Technical Specification Group Services and System Aspects ***TSGS#18(02)0773***

Meeting #18, New Orleans, U.S.A., 9-12 December 2002

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 #18.
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.

Tdoc #	Title	Spec	CR #	cat	Version in	REL	WI	S2 meeting
S2-023634	Pen interface functionality	23.141	030	F	6.0.0	6	PRESNC	S2-28
S2-023622	Presence attributes	23.141	017rev2	F	6.0.0	6	PRESNC	S2-28
S2-023624	Clarifications on access rules	23.141	004rev4	F	6.0.0	6	PRESNC	S2-28
S2-023621	Correction to IMS Notification process to the Presence Server within IMS	23.141	009rev2	F	6.0.0	6	PRES	S2-28
S2-023623	Presence attributes	23.141	031	F	6.0.0	6	PRESNC	S2-28
S2-023630	Filter information in presence list server	23.141	033	B	6.0.0	6	PRESNC	S2-28
S2-023631	Pen Reference Point	23.141	026rev1	C	6.0.0	6	PRESNC	S2-28
S2-023082	CR to Relationship of Presence Network Agent with IMS entities	23.141	010rev5	C	6.0.0	6	PRESNC	S2-27
S2-022927	Presentity Presence Proxy functionality	23.141	020	F	6.0.0	6	PRESNC	S2-27
S2-022998	Email review corrections to be updated to 23.141	23.141	021	F	6.0.0	6	PRESNC	S2-27
S2-023084	Clarification of which reference point is used when PUA subscribes to watchers	23.141	016rev1	F	6.0.0	6	PRESNC	S2-27
S2-023087	Activation of CAMEL mobility reports	23.141	018rev1	F	6.0.0	6	PRESNC	S2-27
S2-023379	Watcher flows	23.141	025	C	6.0.0	6	PRESNC	S2-28

3GPP TSG-SA2 #27
Beijing, China, 14-18/10/02

Tdoc S2-022927

CR-Form-v7

CHANGE REQUEST

⌘ **23.141** **CR** **20** ⌘ **rev** **0** ⌘ Current version: **6.0.0** ⌘

*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 ☒

Title:	⌘	Presentity Presence Proxy Functionality
Source:	⌘	Vodafone Ltd
Work item code:	⌘	PRESNC
Date:	⌘	09/10/2002
Category:	⌘	**F**
Release:	⌘	Rel-6

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

Use one of the following releases:

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)*

Reason for change:	⌘	The presentity presence proxy needs to check the authenticity of the watcher presence proxy. This is omitted from section 5.3.3, however, it is described in the IMS specific section 5.3.4.
Summary of change:	⌘	Text added in 5.3.3.
Consequences if not approved:	⌘	A non-IMS implementation of Presence might omit key functionality.

Clauses affected:	⌘	5.3.3			
Other specs affected:	⌘	**Y**	**N**		
		☐	☐	Other core specifications	⌘
		☐	☐	Test specifications	
		☐	☐	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:
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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.

5.3 Presence Proxies

5.1.1 Presence Proxies introduction

In order to support a presence service, in particular across PLMN borders, generic network functions are needed, e.g. routing and security. The presence proxies provide these functions. Presence proxies constitute the entry and exit point for presence requests between PLMNs.

5.3.2 Watcher Presence Proxy

When a Watcher application intends to access some presence information of a presentity, it first needs to find the Presence Server containing this information.

The Watcher Presence Proxy shall provide the following functionality:

- Address resolution and identification of target networks associated with a presentity;
- Authentication of watchers;
- Interworking between presence protocols for watcher requests;
- Generation of accounting information for watcher requests.

5.3.3 Presentity Presence Proxy

The Presentity Presence Proxy shall provide the following functionality:

- Determination of the identity of the presence server associated with a particular presentity;
- Authentication of Watcher Presence Proxy;
- Generation of accounting information for updates to presence information.

Editor's Note: The Presentity and or the Watcher Presence Proxies may also be responsible for providing network configuration hiding. This is for further study.

5.3.4 Relationship of Presence Proxies with IMS entities

The functionalities of the Watcher Presence Proxy are then taken care of by the P-CSCF and the S-CSCF:

- The S-CSCF is responsible for authentication according to procedures described in 3GPP TS 33.203 [5].
- The charging and accounting procedures are conducted as per procedures defined by 3GPP TS 32.200 [6], 3GPP TS 32.225 [7].
- The security mechanisms between the Watcher and the Presentity Presence proxy are~~is~~ defined by 3GPP TS 33.210 [8].

The functionality of the Presentity Presence Proxy is taken care of by the I-CSCF and the S-CSCF as defined in 3GPP TS 23.228 [9].

The procedures for locating, routing to and accessing the Presence Server of the presentity are defined in 3GPP TS 23.228 [9] and 3GPP 23.218 [10]. These procedures also take care of routing and accessing the Presence Server of a presentity that is associated with an unregistered UE.

The functionality of the Watcher Presence Proxy and the Presentity Presence Proxy are allocated to the functional element CSCF as defined in 3GPP TS 23.002 [18].

Figure 5.3.4-1 below presents the mapping of the Watcher and Presentity Presence Proxy functionalities to IMS network elements when located within the IMS along with the Watcher application. This mapping is based on and

restricted to reusing the existing IMS architecture mechanisms and can be clearly seen in the detailed information flows show in annex A.

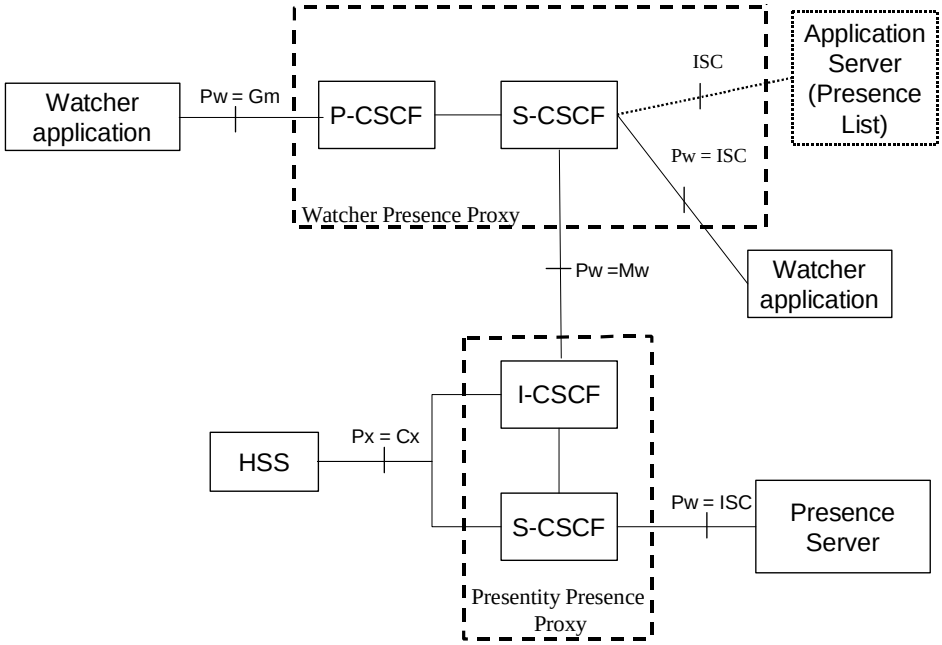

Figure 5.3.4-1: Both the Watcher application and the Presence Server located within IMS

NOTE 1: In order to apply optimizations for wireless environment, such as those proposed in IETF draft-ietf-simple-presencelist-package [12], the Watcher Presence Proxy functionality may interface to an Application Server that provides the functionality of the Presence List Server and optionally additional functions. Figure 5.3.4-1 presents such an Application Server as a dotted box.

NOTE 2: The standard IMS (SIP) routing mechanisms define whether a certain CSCF is indeed included in the path of a SUBSCRIBE or NOTIFY transaction.

As described in IETF draft-ietf-simple-presence [4], the Watcher Application sends a SIP SUBSCRIBE to Event: presence addressed to the presentity's SIP URL to subscribe or fetch presentity's presence information. This SUBSCRIBE transaction will be routed and handled by the IMS infrastructure according to standard IMS routing and ISC procedures defined in 3GPP TS 23.228 [9] and 3GPP TS 23.218 [10]. The presence document will be provided from the Presence Server to the Watcher Application using SIP NOTIFY along the dialogue setup by SUBSCRIBE either within the NOTIFY payload, or via a URL provided in the NOTIFY. The means to fetch the content can be seen as part of the Pw interface.

