the 200 (OK) response to the S-CSCF.

Table A.6.2-13: 200 (OK) response (P-CSCF to S-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     ps.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=123551024"
From:
To:
Call-ID:
CSeq:
Content-Length:
```

14. **200 (OK) response (S-CSCF to PS) – see example in table A.6.2-14**

The P-CSCF forwards the response to the PS in the home network of the UE.

Table A.6.2-14: 200 (OK) response (S-CSCF to PS)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP ps.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=123551024"; orig-
     ioi=home1.net:term-ioi=home1.net
From:
To:
Call-ID:
CSeq:
Content-Length:
```

P-Charging-Vector: The S-CSCF insertes the terminating Inter Operator Identifier (IOI) parameter received and populates the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter of this header.

15. **Authorization of watcher**

The presentity determines to allow the watcher to access the presence information. The PUA modifies the subscription authorization policy by authorizing presence information for sip:user2_public1@home1.net.

16. **NOTIFY request (PS to S-CSCF) – see example in table A.6.2-16**

The authorization event means changes in the watcher information, which triggers a new NOTIFY request. The watcher information included in the NOTIFY request contains only information on the watcher whose state has changed, which in this example is the accepted subscription of sip:user2_public1@home1.net.

Table A.6.2-16: NOTIFY request (PS to S-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP ps.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 70
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=223551024"; orig-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
      ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.visited1.net;lr>
From: <sip:user1_public1@home1.net>;tag=151170
To: <sip:user1_public1.home1.net>;tag=31415
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 90 NOTIFY
Subscription-State: active;expires=4900
Event: presence.winfo
Contact: <sip:ps.home1.net>
Content-Type: application/watcherinfo+xml
Content-Length: (...)

<?xml version="1.0"?>
   <watcherinfo xmlns="urn:ietf:params:xml:ns:watcherinfo"
                version="0" state="partial">
     <watcher-list resource="sip:user1_public1@home1.net" package="presence">
       <watcher id="77ajsyy76" event="subscribe"
                status="active">sip:user2_public1@home2.net</watcher>
     </watcher-list>
   </watcherinfo>
```

P-Charging-Vector: The PS populates the icid parameter with a globally unique value and populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The PS populates the P-Charging-Function-Addresses header field to be passed to the S-CSCF.

17. **NOTIFY request (S-CSCF to P-CSCF) – see example in table A.6.2-17**

The S-CSCF forwards the NOTIFY request to the P-CSCF.

Table A.6.2-17: NOTIFY request (S-CSCF to P-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
      ps.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 69
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=223551024"
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
      ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Route: <sip:pcscf1.visited1.net;lr>
Record-Route: <sip:scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Event:
Contact:
Content-Type:
Content-Length:

(…)
```

P-Charging-Vector: The S-CSCF passes this header received.

P-Charging-Function-Addresses: The S-CSCF stores the P-Charging-Function-Addresses header field and passes this header to the P-CSCF.

18. **NOTIFY request (P-CSCF to UE) - see example in table A.6.2-18**

The P-CSCF forwards the NOTIFY request to the PUA in the UE.

Table A.6.2-18: NOTIFY request (P-CSCF to UE)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK351g45.1, SIP/2.0/UDP ps.home2.net;branch=z9hG4bK348923.1
Record-Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.home1.net:7531;lr;comp=sigcomp>
Max-Forwards: 68
From:
To:
Call-ID:
CSeq:
Subscription-State:
Event:
Contact:
Content-Type:
Content-Length:

(…)
```

19. **200 (OK) response (UE to P-CSCF) - see example in table A.6.2-19**

The PUA determines that this is a full state watcher-info document and replaces any current watcher-info with the new document. The UE acknowledges the NOTIFY request with a 200 (OK) response to the P-CSCF.

Table A.6.2-19: 200 (OK) response (UE to P-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
     scscf2.home2.net;branch=z9hG4bK764z87.1, SIP/2.0/UDP ps.home2.net;branch=z9hG4bK348923.1
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
From:
To:
Call-ID:
CSeq:
Content-Length: 0
```

20. **200 (OK) response (P-CSCF to S-CSCF) – see example in table A.6.2-20**

The P-CSCF forwards the 200 (OK) response to the S-CSCF.

