

**Source:** TSG SA WG2  
**Title:** CRs on 23.141  
**Agenda Item:** 7.2.3

The following Change Requests (CRs) have been approved by TSG SA WG2 and are requested to be approved by TSG SA plenary #19.

Note: the source of all these CRs is now S2, even if the name of the originating company(ies) is still reflected on the cover page of all the attached CRs.

<b>Tdoc #</b>	<b>Title</b>	<b>Spec</b>	<b>CR #</b>	<b>ca t</b>	<b>Versio n in</b>	<b>R EL</b>	<b>WI</b>	<b>S2 meeting</b>
<a href="#">S2-030135</a>	Routeing to Presence User Agent and Presence Server	23.141	19r1	B	6.1.0	6	PRESNC	S2-29
<a href="#">S2-030231</a>	Modificaion of requirement on Pc interface	23.141	42	B	6.1.0	6	PRESNC	S2-29
S2-030396r1	Subscription authorisation policy	23.141	23r3	C	6.1.0	6	PRESNC	S2-29
<a href="#">S2-030399</a>	Age of location	23.141	40r1	C	6.1.0	6	PRESNC	S2-29
S2-030400r2	Clarifications on charging requirement	23.141	35r3	C	6.1.0	6	PRESNC	S2-29
S2-030404	Charging Aspects for Presence Service	23.141	11r2	F	6.1.0	6	PRESNC	S2-29
<a href="#">S2-030848</a>	Support for partial notifications	23.141	41	F	6.1.0	6	PRESNC	S2-30
S2-031020	Support for presence publishing from multiple terminals	23.141	45r1	B	6.1.0	6	PRESNC	S2-30
S2-031021	Presence filtering clarifications	23.141	46r3	C	6.1.0	6	PRESNC	S2-30
S2-031022	Addition of application identifier	23.141	49r1	B	6.1.0	6	PRESNC	S2-30
S2-031023	Verification of the identity of watchers	23.141	24r5	C	6.1.0	6	PRESNC	S2-30

## CHANGE REQUEST

⌘ **23.141 CR 19** ⌘ rev **1** ⌘ Current version: **6.1.0** ⌘

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

<b>Title:</b>	⌘ Routing to Presence User Agent and Presence Server		
<b>Source:</b>	⌘ Vodafone Ltd		
<b>Work item code:</b>	⌘ PRESNC	<b>Date:</b>	⌘ 06/11/2002
<b>Category:</b>	⌘ <b>B</b>	<b>Release:</b>	⌘ Rel-6
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ In section 5.2.1, it is currently stated that:  “Where the PUA is located within the network [rather than in the UE], .....additional functionality may be required to resolve the location of the presence server associated with the presentity.”  Discussion at SA 2 #27 showed that this text was unclear.  In addition the Presence External Agent might also need functionality to find the Presence Server.  This CR proposes to add text to clarify these functions.
<b>Summary of change:</b>	⌘ Text in 5.2.1 and 5.2.3 is modified.
<b>Consequences if not approved:</b>	⌘ The operability and scalability of the Presence Service may be degraded.

<b>Clauses affected:</b>	⌘ 5.2.1, 5.2.3.										
<b>Other specs</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> </tr> <tr> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> </tr> <tr> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> </tr> </table> Other core specifications	Y	N	?	?	?	?	?	?	⌘ Stage 2 changes lead to stage 3 changes.	
Y	N										
?	?										
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<b>Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">?</td> <td style="width: 20px; text-align: center;">?</td> </tr> <tr> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> </tr> <tr> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> </tr> </table> Test specifications O&M Specifications	?	?	?	?	?	?				
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<b>Other comments:</b>	⌘										

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- 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.

## 5.2 Presence Agent Elements

The Agent elements in the Presence Architecture are functionally distinct from the Presence Server functional element. The generic function of the Agent elements is to make presence information available to the Presence Server element in standardized formats across standardized interfaces.

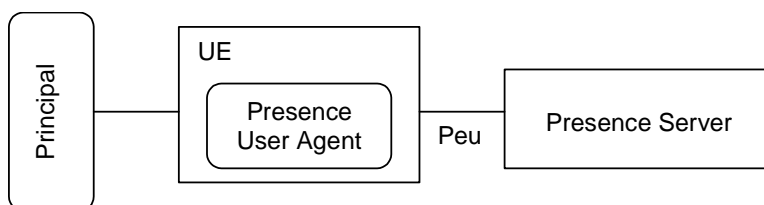
### 5.2.1 Presence User Agent

The Presence User Agent element shall provide the following functionality:

- The Presence User Agent shall collect Presence information associated with a Presentity representing a Principal.
- The Presence User Agent shall assemble the Presence information in the format defined for the Peu reference point.
- The Presence User Agent shall send the Presence information to the Presence Server element over the Peu reference point.
- The Presence User Agent shall be capable of managing the Access Rules.
- The Presence User Agent shall handle any necessary interworking required to support terminals that do not support the Peu reference point.

From a conceptual view, the Presence User Agent (PUA) element resides between the presence server and the user’s equipment as illustrated in the reference architecture in figure 4.2-1. In reality, a Presence User Agent may be located in the user’s terminal or within a network entity.

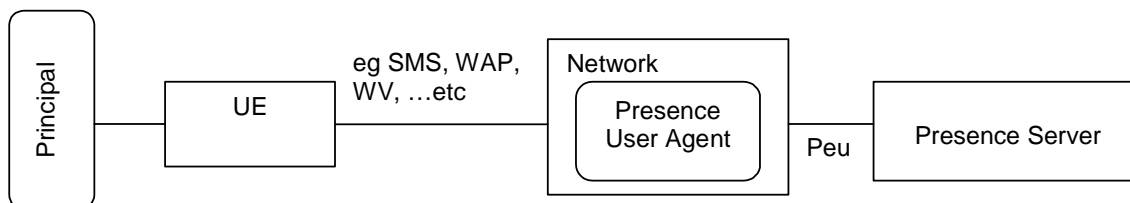
Where the PUA is located in UE, the UE shall support the Peu reference point to the Presence Server as illustrated in Figure 5.2.1-1 below.



**Figure 5.2.1-1. UE based Presence User Agent**

Where the PUA is located within the network, the particular network entity shall support the Peu reference point to the presence server as illustrated in Figure 5.2.1-2. [In this case, additional functionality may be required to provide routing between UE and the Presence User Agent, and, for the Presence User Agent to “register” the user within the “Presence network”.](#)

In this case, the interface between the terminal and the Presence User agent is outside of the scope of the present document.



**Figure 5.2.1-2. Network based Presence User Agent**

### 5.2.1.1 Relationship of Presence User Agent with IMS entities

When the Presence User Agent is located in an IMS UE the Peu reference point is implemented using the Gm, Mw and ISC reference points as defined in TS 23.002 [14].

## 5.2.2 Presence Network Agent

### 5.2.2.1 Functions of the Presence Network Agent

The Presence Network Agent element shall provide the following functionality:

- The Presence Network Agent shall receive Presence information from network elements within the Operator's network.
- The Presence Network Agent shall associate Presence information with the appropriate Subscriber/Presence combination.
- The Presence Network Agent shall convert the Presence information into the format standardized for the Pen interface.
- The Presence Network Agent shall publish the Presence information to the Presence Server across the Pen reference point.

### 5.2.2.2 Suppliers of Presence Information

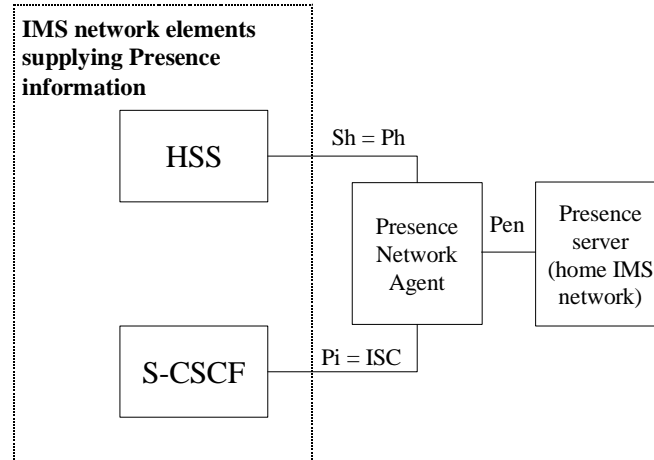
The Presence Network Agent may receive Presence information from one or more of the following 2G/3G network elements over the specified reference point:

Network Element supplying Presence Information	Reference Point
HSS/HLR	Ph
S-CSCF	Pi
MSC Server/VLR	Pc
SGSN	Pg
GGSN	Pk
GMLC	Pl

### 5.2.2.3 Relationship of Presence Network Agent with IMS entities

Figure 5.2.2.3-1 below presents the architecture for the S-CSCF and the HSS to provide presence related information to the Presence Server.

NOTE: The architecture on Figure 5.2.2.3-1 is an IMS-specific simplification of some of the interfaces of the generic Presence reference architecture presented in clause 4.



**Figure 5.2.2.3-1: IMS network elements supplying presence information**

The ISC interface is used to convey presence information from the S-CSCF to the Presence Network Agent. More specifically, the functions of the Pi interface are taken care of by the ISC interface. As an example, the S-CSCF can convey a user's IMS-registration status by generating and sending a 3<sup>rd</sup> party REGISTER request to the Presence server.

The Sh interface is used to convey information from the HSS to the Presence Network Agent. More specifically, the functions of the Ph interface are taken care of by the Sh interface.