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Bangkok, Thailand, 11-15/11/02

Tdoc ⌘S2-023634428

CR-Form-v7

CHANGE REQUEST

⌘ **23.141** **CR** **30** ⌘**rev** **0** ⌘ Current version: **6.0.0** ⌘

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

Title:	⌘	**Pen interface functionality**
Source:	⌘	Vodafone Ltd
Work item code:	⌘	PRESNC
Date:	⌘	6/11/2002
Category:	⌘	**F**
Release:	⌘	REL-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
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R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The provision of CAMEL mobility information can impose signaificant load on network entities and signalling networks. Hence this functionality should only be used as and when it is needed and only for those subscribers that need it. Hence the Presence Server needs to be able to activate and deactivate network event reporting.
Summary of change:	⌘	In section 4.3.2 Reference point Network Agent – Presence Server (Pen), Pen shall provide mechanisms for the Presence Server to request the Presence Network Agent to activate or deactivate the reporting of Presence Information from the network entities within the PLMN.
Consequences if not approved:	⌘	Network event reporting will not be able to be used as part of the Presence service. [The stage 2 will be out of line with the stage 1 requirements.]

Clauses affected:	⌘	4.3.2

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

Other comments: ⌘

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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.

4 Presence Architecture

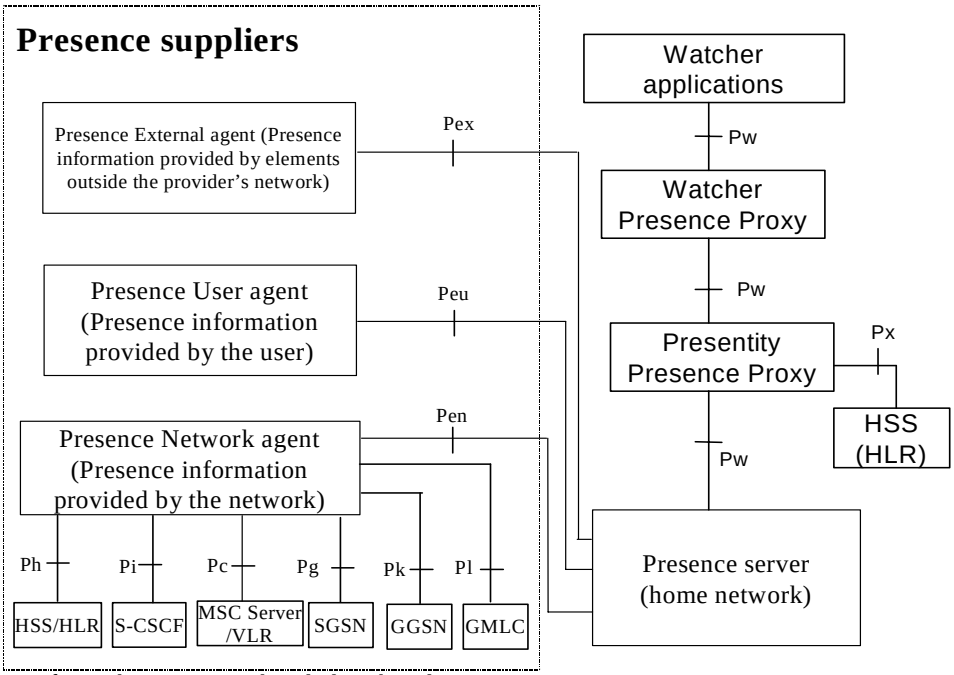
4.1 Overview

The Presence Service provides the ability for the home network to manage presence information of a user's device, service or service media even whilst roaming. A user's presence information may be obtained through input form the user, information supplied by network entities or information supplied by elements external to the home network. Consumers of presence information, watchers, may be internal or external to the home network.

4.2 Reference Architecture Model

The generic reference architecture for providing presence service is depicted in Figure 4.2-1 below. The details of the elements in the figure (eg agents, proxies) are provided in clause 5.

The mapping of the Presence Service functional elements and reference points to the functional elements and reference points in the 3GPP Network Architecture 3GPP TS 23.002 [18] is defined in clauses 4.3 and clause 5.



Interfaces Ph, Pi, Pc, Pg, Pk and Pl are based on existing R5 procedures e.g. CAMEL, MAP, CAP, RADIUS, ISC, Cx, Sh.

Figure 4.2-1: Reference architecture to support a presence service

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 supply 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.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 access rules.

Pen shall provide mechanisms for the Network Agent to supply only a certain subset of the presentity's presence information to the Presence Server.

Pen shall provide mechanisms for ~~the Presence Server to request the Presence Network Agent to~~ activating~~e~~ or deactivating~~e~~ 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.

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 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.

3GPP TSG-SA WG2 Meeting #28
Bangkok, Thailand, 11-15 November 2002

Tdoc ⌘S2-023631

CR-Form-v7

CHANGE REQUEST

⌘ **23.141** **CR** **26** ⌘**rev** **1** ⌘ Current version: **6.0.0** ⌘

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

Title:	⌘	Pen Reference Point
Source:	⌘	Siemens, Alcatel, Ericsson
Work item code:	⌘	PRES
Date:	⌘	14/11/2002
Category:	⌘	**C**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
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Use one 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)*

Reason for change:	⌘	While the Network agent has been defined a functional entity, it seems highly unlikely that it will ever be implemented as a stand-alone entity. Thus standardising the protocols for the Pen reference point results in additional complexity and effort in both standardisation and implementations without adding value. See S2-023340 for a detailed discussion.
Summary of change:	⌘	The protocols and the stage 2 information flows used at the Pen reference point are not standardised.
Consequences if not approved:	⌘	Increased complexity, high standardisation effort, risk of lack of inter-operability.

Clauses affected:	⌘	4.3.2, 5.2.2.1, A.2.3.3			
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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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 ****

4.3.2 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 access rules.

Pen shall provide mechanisms for the Network Agent to supply only a certain subset of the presentity's presence information to the Presence Server.

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.

***** NEXT CHANGE ****

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/Presentity combination.
- The Presence Network Agent shall convert the Presence information into the format ~~standardized for~~ used at the Pen interface.
- The Presence Network Agent shall publish the Presence information to the Presence Server across the Pen reference point.

***** NEXT SET OF CHANGES ****

A.2.3.3 CS/PS Notification process of the Presence Server

The following flow describes how the presence server is notified of an event by the network elements for a CS/PS subscriber.

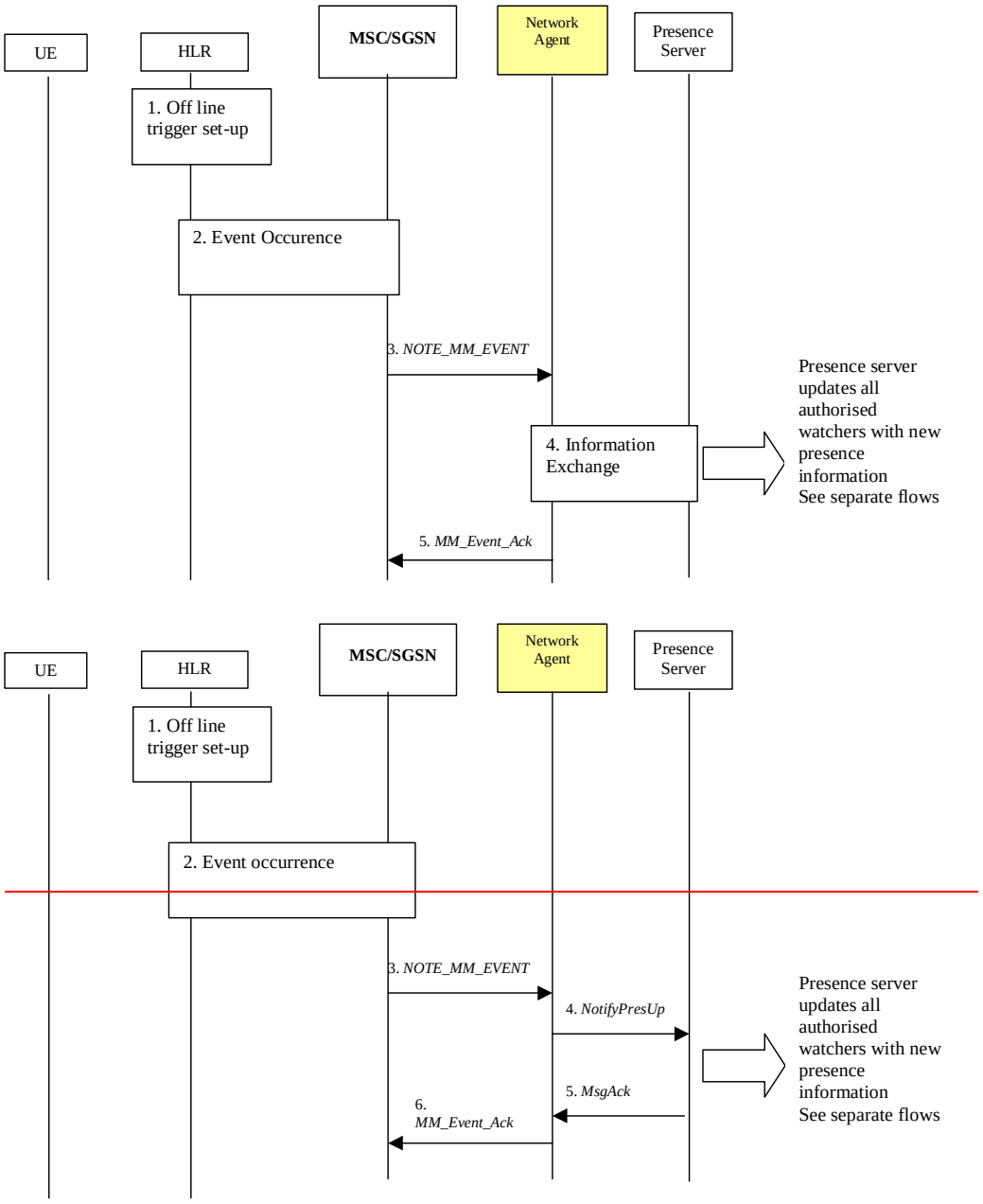

Figure A.2.3.3-1: CS/PS Notification procedure for the Presence Server.