Table A.6.2-20: 200 (OK) response (P-CSCF to S-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     ps.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=223551024"
From:
To:
Call-ID:
CSeq:
Content-Length:
```

21. **200 (OK) response (S-CSCF to PS) – see example in table A.6.2-21**

    The P-CSCF forwards the response to the PS in the home network of the UE.

Table A.6.2-21: 200 (OK) response (S-CSCF to PS)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP ps.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=223551024"; orig-ioi=home1.net
      term-ioi=visited1.net
From:
To:
Call-ID:
CSeq:
Content-Length:
```

P-Charging-Vector: The PS inserts the originating Inter Operator Identifier (IOI) parameter received and
                            populates the identifier of its own network to the terminating Inter Operator Identifier (IOI)
                            parameter of this header.

22. **Pending new watcher subscription**

    The PS receives a SUBSCRIBE request from a new watcher and performs the necessary authorization checks
    on the originator and determines that this is a new watcher that is not yet in the watcher list.

23. **NOTIFY request (PS to S-CSCF) - see example in table A.6.2-23**

    The PS generates a NOTIFY request containing watcher information of the new watcher pending
    subscription. Thus, the watcher information contains the partial state.

Table A.6.2-23 NOTIFY request (PS to S-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP ps.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 70
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=323551024"; orig-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
      ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.visited1.net;lr>
From: <sip:user1_public1@home1.net>;tag=151170
To: <sip:user1_public1.home1.net>;tag=31415
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 90 NOTIFY
Subscription-State: active;expires=5000
Event: presence.winfo
Content-Type: application/watcherinfo+xml
Contact: <sip:ps.home1.net;lr>
Content-Length: (...)

<?xml version="1.0"?>
   <watcherinfo xmlns="urn:ietf:params:xml:ns:watcherinfo"
             version="0" state="partial">
     <watcher-list resource="sip:user1_public1@home1.net" package="presence">
       <watcher id="34bytzx54" event="subscribe"
             status="pending">sip:user3_public1@home3.net</watcher>
     </watcher-list>
   </watcherinfo>
```

P-Charging-Vector: The PS populates the icid parameter with a globally unique value and
                                    populates the identifier of its own network to the originating Inter Operator
                                    Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The PS populates the P-Charging-Function-Addresses header field to be
                                    passed to the S-CSCF.

24. **NOTIFY request (S-CSCF to P-CSCF) - see example in table A.6.2-24**

    The S-CSCF forwards the NOTIFY request to the P-CSCF.

Table A.6.2-24: NOTIFY request (S-CSCF to P-CSCF)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     ps.home1.net;branch=z9hG4bK240f34.1
Max-Forwards: 69
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=323551024"
P-Charging-Function-Addresses:
Route: <sip:pcscf1.visited1.net;lr>
Record-Route: <sip:scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Event:
Content-Type:
Contact:
Content-Length:

(…)
```

P-Charging-Vector: The S-CSCF stores the originating Inter Operator Identifier (IOI) parameter received.

P-Charging-Function-Addresses: The S-CSCF stores the P-Charging-Function-Addresses header field and passes this header to the P-CSCF.

25. **NOTIFY request (P-CSCF to UE) - see example in table A.6.2-25**

The P-CSCF forwards the NOTIFY request to the PUA in the UE.

Table A.6.2-25: NOTIFY request (P-CSCF to UE)

```
NOTIFY sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp SIP/2.0
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
     scscf1.home1.net;branch=z9hG4bK351g45.1, SIP/2.0/UDP ps.home2.net;branch=z9hG4bK348923.1
Max-Forwards: 68
Record-Route: <sip:scscf1.home1.net;lr>, <sip:pcscf1.home1.net:7531;lr;comp=sigcomp>
From:
To:
Call-ID:
CSeq:
Subscription-State:
Event:
Content-Type:
Contact:
Content-Length:

(…)
```

26. **200 (OK) response (UE to P-CSCF) - see example in table A.6.2-26**

The PUA determines that this is a partial state notification of watcher-info and adds the new pending subscription to its existing watcher-info document. The UE acknowledges the NOTIFY request with a 200 (OK) response to the P-CSCF.