**Editor's Note: The mapping of Pen to IMS reference points is FFS.**

### 5.2.3 Presence External Agent

The Presence External Agent element shall provides the following functionality:

- The Presence External Agent shall supply Presence information from external networks.
- The Presence External Agent shall send the Presence information across the Pex reference point according to the format standardized for the Pex reference point.
- The Presence External Agent shall handle the interworking and security issues involved in interfacing to external networks.
- [The Presence External Agent shall have functionality to resolve the location of the Presence Server associated with the Presentity.](#)

Examples of Presence Information that the Presence External Agent may supply, include:

- Third party services (e.g. calendar applications, corporate systems)
- Internet Presence Services
- Other Presence Services

**Editor's Note: The mapping of Pex to IMS reference points is FFS.**

CR-Form-v7
<b>CHANGE REQUEST</b>
⌘ <b>23.141 CR 42</b> ⌘ rev <b>-</b> ⌘ Current version: <b>6.1.0</b> ⌘

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

<b>Title:</b>	⌘ Modificaion of requirement on Pc interface		
<b>Source:</b>	⌘ NTT DoCoMo		
<b>Work item code:</b>	⌘ PRESENC	<b>Date:</b>	⌘ 20/01/2003
<b>Category:</b>	⌘ <b>B</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (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)

<b>Reason for change:</b>	⌘ During SA1#19 meeting, the requirement on presence information was modified. The modified requirment is related to the network status attribute that may be included in the presence information presenting a 3GPP subscriber. The modified change is to add the new example of the network status attribute. The added example is "CS call active with bearer information". The current stage 2 requirement on Pc interface does not cover the capability to get the state of CS Call with bearer information. Therefore, the stage 2 requirment on Pc interface needs to be modified in order to satisfy the stage 1 requirement.
<b>Summary of change:</b>	⌘ The new event (CS call active with bearer infromation) is added to the events that the MSC shall be able to report to the Network Agent
<b>Consequences if not approved:</b>	⌘

<b>Clauses affected:</b>	⌘ 4.3.10										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"></td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	X			X		X	Other core specifications Test specifications O&M Specifications	⌘ TS29.002
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	X										
<b>Other comments:</b>	⌘										

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## &lt;&lt; Modified Section &gt;&gt;

## 4.3.10 Reference point Presence Network Agent –MSC Server/VLR (Pc)

This reference point shall allow the MSC Server/VLR to report the mobility management related events to the Network Agent (such as attach/detach/location area update/[CS call active with bearer information](#)). This reference point is implemented using the MAP interface.

CR-Form-v7			
<b>CHANGE REQUEST</b>			
⌘	<b>23.141 CR 23</b>	⌘ rev <b>2</b> <b>3</b>	⌘ Current version: <b>6.1.0</b> ⌘

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

<b>Title:</b>	⌘ Subscription authorisation policy		
<b>Source:</b>	⌘ Ericsson		
<b>Work item code:</b>	⌘ PRESNC	<b>Date:</b>	⌘ 24/01/2003
<b>Category:</b>	⌘ <b>C</b>	<b>Release:</b>	⌘ Rel-6
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ TS 23.141 chapter 7 describes how to set-up the subscription authorisation policies in the Presence server. However, there is nothing stated about how the subscription authorisation policy should be applied e.g. if a watcher is not defined in the subscription authorisation policy, i.e. a Presentity that has not defined his subscription authorisation policy may endanger his privacy without knowing it.
<b>Summary of change:</b>	⌘ It is specified that the subscription authorisation policy applied shall, for each new presence information fetch or subscription request, put the request on hold until the Presentity has authorised the watcher or added the watcher to the access rules.
<b>Consequences if not approved:</b>	⌘ The handling of Presence information subscriptions, if the Presentity does not have specified any subscription authorisation policies, remain open and the privacy of the Presentity may not be kept.

<b>Clauses affected:</b>	⌘ 7										
<b>Other specs affected:</b>	<table border="1" style="border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	⌘	X	⌘	X	⌘	X	Other core specifications Test specifications O&M Specifications	⌘
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⌘	X										
<b>Other comments:</b>	⌘										

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## 7 Subscription authorisation policies

Subscription authorisation policies shall define the watchers who can access the presence information of the presentity. In addition to the watcher identities, the subscription authorisation policies shall contain the presence information or reference to the presence information that is allowed to be accessed by the listed watchers. The subscription authorisation lists can be logically arranged to be part of the presence server or a separate entity in the network.

In case of presence information fetch or subscription from a watcher that has not been authorised by the subscription authorisation policies, the presence server shall put the fetch or subscription on hold until the watcher has been authorised, added to the subscription authorisation lists or until a preconfigured timer has expired. The Presence server should put the Presence information fetch or subscription on hold for a preconfigured time if the Presentity is not reachable, e.g. not registered in IMS.

Subscription authorisation lists can be divided into three different categories: personal subscription authorisation lists, public subscription authorisation lists and blocking subscription authorisation lists.

Personal and general subscription authorisation lists shall define which watchers can access which information. Personal subscription authorisation lists shall explicitly identify watchers, while general subscription authorisation lists relate to groups of watchers whose exact identities are not necessarily known by the presentity e.g. “all watchers” or “all 3GPP watchers”.

Blocking subscription authorisation lists shall define watchers that are not allowed to access any presence information related to the presentity.

A presentity shall be able to manage several personal and general subscription authorisation lists as well as blocking subscription authorisation lists.

The three subscription authorisation list categories shall be evaluated in the following order: blocking subscription authorisation lists, personal subscription authorisation lists and general subscription authorisation lists.

The following shows an example where the presentity has defined a single subscription authorisation list for each category.

In this particular example, once the hit is found the evaluation is halted and presence information according to access is delivered.

1. Is the watcher on the blocking subscription authorisation list?
2. Is the watcher on the personal subscription authorisation list?
3. Is the watcher on the general subscription authorisation list (created e.g. by service provider containing all watchers)?
4. Send a notification to the presentity of pending subscription authorisation request.

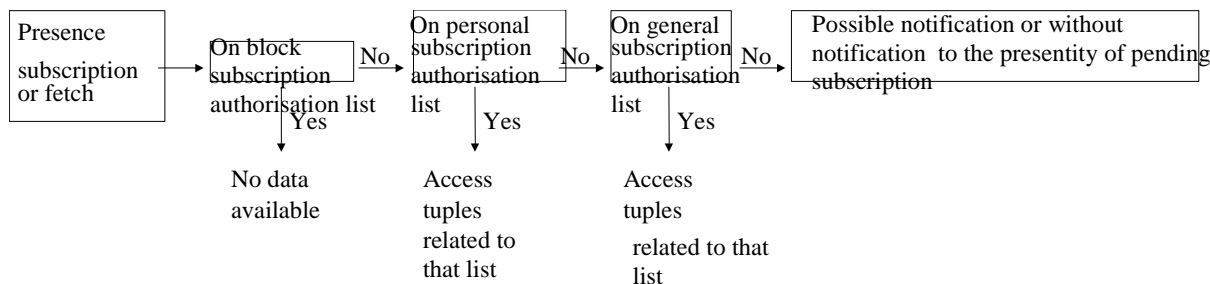


Figure 7-1. Example of subscription authorisation list evaluation order for presence service

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## 8 Charging requirement

CR-Form-v7	
<b>CHANGE REQUEST</b>	
⌘ <b>23.141 CR 40</b> ⌘ rev <b>1</b> ⌘	Current version: <b>6.1.0</b> ⌘

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

<b>Title:</b>	⌘ Age of location		
<b>Source:</b>	⌘ Ericsson		
<b>Work item code:</b>	⌘ PRESNC	<b>Date:</b>	⌘ 23/01/2003
<b>Category:</b>	⌘ <b>C</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification)		Use <u>one</u> of the following releases: 2 (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)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		

<b>Reason for change:</b>	⌘ TS 23.141 chapter 6.1.1 states that the location attribute will contain a value for the age of the location information. The age of location would change all the time, i.e. it would be unnecessary complex to require the PUA to set the age and then let the PS update the age continuously. Instead it is proposed that a timestamp is used.
<b>Summary of change:</b>	⌘ "age of location" is changed to "timestamp" for the location attribute
<b>Consequences if not approved:</b>	⌘ It would be too complex to handle the location attribute

<b>Clauses affected:</b>	⌘ 6.1.1						
<b>Other specs affected:</b>	<table border="1" style="font-size: x-small;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
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<input checked="" type="checkbox"/>	Test specifications						
<input checked="" type="checkbox"/>	O&M Specifications						
<b>Other comments:</b>	⌘						

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## 6 Presence attributes

### 6.1 Presence Attributes

Presence attributes describe the presentity. As the type of the presentity can vary significantly the definition of generic attributes is practically impossible. In 3GPP, the only attributes that are defined describe the 3GPP subscriber type of presentity. Other attributes can be defined by the service providers and manufacturers as part of the other presence markup as specified in IETF (e.g. RFC 2778 [16], RFC 2779[17]). The values (and process of generating them) and value ranges for all attributes shall be kept relatively simple. It is necessary for the 3GPP subscriber to understand how the values are set/modified as it may have direct impact to whom the access to presence data is given (as defined by the admission rules).

#### 6.1.1 3GPP Subscriber Presence Attributes and Values

A 3GPP subscriber is described by attributes: *subscriber's status, network status, one or more communication address(es)* (containing *communication means* and *contact address*), *subscriber provided location, network provided location, priority, text*. The attributes can be categorised as communication means and contact address specific information or generic information. Generic information attributes shall be: subscriber's status, subscriber provided location and text. Communication means and contact address specific information attributes shall be: network status, communication means, contact address, network provided location, priority and text.