1. For network event to be reported on behalf of a CS/PS subscriber, the necessary triggers are armed in the MSC/SGSN. This takes place off-line and is outside the scope of this TR as to how it is achieved.

2. At the occurrence of an event between the HLR and the MSC/SGSN, (e.g UE detach) a notification message is generated.

3. A MAP notification message (NOTE_MM_EVENT) is sent to the Network Agent via Pc/Pg interface on the occurrence of an event, details of this are outside the scope of this flow. There may be some address resolution needed by the network agent to locate the presence server but details of this is also outside the scope of this flow..

4. -The Network Agent ~~sends *NotifyPresUp* message to~~ informs the Presence Server ~~via the Pen interface~~. The Presence Server notifies all authorised watchers and sends an acknowledgement to the Network Agent.

~~5.Prior to notifying all authorised watchers, it acknowledges the receipt of the *NotifyPresUp* message with a *MsgAck* to the Network Agent.~~

5. Network Agent sends an MM_Event_Ack to the MSC/SGSN.

***** END OF CHANGES ****

3GPP TSG-SA2 Meeting #28
Bangkok, Thailand, 11th-15th

Tdoc ⌘S2-023630

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CHANGE REQUEST

⌘ **23.141** **CR** **33** ⌘**rev** **-** ⌘ Current version: **6.0.0** ⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	Filter information in presence list server
Source:	⌘	Nokia
Work item code:	⌘	PRESNC
Date:	⌘	14/11/2002
Category:	⌘	**B**
Release:	⌘	Rel-6

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

Use one of the following releases:

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)*

Reason for change:	⌘	The modifications allow to use filters together with presence list server.
Summary of change:	⌘	Capability to store filters and attach them to the individual subscriptions has been added as the functionality of presence list server.
Consequences if not approved:	⌘	If the change is not approved watcher cannot set filters when using presence list server which may result in low radio efficiency.

Clauses affected:	⌘	5.5			
Other specs affected:	⌘	**Y**	**N**		
		[ ]	[ ]	Other core specifications	⌘
		[ ]	[ ]	Test specifications	
		[ ]	[ ]	O&M Specifications	
Other comments:	⌘				

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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 ******

5.5 Presence List Server

The Presence List Server stores grouped lists of watched presentities and enables a Watcher Application to subscribe to the presence of multiple presentities using a single SUBSCRIBE transaction. Presence List Server also stores and enables the management of filters associated to presentities in the presence list. Presence list server shall attach associated filter to each individual SUBSCRIBE transaction. The Presence List Server is implemented as a SIP Application Server function as defined in 3GPP TS 23.228 [9].

Editor's Note: Additional interfaces may be required for any non SIP functionality between watcher and the Presence List Server.

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

3GPP TSG-SA2 Meeting #28
Bangkok, Thailand, 11 – 15 November

Tdoc S2 –023624

CR-Form-v7

CHANGE REQUEST

⌘ **23.141** **CR** **004** ⌘**rev** **4** ⌘ Current version: **6.0.0** ⌘

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

Title:	⌘	Clarification on access rules
Source:	⌘	NEC Corporation
Work item code:	⌘	Presenc
Date:	⌘	5/11/2002
Category:	⌘	**F**
Release:	⌘	Rel-6

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

Use one of the following releases:

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)*

Reason for change:	⌘	Terminology “ access rule” needs to be changed to “subscription authorisation policy” for the alignment with other subclause and stage 3 specifications.
Summary of change:	⌘	Terminology “ access rule” is proposed to change to “subscription authorisation policy” for the alignment with other subclause and stage 3 specifications.
Consequences if not approved:	⌘	Terminology ”access rule” is misaligned with other clauses and specifications.

Clauses affected:	⌘	4.3.1, 4.3.2, 4.4, 5.1.1, 6.1.2, 7, A.2.5

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

Other comments:	⌘	

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Start of 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~~subscription authorisation policies.

Peu shall provide mechanisms for the Presence User Agent to supply 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.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 ~~access rules~~subscription authorisation policies.

Pen shall provide mechanisms for the Network Agent to supply only a certain subset of the presentity's presence information to the Presence Server.

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

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 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.

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 and to explicitly request 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.

4.3.5 Reference point HSS/HLR – Presence Network Agent (Ph)

This reference point shall allow the Presence Network Agent to query HSS/HLR about the state and status of a subscriber (associated with a presentity) from the CS Domain, GPRS and IMS perspective. This reference point may also allow the enabling of receiving updates of presence information. This reference point uses capabilities defined for the Sh reference point as defined in 3GPP TS 23.002 [14] as well as the MAP interface.

4.3.6 Reference point S-CSCF – Presence Network Agent (Pi)

The S-CSCF may provide IMS-specific presence information (e.g. about ongoing IMS sessions). This reference point shall use mechanisms defined for the ISC reference point as defined in 3GPP TS 23.002 [18].

4.3.7 Reference point Presentity Presence Proxy – HSS (Px)

This interface shall assist locating the Presence Server of the presentity. This interface is implemented using the mechanisms defined for the Cx and Dx reference points as defined in TS 23.002 [18].

4.3.8 Reference point Presence Network Agent – GMLC (Pl)

This reference point shall be used by the Presence Network Agent to retrieve location information related to a subscriber (associated with the presentity). This reference point is implemented using the mechanisms as defined in 3GPP TS 23.271 [14] for the Le reference point as defined in TS 23.002 [18].

4.3.9 Reference point Presence Network Agent – SGSN (Pg)

This reference point shall allow the SGSN to report mobility management related events to the Presence Network Agent (such as attach/detach/routing area update). This reference point is implemented using the MAP interface.

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). This reference point is implemented using the MAP interface.

4.3.11 Reference point Presence Network Agent – GGSN (Pk)

This reference point shall allow the GGSN to report presence relevant events to the Presence Network Agent (such as PDP context activation/de-activation). This reference point is implemented using the mechanisms of the RADIUS interface for reporting of access requests on Gi reference point as defined in 3GPP TS 29.061 [13].

4.4 Support of OSA Presence Service Capability Server in the Presence Architecture

An OSA API may be provided to allow external application to access presence service features, details of which are found in 3GPP TS 23.127 [15].

The OSA Presence SCS may act like a presentity or a watcher. The application may then register as a presentity and/or watcher, to supply presence information, to request presence information, to be notified of subsequent changes, to request watcher information, and to manage ~~access rules~~ subscription authorisation policies.

End of first change

Start of second change

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~~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.

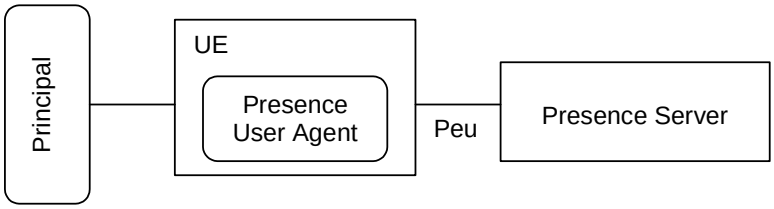

Figure 5.2.1-1. UE based Presence User Agent

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 such a case an additional functionality may be required to resolve the location of the presence server associated with the presentity.

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

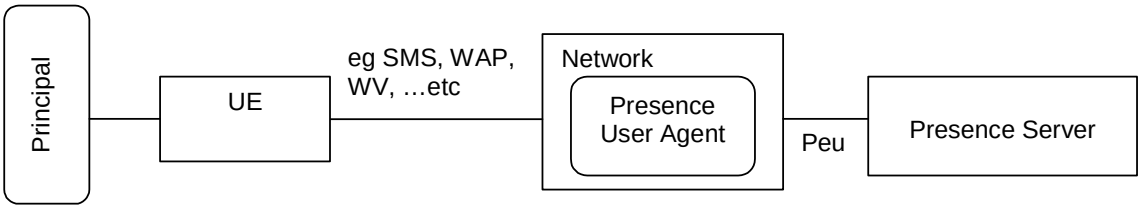

Figure 5.2.1-2. Network based Presence User Agent

End of second change

Start of third change

6.1.2 Presence Structure to Support Multiple Values for Attributes

Attributes shall be mapped to separate tuples which have unique identifiers. If the presentity wants to show different presence information concerning one attribute to different watchers the presentity shall create more than one tuple that contain the same attribute with different value. The association of tuples to different watchers and watcher groups shall be based on the subscription authorisation policies ~~access rule~~s. The presentity controls the value of the attribute by modifying the corresponding tuple. Figure 6.1.2-1 illustrates how different values for different watchers are provided utilising subscription authorisation policies ~~access rule~~s.