Table A.6.2-26: 200 (OK) response (UE to P-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=240f34.1, SIP/2.0/UDP
     scscf2.home2.net;branch=z9hG4bK764z87.1, SIP/2.0/UDP ps.home2.net;branch=z9hG4bK348923.1
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
From:
To:
Call-ID:
CSeq:
Content-Length: 0
```

27. **200 (OK) response (P-CSCF to S-CSCF) - see example in table A.6.2-27**

   The P-CSCF forwards the 200 (OK) response to the S-CSCF.

Table A.6.2-27: 200 (OK) response (P-CSCF to S-CSCF)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK332b23.1, SIP/2.0/UDP
     ps.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=323551024"
From:
To:
Call-ID:
CSeq:
Content-Length:
```

28. **200 (OK) response (S-CSCF to PS) - see example in table A.6.2-28**

   The P-CSCF forwards the response to the PS in the home network of the UE.

Table A.6.2-28: 200 (OK) response (S-CSCF to PS)

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP ps.home1.net;branch=z9hG4bK240f34.1
P-Access-Network-Info:
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=323551024"; orig-ioi=home1.net;
     term-ioi=visited1.net
From:
To:
Call-ID:
CSeq:
Content-Length:
```

P-Charging-Vector: The S-CSCF insertes the originating Inter Operator Identifier (IOI) parameter received and populates the identifier of its own network to the terminating Inter Operator Identifier (IOI) parameter of this header.

---------------NEXT CHANGE---------------

A.8.1   Introduction

This subclause shows signalling flows relating to the manipulation of presence service data over the Ut reference point using XCAP. The flows only shows the signalling between the XCAP server and the XCAP client, thus possible proxies located in between the entities are not shown in the example signalling flows.

Each example signalling flow shows several sequences of manipulation of data for the presence service.

   NOTE: Error conditions are not considered in the examples e.g. if authorization checks fail in the XCAP server, XML Schema compliancy checks fail or the file specified by the URI does not exist then an appropriate 4xx response is sent to the client.

Clarifications how XCAP is using HTTP are described in in draft-ietf-simple-xcap-03 [33].

   NOTE: The authentication proxy resides between UE (XCAP client) and AS (XCAP server), and examples of signalling flows for the authentication proxy are provided in 3GPP TS 24.109 [7].

CR-Form-v7.1

CHANGE REQUEST

⌘	**24.141** CR **42**	⌘**rev**	**1**	⌘	Current version:	**6.3.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐   ME **X** Radio Access Network ☐   Core Network **X**

Title: ⌘	xcap-change substitution	
Source: ⌘	Nokia	
Work item code:⌘	PRESNC	***Date:*** ⌘ 27/04/2005
Category: ⌘	**F**	***Release:*** ⌘ Rel-6

Use *one* of the following categories:
   F *(correction)*
   A *(corresponds to a correction in an earlier release)*
   B *(addition of feature),*
   C *(functional modification of feature)*
   D *(editorial modification)*
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

Use *one* of the following releases:
   Ph2 (GSM Phase 2)
   R96 (Release 1996)
   R97 (Release 1997)
   R98 (Release 1998)
   R99 (Release 1999)
   Rel-4 (Release 4)
   Rel-5 (Release 5)
   Rel-6 (Release 6)
   Rel-7 (Release 7)

Reason for change: ⌘	"xcap-change" is not used as an event name any more.
Summary of change:⌘	"xcap-change" and "XCAP change" are reworded.