- Generic information attributes, if these attributes are used as part of any tuple they shall use following values (values in parenthesis) to enable interoperability:
  - Subscriber's status (willing, willing with limitations, not willing, not disclosed),
    - NOTE: Attribute name subscriber's status has been defined in stage 1 and it does not imply any mapping to the IETF defined presence model e.g. IETF RFC 2778 [16], IETF RFC 2779 [17].
    - The subscriber's status attribute is not intended to be used when interworking with IM clients. Subscribers are able to provide more detailed willingness information as well as other information through the generic Text attribute, and the communication means and contact address specific Text attribute.
  - Location (-Last known CGI/SAI and/or geographic co-ordinates and/or free format text and ~~timestamp of location information~~),
  - Text (free format text).
- Communication means and contact address specific information attributes, if these attributes are used as part of any tuple they shall use following values (values in parenthesis) to enable interoperability:
  - communication means status (online, offline),
  - communication means (Service type (e.g. telephony, SMS, email, multimedia messaging service, instant messaging service)),
  - contact address (E.164 (e.g. MSISDN), SIP URL, Email, Instant message address e.g. IM:name@domain name),
  - Priority (Priority order for each of the defined communication means and contact address),
  - Text (free format text).

NOTE: The mapping of these attributes and values to the IETF defined presence model IETF RFC 2778[16], IETF RFC 2779 [17] may result one or several of the following:

- using existing IETF defined attributes and values (or subset of them)
- using existing IETF defined attributes but extending the value set
- Creating new attributes to the tuples.



The mapping of these values for tuples and different fields of the tuple is defined in stage 3. Furthermore, mechanisms to allow extensibility of the presence information in order to ensure interoperability are defined in stage 3.

All these attributes shall be able to contain value NULL to enable polite blocking.

## 6.1.2 Presence Structure to Support Multiple Values for Attributes

CR-Form-v7	
<b>CHANGE REQUEST</b>	
⌘ <b>23.141 CR 35</b> ⌘ rev <b>-3</b> ⌘	Current version: <b>6.1.0</b> ⌘

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

<b>Title:</b>	⌘ Clarification on charging requirement		
<b>Source:</b>	⌘ NEC Corporation		
<b>Work item code:</b>	⌘ Presenc	<b>Date:</b>	⌘ 9/1/2003
<b>Category:</b>	⌘ <b>C</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)		2 (GSM Phase 2)
	<b>A</b> (corresponds to a correction in an earlier release)		R96 (Release 1996)
	<b>B</b> (addition of feature),		R97 (Release 1997)
	<b>C</b> (functional modification of feature)		R98 (Release 1998)
	<b>D</b> (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ Another point is that there are still missing requirement for presence server, e.g. it is not clearly stated for subsequent notifications for charging to watcher. Requirement for charging for Presenty proxy is missing.
<b>Summary of change:</b>	⌘ It is also proposed the adding the wording for subsequent notifications for charging to watcher. Charging requirement for presence proxy is added.
<b>Consequences if not approved:</b>	⌘ It is not clear for the subsequent notifications for charging to watcher.

<b>Clauses affected:</b>	⌘ 8								
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	Y	N	⌘	X	⌘	X	⌘	X
Y	N								
⌘	X								
⌘	X								
⌘	X								
<b>Other comments:</b>	⌘								

**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.

## Start of change

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### 8 Charging requirement

The following charging requirement for presence service is identified. The requirements shall be realized by enhancements of the IMS charging mechanism as specified in 3GPP TS 32.200[6] and 3GPP TS 32.225[7].

- 1) Watcher Presence Proxy shall be able to provide the charging information for watcher requests per watcher for presence enquiry or subscription and subsequent notifications.
- 2) Presentity Proxy shall be able to provide the charging information for updates to presence information per watcher.
- 3) The Presence Server shall be able to provide the charging information for notifying the watcher of updates to presence information. Presence Server shall be able to provide the charging information for subscription to Watcher Lists and receiving notification of Watcher Information. Presence Server shall be able to provide the charging information for collecting the record of watcher list information per presentity. The Presence Server shall be able to provide the charging information for publishing presence information per presentity.
- 34) Presence List Server shall be able to provides the charging information for Watcher subscription to Presence Lists and receiving notification of Presence Information.
- ~~4) Presence Server shall provides the charging information for subscription to Watcher Lists and receiving notification of Watcher Information.~~

## End of change

## CHANGE REQUEST

⌘ **23.141** CR **11** ⌘ rev **2** ⌘ Current version: **6.1.0** ⌘  
4

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

<b>Title:</b>	⌘ <b>Charging Aspects for Presence Service</b>		
<b>Source:</b>	⌘ <b>Vodafone</b>		
<b>Work item code:</b>	⌘ <b>PRESNC</b>	<b>Date:</b>	⌘ <b>24/01/2003</b>
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ <b>Rel-6</b>
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ One of the important requirements in terms of commercial scenario is missing, which is to <b>permit service charging while “zero rating” the bearer charge. This is in order to avoid “double charging” for users.</b> The requirement is perceived as an issue with respect to the commercial attractiveness of the service.
<b>Summary of change:</b>	⌘ In current version of 23.141, additional charging requirement is added in the section 8 Charging Requirements, i.e. the Presence Server and Watcher Presence Proxy shall provide information which permits specific tariffs (e.g. zero rating) to be applied to the bearer traffic associated with presence service “events”.
<b>Consequences if not approved:</b>	⌘ Less commercially attractive service.

<b>Clauses affected:</b>	⌘ <b>8</b>										
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> </tr> <tr> <td style="text-align: center;">N</td> <td style="text-align: center;">?</td> </tr> <tr> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	?	?	N	?	?	?	⌘ <b>Stage 3</b>	⌘ <b>Stage 3 charging</b>
Y	N										
?	?										
N	?										
?	?										
<b>Other comments:</b>	⌘										

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## 8 Charging requirements

The following charging requirements for presence service are identified. The requirements shall be realized by enhancements of the IMS charging mechanism as specified in 3GPP TS 32.200[6] and 3GPP TS 32.225[7].

- 1) Watcher Presence Proxy shall provide the charging information for watcher requests per watcher for presence enquiry or subscription.
- 2) The Presence Server shall provide the charging information for updates to presence information
- 3) Presence List Server shall provides the charging information for Watcher subscription to Presence Lists and receiving notification of Presence Information.
- 4) Presence Server shall provides the charging information for subscription to Watcher Lists and receiving notification of Watcher Information.
- 5) It shall be possible to apply specific tariffs (eg zero rating) to the bearer and/or signalling traffic associated with the above presence service “events”. Differentiating in the IP Connectivity access network between the signaling traffic related to presence events and signaling traffic related to other IMS SIP communications is not a requirement.

CR-Form-v7

## CHANGE REQUEST

# 23.141 CR 41 # rev - # Current version: 6.1.0 #

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

<b>Title:</b>	# Support for partial notifications		
<b>Source:</b>	# Nokia, Ericsson		
<b>Work item code:</b>	# PRESNC	<b>Date:</b>	# 09/01/2003
<b>Category:</b>	# <b>F</b>	<b>Release:</b>	# Rel-6
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	# Change enables partial notifications to save radio resources in the wireless domain while enable interworking scenarios with public Internet.
<b>Summary of change:</b>	# It's been added that watcher should indicate in the subscription message whether it is capable for partial notifications (existing text concerning this is clarified). Within 3GPP networks the presence server shall obey the request. Presence Servers not supporting partial notifications ignore watcher's capability announcement and provide full state notifications.
<b>Consequences if not approved:</b>	# The legacy Internet watcher applications can not be supported or the radio utilisation will not be optimal.

<b>Clauses affected:</b>	# 4.3.4, 5.1, A.2.2.1, A.2.4.1										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="width: 20px; text-align: center;">#</td> <td style="width: 20px; text-align: center;">#</td> </tr> <tr> <td style="width: 20px; text-align: center;">#</td> <td style="width: 20px; text-align: center;">#</td> </tr> <tr> <td style="width: 20px; text-align: center;">#</td> <td style="width: 20px; text-align: center;">#</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	#	#	#	#	#	#		
Y	N										
#	#										
#	#										
#	#										
<b>Other comments:</b>	#										

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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.



#### 4.3.4 Reference point Watcher applications – Presence Server (Pw)

This reference point shall allow a Watcher application to request and obtain presence information. [3] provides guidelines for such an interface.

The transport shall not impose any limitations to the size of the presence information.

In order to provide all the functionalities required on this interface, a combination of multiple protocols may be used.

This reference point shall support both presence monitoring and fetching modes. In the fetching mode, it shall be possible for the watcher to once request all or only a subset of a presentity's presence information (i.e. one or more tuples) pertaining to certain communication means and/or contact addresses.

In the monitoring mode, it shall be possible for the watcher to request monitoring of all or a subset of a presentity's presence information (i.e. one or more tuples) pertaining to certain communication means and/or contact addresses. Watcher shall be able to ~~and to~~ explicitly ~~request~~ indicate the capability to process ~~full or~~ partial updates.

It shall be possible for the notifications containing the presentity's presence information to contain only the modified tuples, i.e. only those tuples which have changed since the last notification.

IPv6 shall be supported for all functionalities required from a Watcher application that supports the Pw reference point. An IPv6 capable 3GPP UE shall use IPv6 when accessing Pw.

\*\*\*\*\* Next change \*\*\*\*\*

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## 5 Functional Entities To Support Presence Service

### 5.1 Presence Server

The Presence Server shall reside in the presentity's home network.