NOTE: The figure 6.1.2-1 is illustrative only and it shall not mandate or limit the server implementation options.

Access list
"Friends":
Matt
Bob
Bryan
Tuples:
Tuple 1
Tuple 2
Tuple 3

Access list
"Public":
'All watchers'
Tuples:
Tuple 3
Tuple 4
Tuple 5

Tuple 1:
Attribute 1 = value A
Attribute 2 = value B

Tuple 2:
Attribute 3 = value C
Attribute 4 = value B

Tuple 3:
Attribute 5 = value D
Attribute 6 = value E

Tuple 4:
Attribute 1 = value E
Attribute 2 = value F

Tuple 5:
Attribute 3 = value C
Attribute 7 = value G

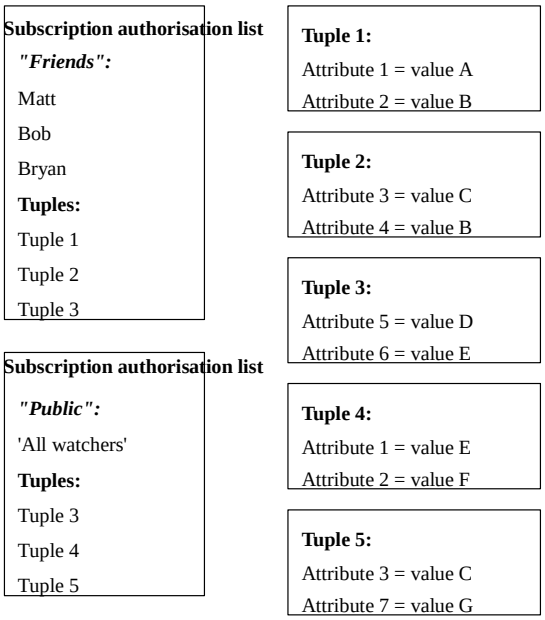

Figure 6.1.2-1: Illustration how subscription authorisation ~~access~~ lists are utilised to present different values of the same attribute to different watchers

End of third change

Start of fourth change

7 ~~Access rules~~Subscription authorisation policies

~~Access rules~~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 ~~access rules~~ shall contain the presence information or reference to the presence information that is allowed to be accessed by the listed watchers. The subscription authorisation ~~access~~ lists can be logically arranged to be part of the presence server or a separate entity in the network.

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

Personal and general subscription authorisation ~~access~~ lists shall define which watchers can access which information. Personal subscription authorisation ~~access~~ lists shall explicitly identify watchers, while general subscription authorisation ~~access~~ 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 ~~access~~ lists as well as blocking subscription authorisation lists.

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

The following shows an example where the presentity has defined a single subscription authorisation ~~access~~ 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~~access~~ list?
3. Is the watcher on the general subscription authorisation~~access~~ list (created e.g. by service provider containing all watchers)?
4. Send a notification to the presentity of pending subscription authorisation~~access~~ request.

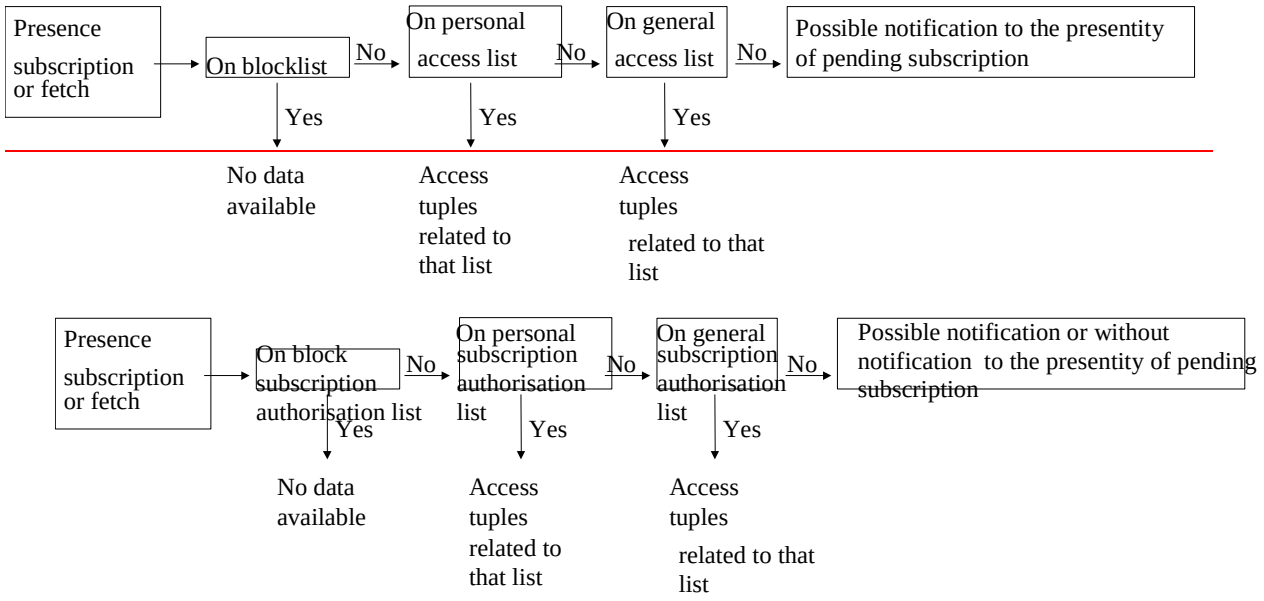

Figure 7-1. Example of subscription authorisation ~~access~~ list evaluation order for presence service

End of fourth change

Start of fifth change

A.2.5 Presence User Agent subscribing to watcher list and receiving notification of a new watcher subscription

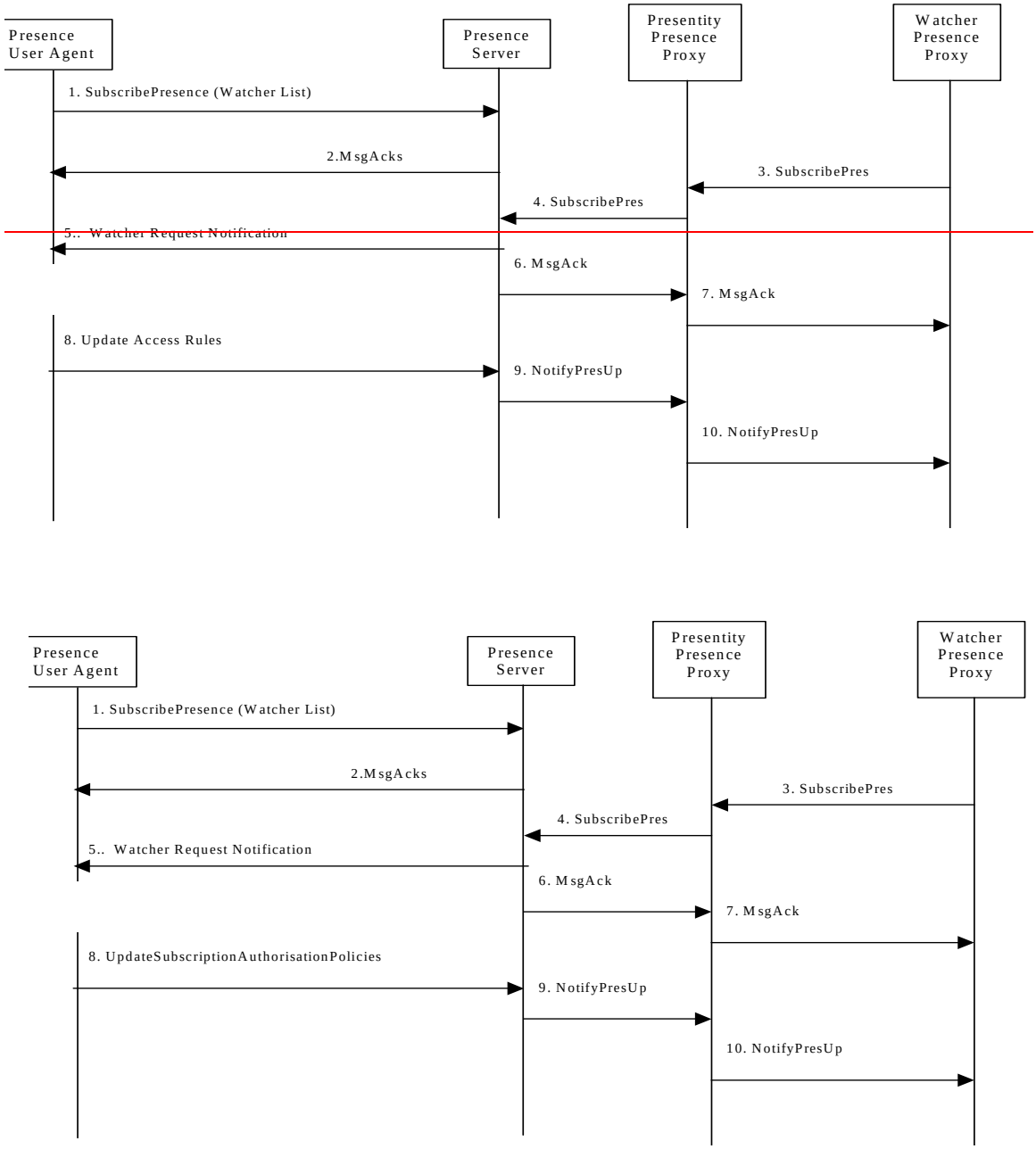

Figure A.2.5-1: Presence User Agent subscribing to watcher list and receiving notification of a new watcher subscription