Consequences if not approved: ⌘	Obsolete event name used in the specification.

Clauses affected: ⌘	5.3.1.6, 5.3.2.5, 5.3.3.5, 5.3.4.4, A.3.6 (not the complete clause is shown)

	Y	N		
Other specs ⌘		X	Other core specifications ⌘	
affected:		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘	

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.3.1.6   Subscription for ~~xcap~~ notification of state changes in XML document

In order to get notifications of changes to XML documents manipulated via the Ut reference point the PUA may generate a SUBSCRIBE request in accordance with draft-ietf-simple-xcap-package [39] and draft-ietf-sipping-config-framework [43].

--------------------NEXT CHANGE ------------------

5.3.2.5   Subscription for ~~xcap~~ notification of state changes in XML document

In order to get notifications of changes to XML documents manipulated via the Ut reference point the watcher may generate a SUBSCRIBE request in accordance with draft-ietf-simple-xcap-package [39] and draft-ietf-sipping-config-framework [43].

--------------------NEXT CHANGE ------------------

5.3.3.5   Subscription acceptance ~~to xcap change~~ and notification of state changes in XML document

When the PS receives a SUBSCRIBE request having the Event header value 'sip-profile', the PS shall first verify the identity of the source of the SUBSCRIBE request as described in 3GPP TS 24.229 [9] subclause 5.7.1.4, then it shall perform authorization as described in 3GPP TS 24.229 [9] subclause 5.7.1.5. Afterwards, the PS shall generate a response to the SUBSCRIBE request and notifications in accordance with draft-ietf-simple-xcap-package [39] and draft-ietf-sipping-config-framework [43].

--------------------NEXT CHANGE ------------------

5.3.4.4   Subscription acceptance ~~to xcap change~~ and notification of state changes in XML document

When the RLS receives a SUBSCRIBE request having the Event header value 'sip-profile', the RLS shall first verify the identity of the source of the SUBSCRIBE request as described in 3GPP TS 24.229 [9] subclause 5.7.1.4, then it shall perform authorization as described in 3GPP TS 24.229 [9] subclause 5.7.1.5. Afterwards, the RLS shall generate a response to the SUBSCRIBE request and notifications in accordance with draft-ietf-simple-xcap-package-02 [39] and draft-ietf-sipping-config-framework [43].

--------------------NEXT CHANGE ------------------

A.3.6 Watcher subscribing to ~~XCAP~~ state changes in XML document, UE in visited network

A.3.6.1 Watcher subscribing to ~~XCAP~~ changes made via XCAP in his resource list, UE in visited network - Successful subscription
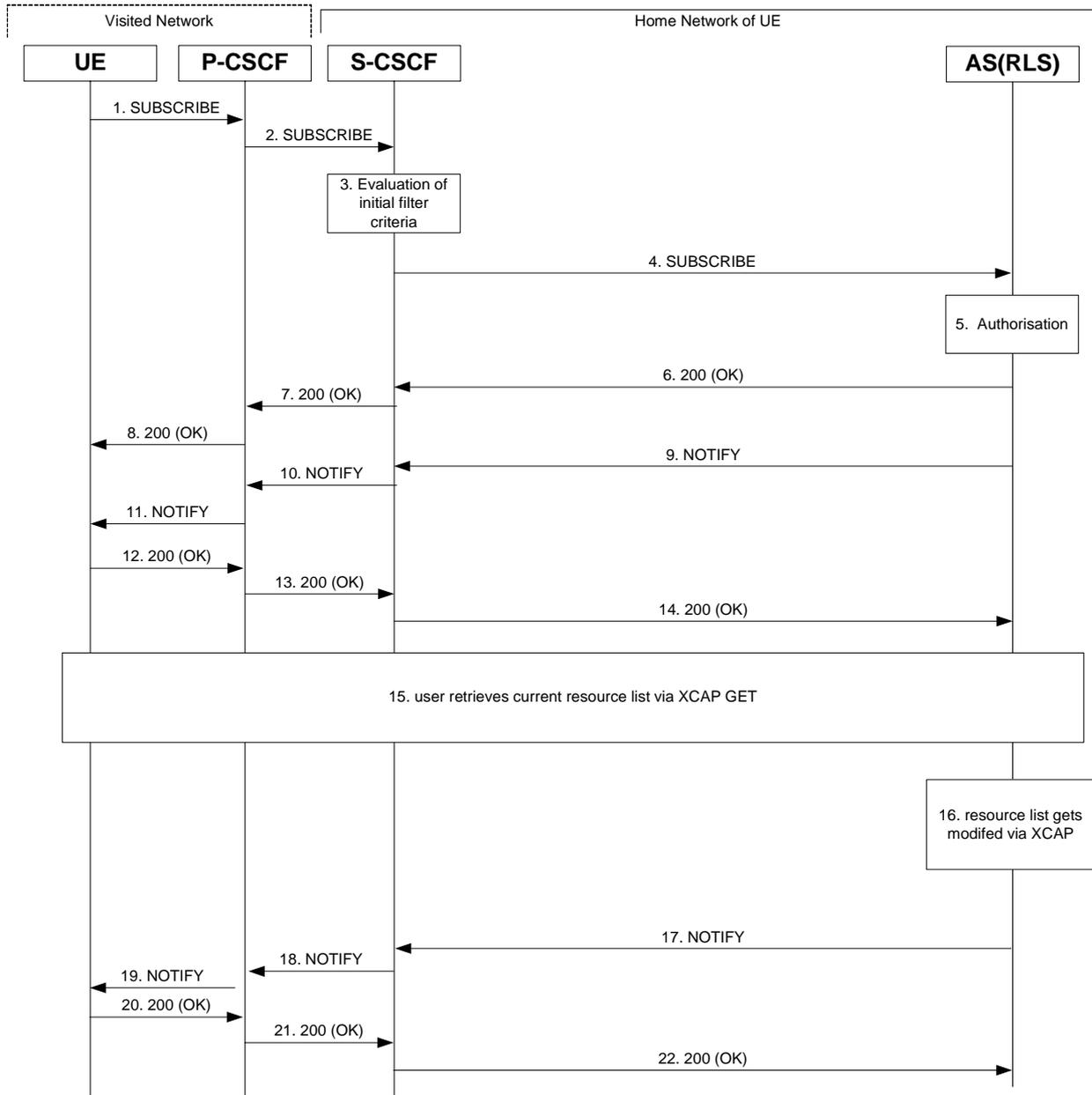
Figure A.3.6.1-1: Watcher subscribing to ~~XCAP~~ changes made via XCAP in his resource list

Figure A.3.6.1-1 shows a watcher subscribing to ~~XCAP change event~~ notifications of state changes made via XCAP in his resource list. The details of the flows as follows:

1. **SUBSCRIBE request (UE to P-CSCF) – see example in table A.3.6.1-1**

   A watcher agent in a UE wishes to get notification when his resource list gets modified via XCAP. In order to initiate a subscription to XCAP document changes in RLS, the UE generates a SUBSCRIBE request

indicating support for "sip-profile", together with an indication of the length of time this periodic subscription should last.

Table A.3.6.1-1: SUBSCRIBE request (UE to P-CSCF)