The Presence Server shall be able to receive and manage presence information that is published by the Presence User/Network/External agents, and shall be responsible for composing the presence-related information for a certain presentity from the information it receives from multiple sources into a single presence document. The composing process to create the single presence document may involve complex transformations of presence information such as modifying the presence information from one presence source based on information from another presence source.

The mechanisms for combining the presence related information shall be defined based on presence attributes, and according to certain policy defined in the Presence Server. The Presence Server shall be capable of receiving and composing the Presence information received in the standardized formats from authorized sources regardless of the source of the information or the ability to interpret the information contained in the presence tuples. The information that the Presence Server is not able to interpret shall be handled in a transparent manner.

The Presence Server shall also allow watchers to fetch and subscribe either the full set of presence information of a presentity, or only certain tuples within. The Presence Server shall be able to generate partial notifications to a watcher, which has indicated the capability to process them. ~~These~~ partial notifications ~~only~~ contain those tuples of the presentity which have been modified since the latest notification sent to the watcher about this presentity, and required additional information to be able to link the partial notification to the information watcher has received earlier. In case the watcher does not indicate the capability to process partial notifications the presence server shall send only full updates.

The Presence Server shall support SIP-based communications for publishing presence information.

The Presence Server shall support SIP-based communications with the Presentity Presence Proxy. The Presence Server is a SIP Application Server as defined by 3GPP TS 23.228 [9], and is located using SIP URLs, standard SIP and existing IMS mechanisms (SIP routing, HSS query, ISC filtering, etc...).

The Presence Server shall provide Subscription Authorization Policy. The Subscription Authorization Policy determines which Watchers are allowed to subscribe to a Presentity's Presence information.

The Subscription Authorization Policy also determines which tuples of the Presentity's Presence information the watcher has access. It shall be possible for the Presentity's Presence User Agent to provide the Subscription Authorization Policy or it may be configured by the operator as part of the service provisioning.

The Presence Server may provide a filtering function that is used to limit the information that is delivered to a watcher. After subscription the authorized watchers get notified of the actual Presence Information based on the Subscription Authorization Policy and the filters set by the watcher in the subscription.

The Presence Server shall collect watcher information to enable presentity to obtain information of the watchers that are or have been requesting, fetching or subscribing presentity's presence information. Service provider shall be able to define the maximum time period over which information is collected and stored. The watcher information list shall include:

- identity of the watcher (unless anonymity was requested);  
In case of anonymous watcher, the identity of the watcher shall not be provided to the presentity. The presentity shall be able to determine that an anonymous watcher has requested, fetched or subscribed presence information of the presentity including related information as specified in this list without revealing the watchers identity.
- time of the request, fetch or subscription;
- length of the subscription; and
- state of the request or subscription.

The Presence Server shall be able to support the presentity obtaining the above watcher information. The Presence Server shall be able to receive watcher information fetches and subscriptions from the presentity. These watcher information fetch and subscribe requests shall be able to contain filters which define

- what watchers the presentity is interested in;  
Possible categories are:
  - all watchers;
  - defined watchers;
  - new, unauthorised watchers; and
  - defined and new, unauthorised watchers.
- what information the presentity is interested in; and  
The information is all or part of the watcher information list as defined above.
- the length of the watcher information history collection period that the presentity is interested in.

In response to watcher information fetches, the presence server shall be able to provide requested watcher information to the presentity. In response to watcher information subscriptions, the presence server shall provide notification to the presentity of the current state of the subscribed watcher information. When there are subsequent changes in the subscribed watcher information, notifications of the changes in watcher information are sent to the presentity.

The Presence Server may support rate-limiting or filtering of the presence notifications based on local policy in order to minimize network load.

When the presentity is associated with a UE that has subscribed to an IMS network, according to the home control model its Presence Server shall also be located within the presentity's home IMS network.

\*\*\*\*\* Next change \*\*\*\*\*

## 5.4.2 Watcher application in an IMS UE

The Watcher application can be located within a UE registered in the IMS network, it is registered to a S-CSCF via a P-CSCF according to standard IMS procedures as specified in 3GPP TS 23.228 [9].

Watcher application shall be able to handle full and partial notifications. The capability to process partial notifications shall be indicated to the presence server when making a presence subscription.

### 5.4.3 Network based Watcher Application Server

The Watcher application can be located within an Application Server behind the ISC reference point. This entity is the Network Based Watcher Application Server.

Watcher application shall be able to handle full and partial notifications. The capability to process partial notifications shall be indicated to the presence server when making a presence subscription.

\*\*\*\*\* Next change \*\*\*\*\*

### A.2.2 Flows demonstrating how watchers subscribe to presence event notification

The subclause covers the flows that show how watchers can request presence information about a presentity.

#### A.2.2.1 IMS Watcher and IMS Presentity in the same or different IM-CN

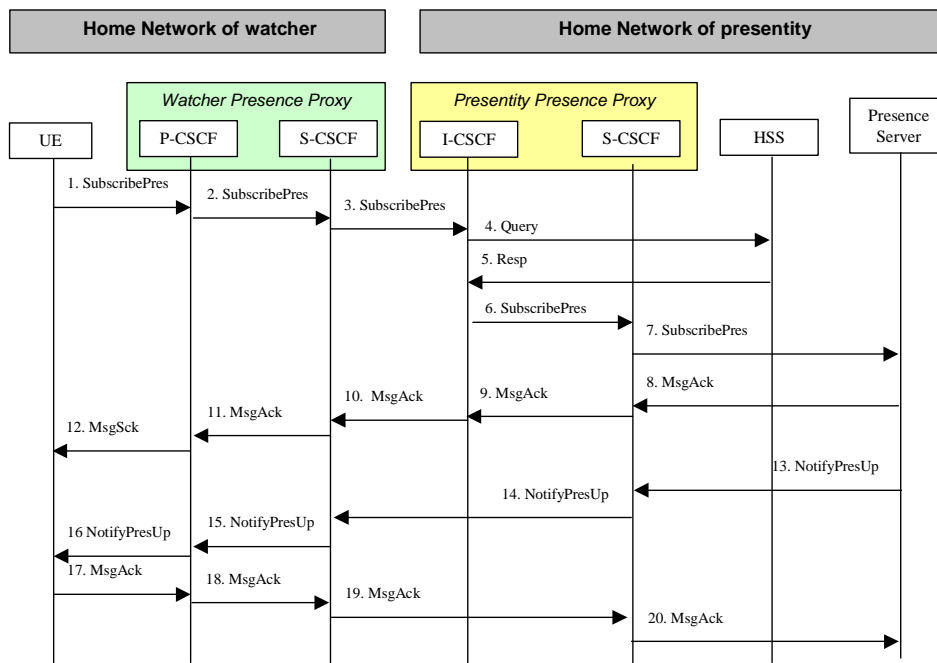


Figure A.2.2.1-1. IMS Watcher registering for event notification

Figure A.2.2.1-1 shows an IMS watcher subscribing to presence event notification about an IMS based presentity. The presentity may either be in the same IM-CN subsystem as the watcher or may be in a different IM-CN subsystem. The flows for both these cases are the same.

*Note-i: The path of the SUBSCRIBE dialog may optionally include additional I-CSCF(THIGs) in networks where network topology hiding is applied.*

*Note-ii: The flow shows the case that the S-CSCF of the Presentity does not remain in the path of the dialog.*

The details of the flows as follows:

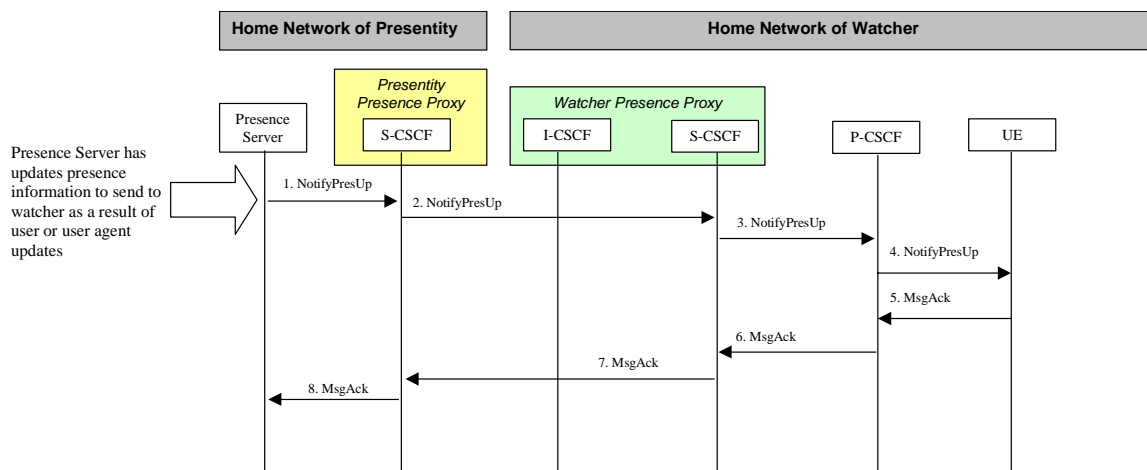
1. A watcher agent in a UE wishes to watch a presentity, or certain tuples of the presentity (pertaining to a certain communication means or communication address). To initiate a subscription, the UE sends a *SubscribePres* message request containing the presence related events that it wishes to be notified of, together with an indication of the length of time this periodic subscription should last. The UE sends the *SubscribePres* information flow to the proxy (subscriber identity, home networks domain name). The *SubscribePres* may also include an indication of the watcher's capability to handle partial notifications.