Figure A.2.5-1 shows a Presence User Agent subscribing to watcher list and receiving notification of a new watcher subscription that is not contained in the current subscription authorisation policies ~~access rule~~s. The details of the flows are as follows:

1) The Presence User Agent initiates a subscription to the Presence Server requesting notification of any new watcher subscriptions.

2) The presence server issues a *MsgAck* to the Presence User Agent.

3) A watcher wishes to watch the Presentity. To initiate a subscription, the watcher 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 to the Watcher Presence Proxy. The Watcher Presence Proxy sends the *SubscribePres* information flow to the Presentity Presence Proxy.

4) The *SubscribePres* is forwarded by the Presentity Presence Proxy to the Presence Server.

5) The Presence Server checks the subscription authorisation policies ~~access rule~~s and determines that this is a new watcher subscription not contained in the current subscription authorisation policies ~~access rule~~s and so sends a notification to inform the Presence User Agent of the request from the new watcher.

6) The presence server issues a *MsgAck* to inform the watcher that the Presence Server has received the watcher's request for Presence information. The *MsgAck* is sent to the Presentity Presence Proxy.

7) The *MsgAck* is forwarded by the Presentity Presence Proxy to the watcher via the Watcher Presence Proxy.

Steps 8 – 10 depend on the actions of the Principal. The Principal can ignore the notification sent in step 5 or can respond with an Update of the subscription authorisation policies ~~Access Rule~~s to Accept, Accept with conditions or Deny the request.

8) The Presence User Agent sends an *Update*_SubscriptionAuthorisationPolicies_ ~~*AccessRule*~~*s* to the Presence Server. (If the Presence User Agent decides to accept, block or accept with conditions the Presence Information requested by the watcher an appropriate *SubscriptionAccepted*, *SubscriptionBlocked* or *SubscriptionAcceptedWithConditions* is sent within the *Update*_SubscriptionAuthorisationPolicies_ ~~*AccessRule*~~*s* to the Presence Server).

9) If the ~~Update~~*UpdateSubscriptionAuthorisationPolicies* ~~AccessRule~~s accepts the subscription then the Presence Server sends a *NotifyPresUp* message with the current state of the Presence User Agent to the Presentity Presence Proxy. If the *Update*_SubscriptionAuthorisationPolicies_ ~~*AccessRule*~~*s* indicates that the subscription is blocked then steps 9 and 10 are not performed.

10) The Presentity Presence Proxy forwards the *NotifyPresUp* message to the watcher via the Watcher Presence Proxy.

End of fifth change

3GPP TSG-SA2 Meeting #28
Bangkok, Thailand, 11th-15th November, 2002

Tdoc ⌘S2-023623

CR-Form-v7

CHANGE REQUEST

⌘ **23.141** **CR** **31** ⌘**rev** **-** ⌘ Current version: **6.0.0** ⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	Presence attributes
Source:	⌘	Ericsson
Work item code:	⌘	PRESNC
Date:	⌘	15/11/2002
Category:	⌘	**F**
Release:	⌘	Rel-6

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

Use one of the following releases:

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)*

Reason for change:	⌘	The current definition of attributes imply that the “network status” represents the reachability of the user as presented by the network per communication means. This removes the possibility for the user to provide a “closed” status value associated to a particular contact means, without the watcher being able to know the real reason for this value (lack of willingness to communicate or impossibility to communicate).
Summary of change:	⌘	The “network status” attribute is generalized to “communication means status”.
Consequences if not approved:	⌘	A presentity may not be able to define its status per communication means.

Clauses affected:	⌘	6.1.1			
Other specs affected:	⌘	**Y**	**N**		
			N	Other core specifications	⌘
			N	Test specifications	
			N	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:
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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.

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.
    - Subscriber provided location (free format text),
    - 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:
    - ~~network~~ 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),
    - network provided location (Last known CGI/SAI and/or geographic co-ordinates and age of location information),
    - 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

3GPP TSG-SA2 Meeting #28
Bangkok, Thailand, 11th-15th November, 2002

Tdoc ⌘S2-023622

CR-Form-v7

CHANGE REQUEST

⌘ **23.141** **CR** **17** ⌘**rev** **2** ⌘ Current version: **6.0.0** ⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	Presence attributes
Source:	⌘	Ericsson
Work item code:	⌘	PRESNC
Date:	⌘	14/11/2002
Category:	⌘	**F**
Release:	⌘	Rel-6

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

Use one of the following releases:

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)*

Reason for change:	⌘	The definition of two separate location attributes may lead to an inconsistency and the limitation of network provided location values to “last known CGI/SAI and/or geographic co-ordinates” seems to forbid these information to be translated into corresponding location names before being sent to the watcher.
Summary of change:	⌘	The two location attributes are merged into one generic location attribute.
Consequences if not approved:	⌘	Watchers may receive inconsistent location values.

Clauses affected:	⌘	6.1.1			
		Y	**N**		
Other specs affected:	⌘		**N**	Other core specifications	⌘
			N	Test specifications	
			N	O&M Specifications	
Other comments:	⌘				

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.

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.

    - ~~Subscriber provided l~~Location (~~free format text~~ Last known CGI/SAI and/or geographic co-ordinates and/or free format text and age 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:
    - network 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),

    ~~onetwork provided location (Last known CGI/SAI and/or geographic co-ordinates and age of location information),~~

    - 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

Tdoc S2-023621

CR-Form-v7

CHANGE REQUEST

⌘ **23.141** **CR** **9** ⌘ **rev** **2** ⌘ Current version: **6.0.0** ⌘

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

Title:	⌘	Correction to IMS registration presence notification example
Source:	⌘	dynamicsoft
Work item code:	⌘	PRES
Date:	⌘	November 1st, 2002
Category:	⌘	**F**
Release:	⌘	Rel-6

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

Use one of the following releases:
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)

Reason for change:	⌘	The example for Notification process of to the Presence Server within IMS in clause A.2.3.2 is not aligned with the architecture in the main body.
Summary of change:	⌘	Modified clause A.2.3.2 to show the S-CSCF interacting with the Presence Server via a Presence Network Agent as per the functional architecture.
Consequences if not approved:	⌘	Example flow is out of alignment with the architecture and this could cause confusion in the development of the stage 3.

Clauses affected:	⌘	A.2.3.2

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

Other comments: ⌘

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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

FIRST MODIFICATION

A.2.3.2 IMS Registration Notification process ~~of~~ to the Presence Server within IMS

The following flow describes how the presence server is notified of an IMS registration event by the network elements.