```
SUBSCRIBE sip:user1_public1@home1.net SIP/2.0
Via: SIP/2.0/UDP [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
Max-Forwards: 70
P-Access-Network-Info: 3GPP-UTRAN-TDD; utran-cell-id-3gpp=234151D0FCE11
Route: <sip:pcscf1.visited1.net:7531;lr;comp=sigcomp>, <sip:orig@scscf1.home1.net;lr>
P-Preferred-Identity: <sip:user1_public1@home1.net>
Privacy: none
From: <sip:user1_public1@home1.net>;tag=31415
To: <sip:user1_public1@home1.net>
Call-ID: b89rjhnedlrfjflslj40a222
CSeq: 123 SUBSCRIBE
Require: sec-agree
Proxy-Require: sec-agree
Security-Verify: ipsec-3gpp; q=0.1; alg=hmac-sha-1-96; spi-c=98765432; spi-s=87654321; port-
      c=8642; port-s=7531
Event: sip-profile;profile-type=application;app-id=resource-lists;document="users/user1"
Expires: 7200
Accept: application/xcap-diff+xml
Contact: <sip:[5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp>
Content-Length: 0
```

Request-URI: The users own SIP URI to get notifications of changes on all lists owned by the user.

Event: This field is populated with the value "sip-profile" to specify the use of the sip-profile package to get notified of changes to XCAP documents. The "app-id" in the field identifies the XCAP application usage. The "document" further details the document that is being subscribed.

Accept: This field is populated with the value application/xcap-diff+xml ' indicating that the UE supports the MIME type.

To: Same as the Request-URI.

2. **SUBSCRIBE request (P-CSCF to S-CSCF) - see example in table A.3.6.1-2**

    The P-CSCF looks up the serving network information for the public user identity that was stored during the registration procedure. The SUBSCRIBE request is forwarded to S-CSCF#1. A Route header is inserted into SUBSCRIBE request. The information for the Route header is taken from the service route determined during registration.

Table A.3.6.1-2: SUBSCRIBE request (P-CSCF to S-CSCF)