2. The P-CSCF remembers (from the registration process) the next hop CSCF for this UE. In this case the *SubscribePres* is forwarded to the S-CSCF in the home network. In this case, the P-CSCF and the S-CSCF act as a Watcher Presence Proxy.
3. The S-CSCF is unable to resolve the presence server address of the presentity that the UE is requesting to watch, and as a result forwards the *SubscribePres* message to the an I-CSCF offering part of the Presentity Presence Proxy functionality. The S-CSCF shall examine the home domain of the presentity associated with the request and if the request is for a presentity outside the operator's domain, it determines the external I-CSCF. If the request is for a presentity in the same domain, the S-CSCF forwards the request to the local I-CSCF.
4. The I-CSCF examines the presentity identity and the home domain identity and employs the services of a name-address resolution mechanism to determine the HSS address to contact. The I-CSCF shall query the HSS to obtain the address of the S-CSCF associated with the Presentity. It shall query the HSS via a Query message.
5. The Query Resp message from the HSS provides the name of the S-CSCF associated with the presentity.
6. The I-CSCF, using name of the Presence Server shall determine the address of the S-CSCF through a name-address resolution mechanism. The *SubscribePres* message is forwarded to the S-CSCF.
7. The S-CSCF using any necessary filtering criteria forwards the *SubscribePres* message to the appropriate Presence Server.
8. At this stage the presence server performs the necessary authorisation checks on the originator to ensure it is allowed to watch the presentity. Once all privacy conditions are met, the presence server issues a *MsgAck* to the S-CSCF . (In the case where the privacy/authorisation checks fail, then a negative acknowledgement is sent to the watcher).
9. The S-CSCF forwards the to the I-CSCF.
10. The I-CSCF forwards the *MsgAck* to the originating S-CSCF.
11. The S-CSCF forwards the *MsgAck* message to the P-CSCF.
12. The P-CSCF forwards the *MsgAck* to the watcher agent in the UE.
13. As soon as the Presence Server sends a *MsgAck* to accept the subscription, it sends a *NotifyPresUp* message with the current [full](#) state of the presentity's tuples that the watcher has subscribed and been authorised to. The *NotifyPresUp* is sent along the path of the SUBSCRIBE dialog to the S-CSCF allocated to the Watcher. Further notification<sup>s</sup> sent by the Presence server may either contain the complete set of presence information, or only those tuples that have changed since the last notification [if the watcher has indicated the capability to process partial notifications](#).
14. The S-CSCF forwards the *NotifyPresUp* to the P-CSCF.
15. The P-CSCF forwards the *NotifyPresUp* to the watcher application in the UE
16. The UE acknowledges the receipt of the *NotifyPresUp* message with a *MsgAck* sending this to the P-CSCF.
17. The P-CSCF forwards the *MsgAck* message to the S-CSCF.
18. The S-CSCF allocated to the presentity forwards the *MsgAck* to the Presence Server.

\*\*\*\*\* Next change \*\*\*\*\*

## A.2.4 Presence Server notifying watcher of updates to presence information

### A.2.4.1 IMS based Watcher and presentity in the same or different IM-CN subsystem



**Figure A.2.4.1-1: Presence Server updating IMS watcher**

Figure A.2.4.1-1 shows how an IMS based watcher is notified of updates to a presentity's presence information. The flows are applicable to the case where the Watcher and Presentity are in the same or in different IM-CN subsystems.

*Note-i: The path of the SUBSCRIBE dialog (i.e. also the NOTIFY transaction) may optionally include additional I-CSCF(THIGs) in networks where network topology hiding is applied.*

*Note-ii: The flow shows the case that the S-CSCF of the Presentity does not remain in the path of the dialog.*

Details of the flows are as follows:

1. The Presence Server determines which authorised watchers are entitled to receive the updates of the presence information for this presentity. For each appropriate watcher, the presence server sends a *NotifyPresUp* message that contains the [full or partial](#) updates to the presence information. This *NotifyPresUp* is sent along the path of the SUBSCRIBE dialog to the S-CSCF of the Watcher.
2. The S-CSCF forwards the *NotifyPresUp* message to the P-CSCF of the watcher.
3. The P-CSCF forwards the *NotifyPresUp* message to the UE.
4. The UE acknowledges the *NotifyPresUp* message with a *MsgAck* to the P-CSCF.
5. The P-CSCF forwards the *MsgAck* message to the S-CSCF.
6. The S-CSCF of the Watcher forwards the *MsgAck* to the Presence Server.

CR-Form-v7	
<b>CHANGE REQUEST</b>	
# <b>23.141 CR 45</b> # rev <b>1</b> #	Current version: <b>6.1.0</b> #

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

<b>Title:</b>	# Support for presence publishing from multiple terminals		
<b>Source:</b>	# Nokia		
<b>Work item code:</b>	# PRESNC	<b>Date:</b>	# 26/02/2003
<b>Category:</b>	# <b>B</b>	<b>Release:</b>	# Rel-6
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	# Support for publishing from multiple terminals is required by stage 1 specification. The requirement can be fulfilled by allowing multiple terminals to subscribe presenty's own information. To avoid unnecessary load for radio interface each terminal should filter out notifications caused by their own publishes. This CR proposes terminals to identify themselves to allow required filtering (that is covered in another CR).
<b>Summary of change:</b>	# It has been added that Presence User Agent (PUA) has to identify itself when publishing presence information. The PUA identity can be used when watchers are filtering out the unnecessary information i.e. if the watcher is equal to Presence User Agent it can filter out the notifications caused by its own publish.The filtering is covered in a separate CR.
<b>Consequences if not approved:</b>	# The multiple terminal use will consume unnecessarily radio and network resources

<b>Clauses affected:</b>	# 4.3.1, 4.3.2, 4.3.3, 5.1, 5.2.1										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications Test specifications O&M Specifications	#
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<b>Other comments:</b>	#										

**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.

\*\*\*\*\* First change \*\*\*\*\*

## 4.3 Reference points

### 4.3.1 Reference point Presence User Agent – Presence Server (Peu)

This reference point shall allow a presentity's presence information to be supplied to the Presence Server. [3] provides guidelines for such an interface. The transport on this reference point shall not impose any limitations on the size of the presence information.

Peu shall provide mechanisms for the Presence User Agent to manage access rules.

Peu shall provide mechanisms for the Presence User Agent to obtain information on watcher subscriptions to the Presentities Presence Information.

Peu shall provide mechanisms for the Presence User Agent to supply [or update](#) only a certain subset of the presentity's presence information to the Presence Server. It shall also be possible for the Presence User Agent to supply the complete presence document over Peu.

Peu shall support SIP-based communications for publishing presence information, however, in order to provide all the functionalities required on this reference point, a combination of multiple protocols may be used.

IPv6 shall be supported for all functionalities required from a Presence User Agent that supports the Peu reference point. An IPv6 capable 3GPP UE shall use IPv6 when accessing Peu.

### 4.3.2 Reference point Network Agent – Presence Server (Pen)

This reference point shall allow a presentity's presence information to be supplied to the Presence Server. [3] provides guidelines for such an interface. The transport on this reference point shall not impose any limitations to the size of the presence information.

Pen shall provide mechanisms for the Network Agent to manage subscription authorisation policies.

Pen shall provide mechanisms for the Network Agent to supply [or update](#) only a certain subset of the presentity's presence information to the Presence Server.

Pen shall provide mechanisms for activating or deactivating the reporting of Presence Information for a given presentity from the network entities within the PLMN.

In order to provide the all the functionalities required on this reference point, a combination of multiple protocols may be used. The protocols used at the Pen reference point are not standardised.

### 4.3.3 Reference point Presence External Agent – Presence Server (Pex)

This reference point shall allow a presentity's presence information to be supplied to the Presence Server. [3] provides guidelines for such an interface. The transport on this reference point shall not impose any limitations on the size of the presence information.

Pex shall provide mechanisms for the Presence External Agent to supply [or update](#) only a certain subset of the presentity's presence information to the Presence Server.

In order to provide all the functionalities required on this reference point, a combination of multiple protocols may be used. Presence information obtained from an external network by the Presence External Agent is transferred across the Pex reference point to the Presence Server.

\*\*\*\*\* Next change \*\*\*\*\*



---

## 5 Functional Entities To Support Presence Service

### 5.1 Presence Server

The Presence Server shall reside in the presentity's home network.

The Presence Server shall be able to receive and manage presence information that is published by the Presence User/Network/External agents, and shall be responsible for composing the presence-related information for a certain presentity from the information it receives from multiple sources into a single presence document. The composing process to create the single presence document may involve complex transformations of presence information such as modifying the presence information from one presence source based on information from another presence source. In particular, the Presence server shall be able to receive and manage presence information that is published from multiple Presence User agents of the same presentity. These Presence User agents may be updating the same parts of the presence information.

The mechanisms for combining the presence related information shall be defined based on presence attributes, and according to certain policy defined in the Presence Server. The Presence Server shall be capable of receiving and composing the Presence information received in the standardized formats from authorized sources regardless of the source of the information or the ability to interpret the information contained in the presence tuples. The information that the Presence Server is not able to interpret shall be handled in a transparent manner.

The Presence Server shall also allow watchers to fetch and subscribe either the full set of presence information of a presentity, or only certain tuples within. The Presence Server shall be able to generate partial notifications to a watcher, these partial notifications only contain those tuples of the presentity which have been modified since the latest notification sent to the watcher about this presentity.

The Presence Server shall support SIP-based communications for publishing presence information.