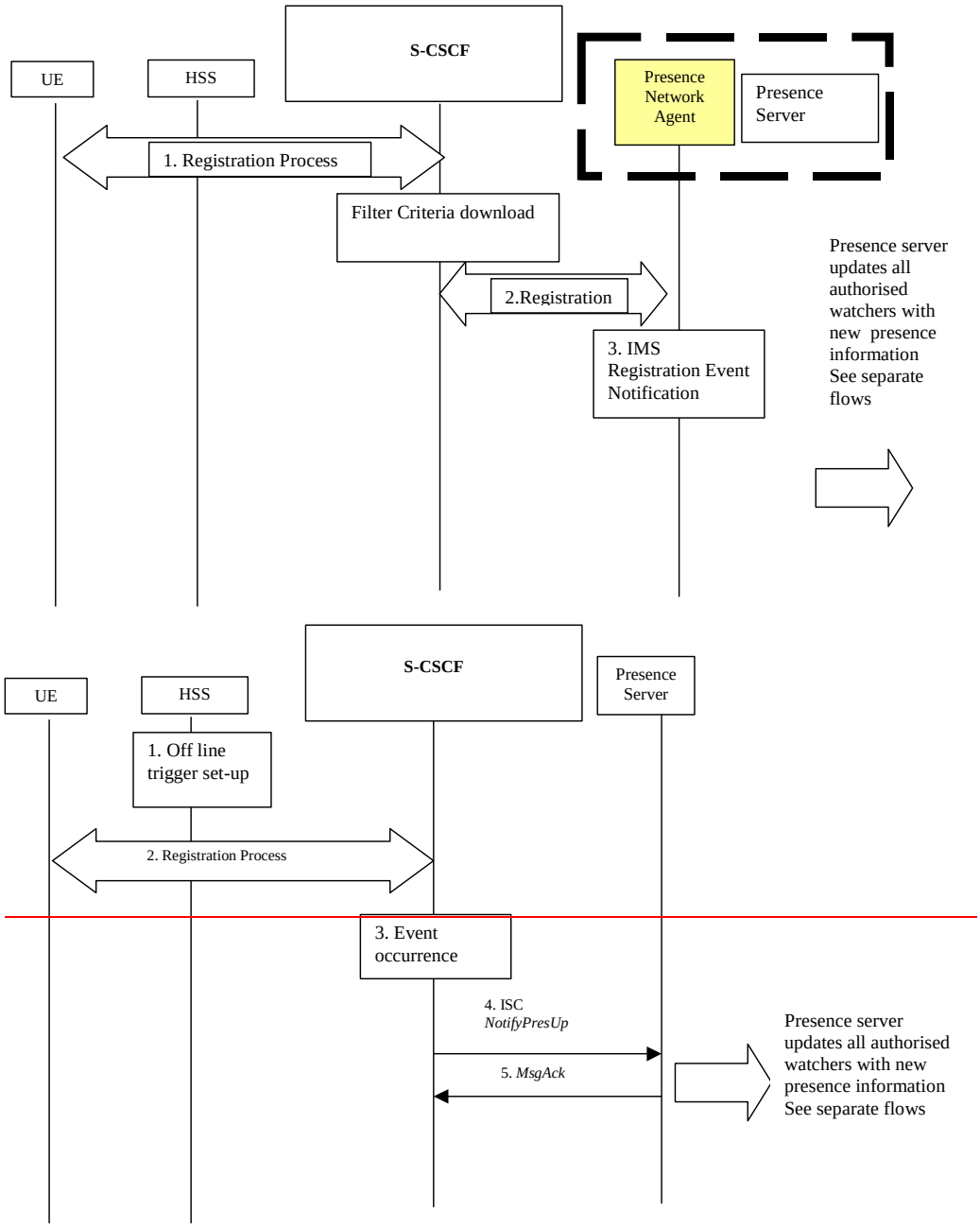

Figure A.2.3.2-1: IMS Registration Notification procedure for the Presence Server.

~~1.For the S-CSCF to report events of a presentity, the filtering criteria associated with the user need to be set. This takes place off-line and is outside the scope of this TR as to how it is achieved.~~

1. UE registration takes place with the S-CSCF as detailed in TS 23.228 [9]. As part of this process, the filtering criteria are downloaded to the S-CSCF from the HSS. The filter criteria contains instructions that the registration be sent to the presence ~~server~~network agent (eg. registration, de-registration). ~~In addition to the presence server address, the filtering criteria contain the event notifications to be reported to the presence server (eg. registration, de-registration).~~

2. The S-CSCF sends the registration to the Presence Network Agent via the ISC interface.

3. When the Presence Network Agent receives the notification of the IMS registration event from the S-CSCF, it determines that this registration is an event that the Presence Server is interested in and ~~a *NotifyPresUp* message is generated~~informs the Presence Sever.

~~When an event occurs that in the S-CSCF, the *NotifyPresUp* message is generated.~~

~~3. If the Presence Network Agent is not collocated with the Presence Server then the Presence Network Agent sends *NotifyPresUp* message to the Presence Server via the ISC interface.~~

~~4.~~3. ~~If the Presence Network Agent is not collocated with the Presence Server then the p~~Prior to notifying all authorised watchers, the Presence Server~~it acknowledges the receipt of the *NotifyPresUp* message with a *MsgAck* to the S-CSCF.~~

3GPP TSG-SA2 Meeting #28
Bangkok, Thailand, 11-15.11.2002

S2-023379

CR-Form-v7

CHANGE REQUEST

⌘ **23.141** **CR** **25** ⌘**rev** ⌘ Current version: **6.0.0** ⌘

*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 ☒

Title:	⌘	Watcher flows
Source:	⌘	Nokia, Siemens, Ericsson
Work item code:	⌘	PRESNC
Date:	⌘	11/11/2002
Category:	⌘	**C**
Release:	⌘	Rel-6

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

Use one of the following releases:

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)*

Reason for change:	⌘	The possible change of the presentity's S-CSCF during an active SUBSCRIBE dialog implies that the S-CSCF should not be in the path of the NOTIFY and the subsequent SUBSCRIBE requests. This can be achieved by having the S-CSCF not insert itself into the record-route of the initial SUBSCRIBE transaction. Hiwever, current flows show the S-CSCF as always being in the path of the subsequent requests of SUBSCRIBE dialogs.
Summary of change:	⌘	Normative text added to clarify the S-CSCF's behaviour wrt Record-Routing SUBSCRIBE dialogs. The corresponding flows have also been corrected.
Consequences if not approved:	⌘	

Clauses affected:	⌘	5.3.4, A.2.2.1, A.2.4.1

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

Other comments:	⌘	

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

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

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

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

********** First set of changes **********

5.3.4 Relationship of Presence Proxies with IMS entities

The functionalities of the Watcher Presence Proxy are then taken care of by the P-CSCF and the S-CSCF:

- The S-CSCF is responsible for authentication according to procedures described in 3GPP TS 33.203 [5].

- The charging and accounting procedures are conducted as per procedures defined by 3GPP TS 32.200 [6], 3GPP TS 32.225 [7].

- The security mechanisms between the Watcher and the Presentity Presence proxy is defined by 3GPP TS 33.210 [8].

The functionality of the Presentity Presence Proxy is taken care of by the I-CSCF and the S-CSCF as defined in 3GPP TS 23.228 [9].

The procedures for locating, routing to and accessing the Presence Server of the presentity are defined in 3GPP TS 23.228 [9] and 3GPP 23.218 [10]. These procedures also take care of routing and accessing the Presence Server of a presentity that is associated with an unregistered UE.

The functionality of the Watcher Presence Proxy and the Presentity Presence Proxy are allocated to the functional element CSCF as defined in 3GPP TS 23.002 [18].

Figure 5.3.4-1 below presents the mapping of the Watcher and Presentity Presence Proxy functionalities to IMS network elements when located within the IMS along with the Watcher application. This mapping is based on and restricted to reusing the existing IMS architecture mechanisms and can be clearly seen in the detailed information flows show in annex A.

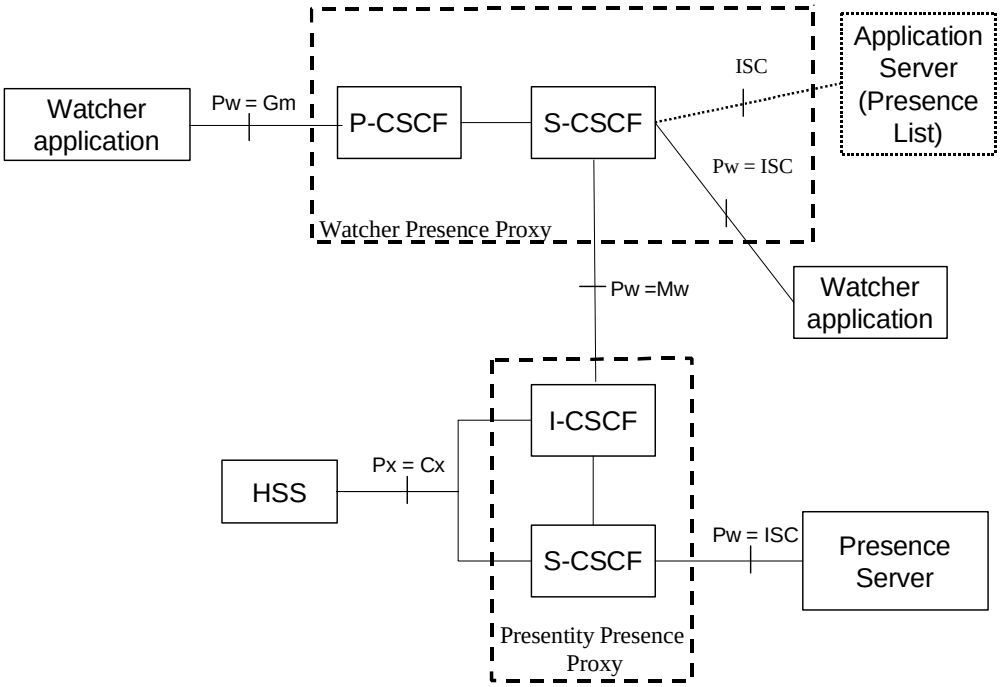

Figure 5.3.4-1: Both the Watcher application and the Presence Server located within IMS

NOTE 1: In order to apply optimizations for wireless environment, such as those proposed in IETF draft-ietf-simple-presencelist-package [12], the Watcher Presence Proxy functionality may interface to an Application Server that provides the functionality of the Presence List Server and optionally additional functions. Figure 5.3.4-1 presents such an Application Server as a dotted box.