```
SUBSCRIBE sip:user1_public1@home1.net SIP/2.0
Via: SIP/2.0/UDP pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
      [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
P-Access-Network-Info:
Route: <sip:orig@scscf1.home1.net;lr>
Max-Forwards: 69
P-Asserted-Identity: <sip:user1_public1@home1.net>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=223551024"
Privacy:
Record-Route: <sip:pcscf1.visited1.net;lr>
Route: <sip:scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Supported:
Expires:
Accept:
Contact:
Content-Length:
```

3. **Evaluation of initial filter criteria**

The S-CSCF validates the service profile of this subscriber and evaluates the initial filter criteria. For sip:user1_public1@home1.net the S-CSCF has originating initial Filter Criteria with Service Point Trigger of Method = SUBSCRIBE AND Event = "sip-profile" that informs the S-CSCF to route the SUBSCRIBE request to the Application Server sip:rls.home1.net.

4. **SUBSCRIBE request (S-CSCF to RLS) - see example in table A.3.6.1-4**

The S-CSCF forwards the SUBSCRIBE request to the RLS.

Table A.3.6.1-4 SUBSCRIBE request (S-CSCF to RLS)

```
SUBSCRIBE sip:user1_public1@home1.net SIP/2.0
Via: SIP/2.0/UDP scscf1.home1.net;branch=z9hG4bK344a65.1, SIP/2.0/UDP
     pcscf1.visited1.net;branch=z9hG4bK120f34.1, SIP/2.0/UDP
     [5555::aaa:bbb:ccc:ddd]:1357;comp=sigcomp;branch=z9hG4bKehuefdam
Max-Forwards: 68
P-Access-Network-Info:
P-Asserted-Identity: <sip:user1_public1@home1.net>, <tel:+1-212-555-1111>
P-Charging-Vector: icid-value="AyretyU0dm+6O2IrT5tAFrbHLso=223551024"; orig-ioi=home1.net
P-Charging-Function-Addresses: ccf=[5555::b99:c88:d77:e66]; ccf=[5555::a55:b44:c33:d22];
     ecf=[5555::1ff:2ee:3dd:4ee]; ecf=[5555::6aa:7bb:8cc:9dd]
Privacy:
Record-Route: <sip:orig@scscf1.home1.net;lr>, <sip:pcscf1.visited1.net;lr>
Route: <sip:rls.home1.net;lr>, <sip:orig@scscf1.home1.net;lr>
From:
To:
Call-ID:
CSeq:
Event:
Supported:
Expires:
Accept:
Contact:
Content-Length:
```

P-Charging-Vector: The S-CSCF populates the identifier of its own network to the originating Inter Operator Identifier (IOI) parameter of this header.

P-Charging-Function-Addresses: The S-CSCF populates the P-Charging-Function-Addresses header field to be passed to the RLS.

5. **Authorization**

The RLS performs the necessary authorization checks on the originator to ensure that he/she is authorized to subscribe to ~~xcap~~ XML document changes. In this example this condition has been met, so the RLS sends a 200 (OK) response to the S-CSCF.