The Presence Server shall support SIP-based communications with the Presentity Presence Proxy. The Presence Server is a SIP Application Server as defined by 3GPP TS 23.228 [9], and is located using SIP URLs, standard SIP and existing IMS mechanisms (SIP routing, HSS query, ISC filtering, etc...).

The Presence Server shall provide Subscription Authorization Policy. The Subscription Authorization Policy determines which Watchers are allowed to subscribe to a Presentity's Presence information.

The Subscription Authorization Policy also determines which tuples of the Presentity's Presence information the watcher has access. It shall be possible for the Presentity's Presence User Agent to provide the Subscription Authorization Policy or it may be configured by the operator as part of the service provisioning.

The Presence Server may provide a filtering function that is used to limit the information that is delivered to a watcher. After subscription the authorized watchers get notified of the actual Presence Information based on the Subscription Authorization Policy and the filters set by the watcher in the subscription.

The Presence Server shall collect watcher information to enable presentity to obtain information of the watchers that are or have been requesting, fetching or subscribing presentity's presence information. Service provider shall be able to define the maximum time period over which information is collected and stored. The watcher information list shall include:

- identity of the watcher (unless anonymity was requested);  
In case of anonymous watcher, the identity of the watcher shall not be provided to the presentity. The presentity shall be able to determine that an anonymous watcher has requested, fetched or subscribed presence information of the presentity including related information as specified in this list without revealing the watchers identity.
- time of the request, fetch or subscription;
- length of the subscription; and
- state of the request or subscription.

The Presence Server shall be able to support the presentity obtaining the above watcher information. The Presence Server shall be able to receive watcher information fetches and subscriptions from the presentity. These watcher information fetch and subscribe requests shall be able to contain filters which define

- what watchers the presentity is interested in;  
Possible categories are:
  - all watchers;
  - defined watchers;
  - new, unauthorised watchers; and
  - defined and new, unauthorised watchers.
- what information the presentity is interested in; and  
The information is all or part of the watcher information list as defined above.
- the length of the watcher information history collection period that the presentity is interested in.

In response to watcher information fetches, the presence server shall be able to provide requested watcher information to the presentity. In response to watcher information subscriptions, the presence server shall provide notification to the presentity of the current state of the subscribed watcher information. When there are subsequent changes in the subscribed watcher information, notifications of the changes in watcher information are sent to the presentity.

The Presence Server may support rate-limiting or filtering of the presence notifications based on local policy in order to minimize network load.

When the presentity is associated with a UE that has subscribed to an IMS network, according to the home control model its Presence Server shall also be located within the presentity's home IMS network.

## 5.2 Presence Agent Elements

The Agent elements in the Presence Architecture are functionally distinct from the Presence Server functional element. The generic function of the Agent elements is to make presence information available to the Presence Server element in standardized formats across standardized interfaces.

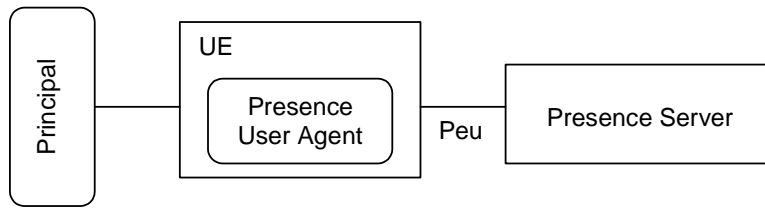
### 5.2.1 Presence User Agent

The Presence User Agent element shall provide the following functionality:

- The Presence User Agent shall collect Presence information associated with a Presentity representing a Principal.
- The Presence User Agent shall assemble the Presence information in the format defined for the Peu reference point.
- The Presence User Agent shall send the Presence information to the Presence Server element over the Peu reference point.
- The Presence User Agent shall be capable of managing the subscription authorisation policies.
- The Presence User Agent shall handle any necessary interworking required to support terminals that do not support the Peu reference point.
- Presence User Agent shall uniquely identify itself (among the Presence User Agents of the presentity) when publishing presence information.

From a conceptual view, the Presence User Agent (PUA) element resides between the presence server and the user's equipment as illustrated in the reference architecture in figure 4.2-1. In reality, a Presence User Agent may be located in the user's terminal or within a network entity.

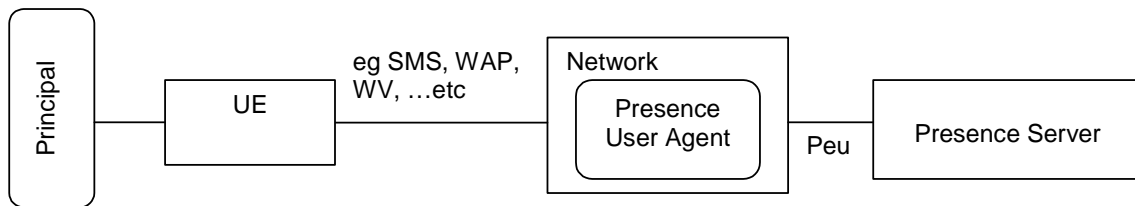
Where the PUA is located in UE, the UE shall support the Peu reference point to the Presence Server as illustrated in Figure 5.2.1-1 below.



**Figure 5.2.1-1. UE based Presence User Agent**

Where the PUA is located within the network, the particular network entity shall support the Peu reference point to the presence server as illustrated in Figure 5.2.1-2. In such a case an additional functionality may be required to resolve the location of the presence server associated with the presentivity.

In this case, the interface between the terminal and the Presence User agent is outside of the scope of the present document.



**Figure 5.2.1-2. Network based Presence User Agent**

### 5.2.1.1 Relationship of Presence User Agent with IMS entities

When the Presence User Agent is located in an IMS UE the Peu reference point is implemented using the Gm, Mw and ISC reference points as defined in TS 23.002 [14].

\*\*\*\*\* End of changes \*\*\*\*\*

CR-Form-v7	
<b>CHANGE REQUEST</b>	
# <b>23.141 CR 46</b> # rev <b>3</b> # Current version: <b>6.1.0</b> #	

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

<b>Title:</b>	# Presence filtering clarifications
<b>Source:</b>	# Nokia
<b>Work item code:</b>	# PRESNC <span style="float: right;"><b>Date:</b> # 06/03/2003</span>
<b>Category:</b>	# <b>C</b> <span style="float: right;"><b>Release:</b> # Rel-6</span>
<p><i>Use one of the following categories:</i></p> <p><b>F</b> (correction)  <b>A</b> (corresponds to a correction in an earlier release)  <b>B</b> (addition of feature),  <b>C</b> (functional modification of feature)  <b>D</b> (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a>.</p>	
<p><i>Use one of the following releases:</i></p> <p><b>2</b> (GSM Phase 2)  <b>R96</b> (Release 1996)  <b>R97</b> (Release 1997)  <b>R98</b> (Release 1998)  <b>R99</b> (Release 1999)  <b>Rel-4</b> (Release 4)  <b>Rel-5</b> (Release 5)  <b>Rel-6</b> (Release 6)</p>	

<b>Reason for change:</b>	# The filtering has been mentioned in general level in the specification. The contribution clarifies the filtering actions that are required to be supported by stage 3 specifications.
<b>Summary of change:</b>	# <ul style="list-style-type: none"> <li>- It has been clarified that the subset of the presence information the watcher is interested is defined by the filter.</li> <li>- It has been clarified that filtering information is carried in the <i>subscribe</i> message.</li> <li>- It has been clarified that filtering can be used to select the information the watcher is interested and to set triggers which presence updates activate the notification to the particular watcher.</li> <li>- Filtering is also extended to support multiple terminal use by adding the possibility to prevent the notifications when the publishing Presence User agent is equal to the watcher.</li> </ul>
<b>Consequences if not approved:</b>	# Filtering features are not clear i.e. it can not be known what actions the watcher is able to perform via filtering.

<b>Clauses affected:</b>	# 4.3.4, 5.1, A.2.2.1								
<b>Other specs affected:</b>	# <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications # Test specifications # O&M Specifications #	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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<b>Other comments:</b>	#								

**How to create CRs using this form:**

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- 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.

\*\*\*\*\* First change \*\*\*\*\*

#### 4.3.4 Reference point Watcher applications – Presence Server (Pw)

This reference point shall allow a Watcher application to request and obtain presence information. [3] provides guidelines for such an interface.

The transport shall not impose any limitations to the size of the presence information.

In order to provide all the functionalities required on this interface, a combination of multiple protocols may be used.

This reference point shall support both presence monitoring and fetching modes. In the fetching mode, it shall be possible for the watcher to once request all or only a subset of a presentity's presence information (~~i.e. one or more tuples) pertaining to certain communication means and/or contact addresses.~~ The subset of the presence information is defined by the filter that is carried in the presence information subscription.

In the monitoring mode, it shall be possible for the watcher to request monitoring of all or a subset of a presentity's presence information (i.e. one or more tuples) ~~pertaining to certain communication means and/or contact addresses~~ and to explicitly request full or partial updates. The subset of the presence information is defined by the filter that is carried in the presence information subscription. It shall be possible for the watcher to request the presence server to filter out information when the watcher is equal to the publishing Presence User Agent.

It shall be possible for the notifications containing the presentity's presence information to contain only information as defined by filters. It shall be possible for the notifications containing the presentity's presence information to contain only the modified tuples, i.e. only those tuples which have changed since the last notification.

IPv6 shall be supported for all functionalities required from a Watcher application that supports the Pw reference point. An IPv6 capable 3GPP UE shall use IPv6 when accessing Pw.

\*\*\*\*\* Next change \*\*\*\*\*

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## 5 Functional Entities To Support Presence Service

### 5.1 Presence Server

The Presence Server shall reside in the presentity's home network.