NOTE 2: The standard IMS (SIP) routing mechanisms define whether a certain CSCF is indeed included in the path of a SUBSCRIBE or NOTIFY transaction.

As described in IETF draft-ietf-simple-presence [4], the Watcher Application sends a SIP SUBSCRIBE to Event: presence addressed to the presentity's SIP URL to subscribe or fetch presentity's presence information. This SUBSCRIBE transaction will be routed and handled by the IMS infrastructure according to standard IMS routing and ISC procedures defined in 3GPP TS 23.228 [9] and 3GPP TS 23.218 [10].

The Presentity's S-CSCF is not mandated to insert itself into the Record-Route header of the initial SUBSCRIBE request, in case the S-CSCF does not execute any functions for the subsequent requests and responses of the dialog.

The presence document will be provided from the Presence Server to the Watcher Application using SIP NOTIFY along the dialogue setup by SUBSCRIBE either within the NOTIFY payload, or via a URL provided in the NOTIFY. The means to fetch the content can be seen as part of the Pw interface.

********** Second set of changes **********

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

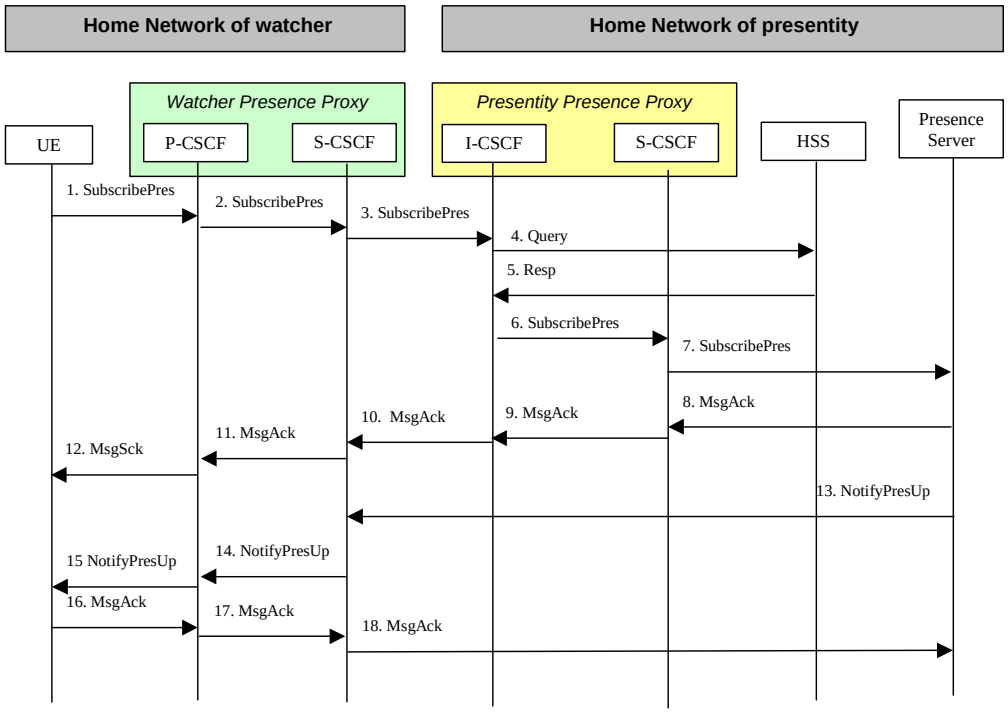

Figure A.2.2.1-1. IMS Watcher registering for event notification

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 optionaly 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).

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 presentitiy 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 ~~presentity~~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*~~*MsgAck*~~ to the ~~S~~P-CSCF.

15. The ~~S~~P-CSCF forwards the *NotifyPresUp* to the watcher application in the UE~~the P-CSCF of the watcher~~

16. The UE acknowledges the receipt of the *NotifyPresUp* message with a *MsgAck* sending this to the P-CSCF.

~~16. The P-CSCF forwards the *NotifyPresUp* to the watcher application in the UE.~~

~~17. The UE acknowledges the receipt of the *NotifyPresUp* message with a *MsgAck* sending this to the P-CSCF.~~

~~18.~~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.

~~19. The S-CSCF of the watcher forwards the *MsgAck* to the S-CSCF allocated to the presentity.~~

~~20. The S-CSCF allocated to the presentity forwards the *MsgAck* to the Presence Server.~~

********** **Third set of changes** **********

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

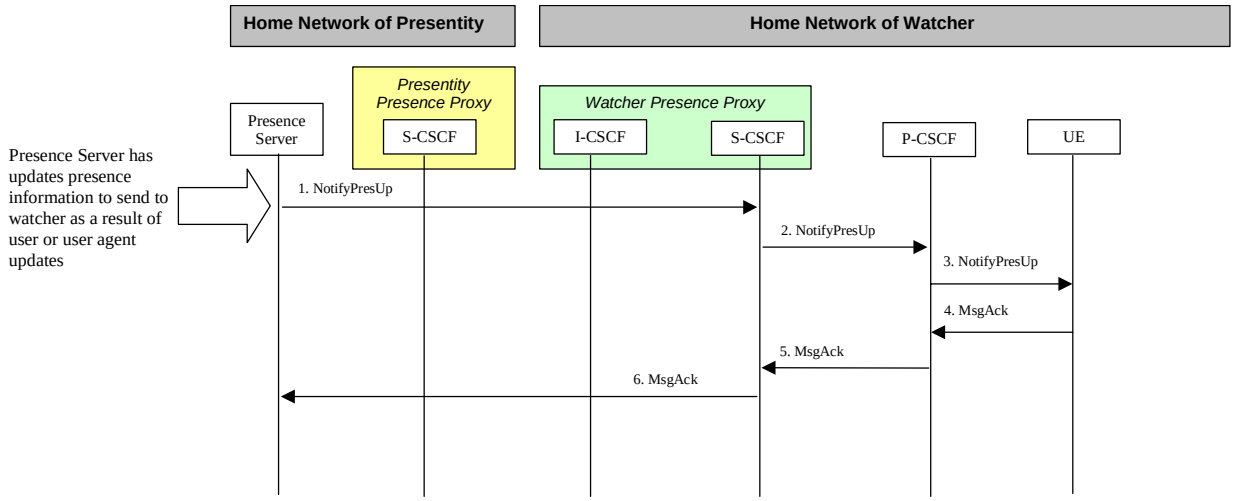

Figure A.2.4.1-1: Presence Server updating IMS watcher

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 optionaly 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 updates to the presence information. This *NotifyPresUp* is sent along the path of the SUBSCRIBE dialog to the S-CSCF~~, allocated to the presentity~~of the Watcher.

2. The S-CSCF forwards the *NotifyPresUp* message to the ~~S~~P-CSCF of the watcher.

3. The P-CSCF forwards the *NotifyPresUp* message to the UE.

~~3.The S-CSCF of the watcher forwards the *NotifyPresUp* message to the P-CSCF.~~

~~4.The P-CSCF forwards the *NotifyPresUp* message to the UE.~~

~~5.~~4. The UE acknowledges the *NotifyPresUp* message with a *MsgAck* to the P-CSCF.

~~6.~~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.

~~7.The S-CSCF of the watcher forwards the *MsgAck* message to the S-CSCF allocated for the presentity.~~

~~8.The S-CSCF allocated for the presentity forwards the *MsgAck* to the Presence Server.~~

3GPP TSG-SA2 #27
Beijing, China, 14-18/10/02

Tdoc S2-023087

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CHANGE REQUEST

⌘ **23.141** **CR** **18** ⌘ **rev** **1** ⌘ Current version: **6.0.0** ⌘

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

Title:	⌘	Activation of CAMEL mobility reports
Source:	⌘	Vodafone Ltd
Work item code:	⌘	PRESNC
Date:	⌘	17/10/2002
Category:	⌘	**F**
Release:	⌘	Rel-6

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

Use one of the following releases:

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)*

Reason for change:	⌘	The current text describes the Presence Network Agent receiving mobility management event reports from the MSC and SGSN, however, there does not seem to be any accurate description of how these reports are activated or deactivated from the Presence Network Agent. Similarly there is no description of how the S-CSCF filters are activated/deactivated.
Summary of change:	⌘	The behaviour of the Presence Network Agent towards the Ph reference point is clarified in sections 4.3.5 and 5.2.2.1. The type of mobility events that the SGSN can report is clarified (in 4.3.9) in order to avoid the perpetuation of common misunderstandings. The restriction to MSCs and SGSNs in the HPLMN in 5.2.2.1 is removed.
Consequences if not approved:	⌘	Operators and manufacturers will disagree on what the functionality of the Presence Network Agent is.