The Presence Server shall be able to receive and manage presence information that is published by the Presence User/Network/External agents, and shall be responsible for composing the presence-related information for a certain presentity from the information it receives from multiple sources into a single presence document. The composing process to create the single presence document may involve complex transformations of presence information such as modifying the presence information from one presence source based on information from another presence source.

The mechanisms for combining the presence related information shall be defined based on presence attributes, and according to certain policy defined in the Presence Server. The Presence Server shall be capable of receiving and composing the Presence information received in the standardized formats from authorized sources regardless of the source of the information or the ability to interpret the information contained in the presence tuples. The information that the Presence Server is not able to interpret shall be handled in a transparent manner.

The Presence Server shall also allow watchers to ~~fetch-request~~ and subscribe to either the full set of presence information of a presentity, or only certain ~~tuples-information~~ within. Watcher defines the subset of the presence information, that he is interested in, by the filter that is carried in presence information subscription. The Presence Server shall be able to generate partial notifications to a watcher, these partial notifications only contain those tuples of the presentity which have been modified since the latest notification sent to the watcher about this presentity.

The Presence Server shall support SIP-based communications for publishing presence information.

The Presence Server shall support SIP-based communications with the Presentity Presence Proxy. The Presence Server is a SIP Application Server as defined by 3GPP TS 23.228 [9], and is located using SIP URLs, standard SIP and existing IMS mechanisms (SIP routing, HSS query, ISC filtering, etc...).

The Presence Server shall provide Subscription Authorization Policy. The Subscription Authorization Policy determines which Watchers are allowed to subscribe to a Presentity's Presence information.

The Subscription Authorization Policy also determines which tuples of the Presentity's Presence information the watcher has access. It shall be possible for the Presentity's Presence User Agent to provide the Subscription Authorization Policy or it may be configured by the operator as part of the service provisioning.

The Presence Server may provide a [watcher configurable](#) filtering function that is used to limit the information that is delivered to a watcher. After subscription the authorized watchers get notified of the actual Presence Information based on the Subscription Authorization Policy and the filters set by the watcher in the subscription. [If the Presence Server does not support the filters as requested by the watcher, this is indicated to the watcher. In this case the notification shall contain the actual Presence information based on the Subscription Authorization Policy and local policy in the Presence Server. The Presence Server may support one or more of the following types of filters: Filters, which allow watchers to define:](#)

- [the tuples that the watcher is interested in;](#)  
[Watcher can define a criteria which allows the complete tuple and all the information within the tuple to be transmitted. E.g. watcher can define the filter to permit notifying all the tuples \(and all the information within those tuples\) which has "tel:user@domain" as the contact address or "IM" as a communication means.](#)
- [the attributes that the watcher is interested; and](#)  
[Watcher can define a criteria which result notifies to contain values only for defined attributes \(attributes are defined by the filter and values for other attributes are not available in the notifications\)](#)
- [the triggers when a notification should be sent.](#)  
[Watcher can define a criteria which specifies when to send a notification. E.g. every time the communication means status attribute changes its value, a notification is sent to the watcher. Another example: filter out and do not send the notifications resulting from the publication of the Presence User agent that is equal to the watcher.](#)

The Presence Server shall collect watcher information to enable presentity to obtain information of the watchers that are or have been requesting, fetching or subscribing presentity's presence information. Service provider shall be able to define the maximum time period over which information is collected and stored. The watcher information list shall include:

- identity of the watcher (unless anonymity was requested);  
In case of anonymous watcher, the identity of the watcher shall not be provided to the presentity. The presentity shall be able to determine that an anonymous watcher has requested, fetched or subscribed presence information of the presentity including related information as specified in this list without revealing the watchers identity.
- time of the request, fetch or subscription;
- length of the subscription; and
- state of the request or subscription.

The Presence Server shall be able to support the presentity obtaining the above watcher information. The Presence Server shall be able to receive watcher information fetches and subscriptions from the presentity. These watcher information fetch and subscribe requests shall be able to contain filters which define

- what watchers the presentity is interested in;  
Possible categories are:
  - all watchers;
  - defined watchers;
  - new, unauthorised watchers; and
  - defined and new, unauthorised watchers.
- what information the presentity is interested in; and  
The information is all or part of the watcher information list as defined above.
- the length of the watcher information history collection period that the presentity is interested in.

In response to watcher information fetches, the presence server shall be able to provide requested watcher information to the presentity. In response to watcher information subscriptions, the presence server shall provide notification to the presentity of the current state of the subscribed watcher information. When there are subsequent changes in the subscribed watcher information, notifications of the changes in watcher information are sent to the presentity.

The Presence Server may support rate-limiting or filtering of the presence notifications based on local policy in order to minimize network load.

When the presentity is associated with a UE that has subscribed to an IMS network, according to the home control model its Presence Server shall also be located within the presentity's home IMS network.

\*\*\*\*\* Next change \*\*\*\*\*

## A.2.2 Flows demonstrating how watchers subscribe to presence event notification

The subclause covers the flows that show how watchers can request presence information about a presentity.

### A.2.2.1 IMS Watcher and IMS Presentity in the same or different IM-CN

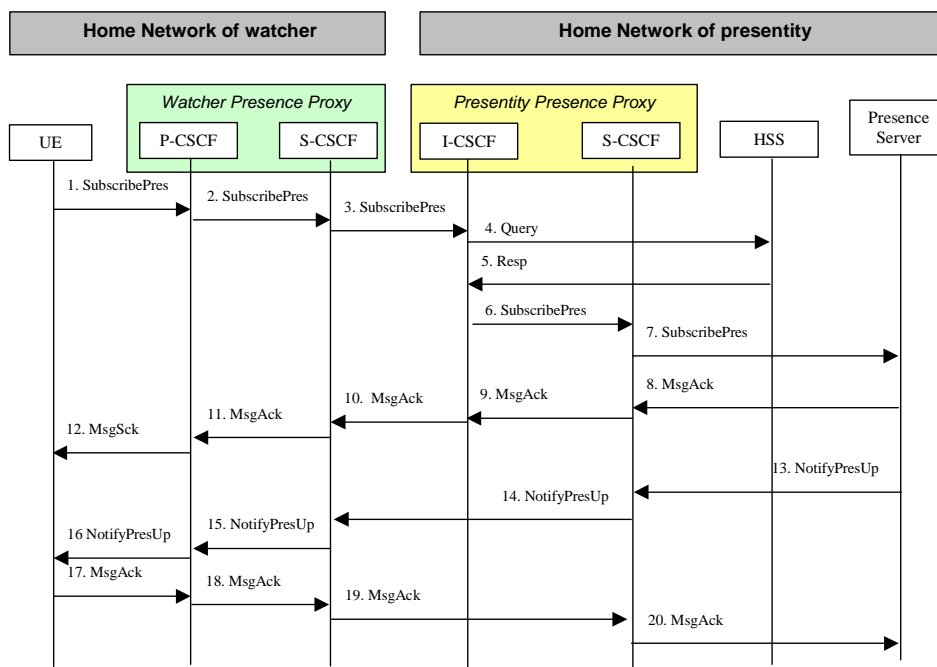


Figure A.2.2.1-1. IMS Watcher registering for event notification

Figure A.2.2.1-1 shows an IMS watcher subscribing to presence event notification about an IMS based presentity. The presentity may either be in the same IM-CN subsystem as the watcher or may be in a different IM-CN subsystem. The flows for both these cases are the same.

Note-i: The path of the SUBSCRIBE dialog may optionally include additional I-CSCF(THIGs) in networks where network topology hiding is applied.

Note-ii: The flow shows the case that the S-CSCF of the Presentity does not remain in the path of the dialog.

The details of the flows as follows:

1. A watcher agent in a UE wishes to watch a presentity's [presence information](#), or certain [tuples-parts](#) of the presentity's [presence information](#) (~~pertaining to a certain communication means or communication address~~[defined by the filters included in \*SubscribePres\*](#)). To initiate a subscription, the UE sends a



*SubscribePres* message request containing the presence related events that it wishes to be notified of, together with an indication of the length of time this periodic subscription should last. The UE sends the *SubscribePres* information flow to the proxy (subscriber identity, home networks domain name).

2. The P-CSCF remembers (from the registration process) the next hop CSCF for this UE. In this case the *SubscribePres* is forwarded to the S-CSCF in the home network. In this case, the P-CSCF and the S-CSCF act as a Watcher Presence Proxy.
3. The S-CSCF is unable to resolve the presence server address of the presentity that the UE is requesting to watch, and as a result forwards the *SubscribePres* message to the an I-CSCF offering part of the Presentity Presence Proxy functionality. The S-CSCF shall examine the home domain of the presentity associated with the request and if the request is for a presentity outside the operator's domain, it determines the external I-CSCF. If the request is for a presentity in the same domain, the S-CSCF forwards the request to the local I-CSCF.
4. The I-CSCF examines the presentity identity and the home domain identity and employs the services of a name-address resolution mechanism to determine the HSS address to contact. The I-CSCF shall query the HSS to obtain the address of the S-CSCF associated with the Presentity. It shall query the HSS via a Query message.
5. The Query Resp message from the HSS provides the name of the S-CSCF associated with the presentity.
6. The I-CSCF, using name of the Presence Server shall determine the address of the S-CSCF through a name-address resolution mechanism. The *SubscribePres* message is forwarded to the S-CSCF.
7. The S-CSCF using any necessary filtering criteria forwards the *SubscribePres* message to the appropriate Presence Server.
8. At this stage the presence server performs the necessary authorisation checks on the originator to ensure it is allowed to watch the presentity. Once all privacy conditions are met, the presence server issues a *MsgAck* to the S-CSCF . (In the case where the privacy/authorisation checks fail, then a negative acknowledgement is sent to the watcher).
9. The S-CSCF forwards the to the I-CSCF.
10. The I-CSCF forwards the *MsgAck* to the originating S-CSCF.
11. The S-CSCF forwards the *MsgAck* message to the P-CSCF.
12. The P-CSCF forwards the *MsgAck* to the watcher agent in the UE.
13. As soon as the Presence Server sends a *MsgAck* to accept the subscription, it sends a *NotifyPresUp* message with the current state of the presentity's tuples that the watcher has subscribed and been authorised to. The *NotifyPresUp* is sent along the path of the SUBSCRIBE dialog to the S-CSCF allocated to the Watcher. Further notification sent by the Presence server may either contain the complete set of presence information, or only those tuples that have changed since the last notification.
14. The S-CSCF forwards the *NotifyPresUp* to the P-CSCF.
15. The P-CSCF forwards the *NotifyPresUp* to the watcher application in the UE
16. The UE acknowledges the receipt of the *NotifyPresUp* message with a *MsgAck* sending this to the P-CSCF.
17. The P-CSCF forwards the *MsgAck* message to the S-CSCF.
18. The S-CSCF allocated to the presentity forwards the *MsgAck* to the Presence Server.

\*\*\*\*\* End of changes \*\*\*\*\*

CR-Form-v7	
<b>CHANGE REQUEST</b>	
# <b>23.141 CR 49</b> # rev <b>1</b> #	Current version: <b>6.1.0</b> #

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

<b>Title:</b>	# Addition of application identifier		
<b>Source:</b>	# Nokia		
<b>Work item code:</b>	# PRESNC	<b>Date:</b>	# 06/03/2003
<b>Category:</b>	# <b>B</b>	<b>Release:</b>	# Rel-6
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	# Application identifier has been added which enables the delivery of the tuple to the correct application to process within the watcher terminal.
<b>Summary of change:</b>	# <i>The concept of an Application identifier is introduced.</i>
<b>Consequences if not approved:</b>	# If the CR is not accepted the tuples can not be targeted to a correct application in the watcher's presence enabled applications which limits the extendability of the presence information.

<b>Clauses affected:</b>	# 6.2								
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center; width: 20px;">Y</td> <td style="text-align: center; width: 20px;">N</td> </tr> <tr> <td style="text-align: center;"># <input type="checkbox"/></td> <td style="text-align: center;"># <input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"># <input type="checkbox"/></td> <td style="text-align: center;"># <input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"># <input type="checkbox"/></td> <td style="text-align: center;"># <input checked="" type="checkbox"/></td> </tr> </table> Other core specifications # <input type="checkbox"/> Test specifications # <input type="checkbox"/> O&M Specifications # <input type="checkbox"/>	Y	N	# <input type="checkbox"/>	# <input checked="" type="checkbox"/>	# <input type="checkbox"/>	# <input checked="" type="checkbox"/>	# <input type="checkbox"/>	# <input checked="" type="checkbox"/>
Y	N								
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<b>Other comments:</b>	#								

**How to create CRs using this form:**

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

\*\*\*\*\* First change \*\*\*\*\*

## 6.2 Presence Information Model

Presence information related to a particular communications means and contact address shall be carried in a presence tuple dedicated to that particular communications means and contact address.

Generic presence information that is not directly applicable to a particular communications means and contact address shall be conveyed in a way that conforms to the IETF presence model e.g. IETF RFC 2778 [16], IETF RFC 2779 [17] (to ensure interoperability) and preferably does not require multiple instances of this information to be sent.

Generic information may be mapped to the tuples specific to each communication means and contact address. In that case the information shall be equal in each tuple. The stage 3 description should use a mechanism which conforms to the IETF presence model.

Application identifiers may be allocated to applications, which are using presence capabilities. The conventions and the allocation mechanism for application identifiers are subject to stage 3 specification. Application identifier(s) are carried as part of the presence information. Application identifier(s) may be added to published presence information on the presentity side. In this case, the presence server shall include this application identifier to the relevant tuple(s) in the presence document together with the published information. On the watcher side the received application identifier may be used e.g. for determining which application should receive and process the related presence information. Details of processing the application identifier(s) on the Presence User Agent and watcher side are out of scope of this specification.

\*\*\*\*\* End of changes \*\*\*\*\*

CR-Form-v7
<b>CHANGE REQUEST</b>
⌘ <b>23.141 CR 24</b> ⌘ rev <b>5</b> ⌘ Current version: <b>6.1.0</b> ⌘

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

<b>Title:</b>	⌘ Verification of the identity of watchers		
<b>Source:</b>	⌘ Ericsson		
<b>Work item code:</b>	⌘ PRESNC	<b>Date:</b>	⌘ 6/03/2003
<b>Category:</b>	⌘ <b>C</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: 2 (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)

<b>Reason for change:</b>	⌘ TS 23.141 does not specify which entity (in the Presentity's PLMN ) that verify the watchers identity and then if needed authenticates the watcher. The Presence Server is the best suited entity to perform this verification as the PS knows if the Presentity is interested in the watcher.
<b>Summary of change:</b>	⌘ Adds that the Presence Server shall try to verify the identity of watchers that subscribes to Presentity's Presence information.
<b>Consequences if not approved:</b>	⌘ It is left unspecified which entity that verify the identity of watchers.

<b>Clauses affected:</b>	⌘ 5.1				
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications ⌘	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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<input type="checkbox"/>	<input checked="" type="checkbox"/>				
<b>Other comments:</b>	⌘				

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## 5 Functional Entities To Support Presence Service

### 5.1 Presence Server

The Presence Server shall reside in the presentity's home network.

The Presence Server shall be able to receive and manage presence information that is published by the Presence User/Network/External agents, and shall be responsible for composing the presence-related information for a certain presentity from the information it receives from multiple sources into a single presence document. The composing process to create the single presence document may involve complex transformations of presence information such as modifying the presence information from one presence source based on information from another presence source.

The mechanisms for combining the presence related information shall be defined based on presence attributes, and according to certain policy defined in the Presence Server. The Presence Server shall be capable of receiving and composing the Presence information received in the standardized formats from authorized sources regardless of the source of the information or the ability to interpret the information contained in the presence tuples. The information that the Presence Server is not able to interpret shall be handled in a transparent manner.

The Presence Server shall also allow watchers to fetch and subscribe either the full set of presence information of a presentity, or only certain tuples within. The Presence Server shall be able to generate partial notifications to a watcher, these partial notifications only contain those tuples of the presentity which have been modified since the latest notification sent to the watcher about this presentity.

Before the subscription to presence information is accepted, the Presence Server should attempt to verify the identity of the watcher that subscribes to Presentity's Presence information, except if the watcher has indicated his desire to remain anonymous. The action taken by the Presence Server if the verification fails may include notifying the Presentity.

The Presence Server shall support SIP-based communications for publishing presence information.

The Presence Server shall support SIP-based communications with the Presentity Presence Proxy. The Presence Server is a SIP Application Server as defined by 3GPP TS 23.228 [9], and is located using SIP URLs, standard SIP and existing IMS mechanisms (SIP routing, HSS query, ISC filtering, etc...).

The Presence Server shall provide Subscription Authorization Policy. The Subscription Authorization Policy determines which Watchers are allowed to subscribe to a Presentity's Presence information.

The Subscription Authorization Policy also determines which tuples of the Presentity's Presence information the watcher has access. It shall be possible for the Presentity's Presence User Agent to provide the Subscription Authorization Policy or it may be configured by the operator as part of the service provisioning.

The Presence Server may provide a filtering function that is used to limit the information that is delivered to a watcher. After subscription the authorized watchers get notified of the actual Presence Information based on the Subscription Authorization Policy and the filters set by the watcher in the subscription.

The Presence Server shall collect watcher information to enable presentity to obtain information of the watchers that are or have been requesting, fetching or subscribing presentity's presence information. Service provider shall be able to define the maximum time period over which information is collected and stored. The watcher information list shall include:

- identity of the watcher (unless anonymity was requested);  
In case of anonymous watcher, the identity of the watcher shall not be provided to the presentity. The presentity shall be able to determine that an anonymous watcher has requested, fetched or subscribed presence information of the presentity including related information as specified in this list without revealing the watchers identity.
- time of the request, fetch or subscription;
- length of the subscription; and
- state of the request or subscription.

The Presence Server shall be able to support the presentity obtaining the above watcher information. The Presence Server shall be able to receive watcher information fetches and subscriptions from the presentity. These watcher information fetch and subscribe requests shall be able to contain filters which define

- what watchers the presentity is interested in;  
Possible categories are:
  - all watchers;
  - defined watchers;
  - new, unauthorised watchers; and
  - defined and new, unauthorised watchers.
- what information the presentity is interested in; and  
The information is all or part of the watcher information list as defined above.
- the length of the watcher information history collection period that the presentity is interested in.

In response to watcher information fetches, the presence server shall be able to provide requested watcher information to the presentity. In response to watcher information subscriptions, the presence server shall provide notification to the presentity of the current state of the subscribed watcher information. When there are subsequent changes in the subscribed watcher information, notifications of the changes in watcher information are sent to the presentity.

The Presence Server may support rate-limiting or filtering of the presence notifications based on local policy in order to minimize network load.

When the presentity is associated with a UE that has subscribed to an IMS network, according to the home control model its Presence Server shall also be located within the presentity's home IMS network.

## 5.2 Presence Agent Elements