Clauses affected:	⌘	4.3.5, 4.3.9, 5.2.2.1

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

Other comments:	⌘	A typo in section 4.1 is corrected.

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.

4 Presence Architecture

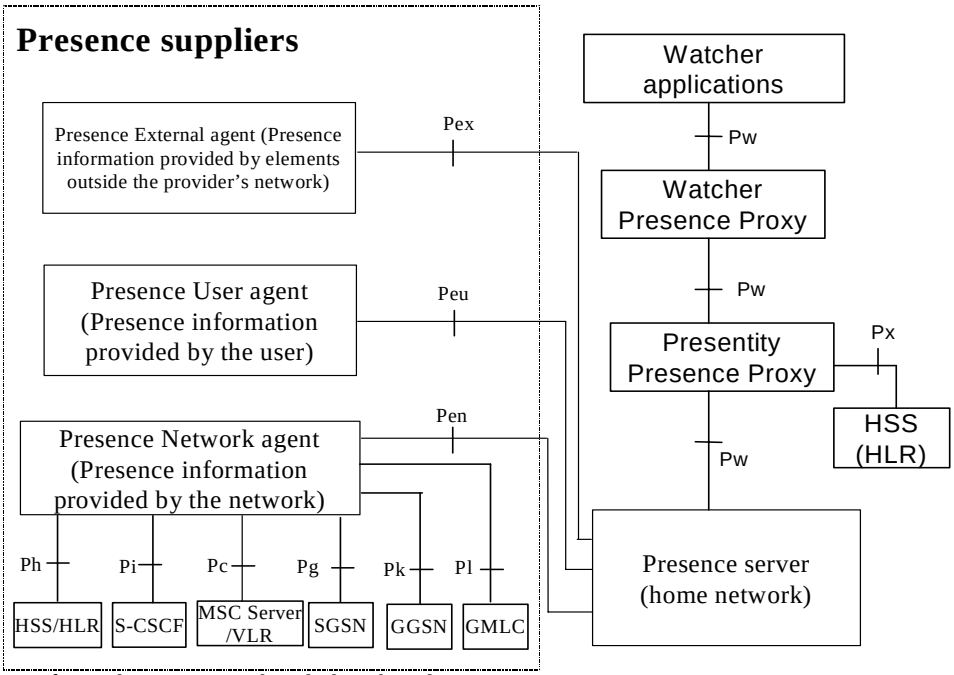
4.1 Overview

The Presence Service provides the ability for the home network to manage presence information of a user's device, service or service media even whilst roaming. A user's presence information may be obtained through input fromform the user, information supplied by network entities or information supplied by elements external to the home network. Consumers of presence information, watchers, may be internal or external to the home network.

4.2 Reference Architecture Model

The generic reference architecture for providing presence service is depicted in Figure 4.2-1 below. The details of the elements in the figure (eg agents, proxies) are provided in clause 5.

The mapping of the Presence Service functional elements and reference points to the functional elements and reference points in the 3GPP Network Architecture 3GPP TS 23.002 [18] is defined in clauses 4.3 and clause 5.



Interfaces Ph, Pi, Pc, Pg, Pk and Pl are based on existing R5 procedures e.g. CAMEL, MAP, CAP, RADIUS, ISC, Cx, Sh.

Figure 4.2-1: Reference architecture to support a presence service

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 supply 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.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 access rules.

Pen shall provide mechanisms for the Network Agent to supply only a certain subset of the presentity's presence information to the Presence Server.

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

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 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.

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 and to explicitly request 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.

4.3.5 Reference point HSS/HLR – Presence Network Agent (Ph)

This reference point shall allow the Presence Network Agent to query HSS/HLR about the state and status of a subscriber (associated with a presentity) from the CS Domain, GPRS and IMS perspective.

~~This reference point may also allow the enabling of receiving updates of presence information.~~ This reference point permits the Presence Network Agent to activate and deactivate the reporting of mobility management events from the MSC/VLR and/or the SGSN and/or the IMS-specific reports from the S-CSCF.

This reference point uses capabilities defined for the Sh reference point as defined in 3GPP TS 23.002 [14] as well as the MAP interface.

4.3.6 Reference point S-CSCF – Presence Network Agent (Pi)

The S-CSCF may provide IMS-specific presence information (e.g. about ongoing IMS sessions). This reference point shall use mechanisms defined for the ISC reference point as defined in 3GPP TS 23.002 [18].

4.3.7 Reference point Presentity Presence Proxy – HSS (Px)

This interface shall assist locating the Presence Server of the presentity. This interface is implemented using the mechanisms defined for the Cx and Dx reference points as defined in TS 23.002 [18].

4.3.8 Reference point Presence Network Agent – GMLC (Pl)

This reference point shall be used by the Presence Network Agent to retrieve location information related to a subscriber (associated with the presentity). This reference point is implemented using the mechanisms as defined in 3GPP TS 23.271 [14] for the Le reference point as defined in TS 23.002 [18].

4.3.9 Reference point Presence Network Agent – SGSN (Pg)

This reference point shall allow the SGSN to report mobility management related events to the Presence Network Agent (such as PDP context active/attach/not reachable for paging/detach/routing area update). This reference point is implemented using the MAP interface.

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). This reference point is implemented using the MAP interface.

4.3.11 Reference point Presence Network Agent – GGSN (Pk)

This reference point shall allow the GGSN to report presence relevant events to the Presence Network Agent (such as PDP context activation/de-activation). This reference point is implemented using the mechanisms of the RADIUS interface for reporting of access requests on Gi reference point as defined in 3GPP TS 29.061 [13].

4.4 Support of OSA Presence Service Capability Server in the Presence Architecture

An OSA API may be provided to allow external application to access presence service features, details of which are found in 3GPP TS 23.127 [15].

The OSA Presence SCS may act like a presentity or a watcher. The application may then register as a presentity and/or watcher, to supply presence information, to request presence information, to be notified of subsequent changes, to request watcher information, and to manage access rules

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 HPLMN and VPLMN~~Operator's network~~.
- The Presence Network Agent shall be able to send requests to the HSS/HLR to cause other network elements to send (or stop sending) Presence Information to the Presence Network Agent.
- The Presence Network Agent shall associate Presence information with the appropriate Subscriber/Presentity 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

3GPP TSG-SA2 Meeting #27
Beijing, China, 14th-18th October

Tdoc ⌘S2-023084

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CHANGE REQUEST

⌘ **23.141** **CR** **16** ⌘**rev** **1** ⌘ Current version: **6.0.0** ⌘

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

Title:	⌘	Clarification of which reference point is used when PUA subscribes to watchers
Source:	⌘	Ericsson
Work item code:	⌘	PRESNC
Date:	⌘	18/10/2002
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
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Use one 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)*

Reason for change:	⌘	The appendix A.2.5 includes the possibility for the PUA to subscribe to a watcher list and receive notifications of new watcher subscriptions that are not contained in the current access rules. This functionality has not yet been added to any reference point.
Summary of change:	⌘	It is clarified that Peu is used when the PUA retrieves notifications of new watcher subscriptions that are not contained in the current access rules.
Consequences if not approved:	⌘	It will be unclear which reference point includes the functionality, for the PUA, to retrieve new watcher subscriptions.

Clauses affected:	⌘	4.3.1

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

Other comments:	⌘	

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

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

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

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

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

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 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.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)

3GPP TSG-SA2 Meeting #27
Beijing, China, 14th ~ 18th Oct 2002

Tdoc ⌘S2-023082rev4
rev of S2-022776

CR-Form-v7

CHANGE REQUEST

⌘ **23.141** **CR** **10** ⌘**rev** **5** ⌘ Current version: **6.0.0** ⌘

*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 ☒

Title:	⌘	**Relationship of Presence Network Agent with IMS entities**
Source:	⌘	Vodafone
Work item code:	⌘	PRESNC
Date:	⌘	24/10/2002
Category:	⌘	**C**
Release:	⌘	Rel-6

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

Use one of the following releases:

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)*

Reason for change:	⌘	For a pure IMS implementation, no functionality is needed in Network Agent to supply presence information for IMS Domain
Summary of change:	⌘	In section 5.2.2.3 Relationship of Presence Network Agent with IMS entities, an additional statement is added as follow: Since the Network Agent is introduced as a functional entity, which models the abstraction from the different presence sources, the network agent and the presence server may be collocated. In case of an IMS-only network environment the Pen reference point is assumed to be realized by an internal interface.
Consequences if not approved:	⌘	

Clauses affected:	⌘	5.2.2.3

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

Other comments:	⌘	

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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.

5.2.2 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/Presentity 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.

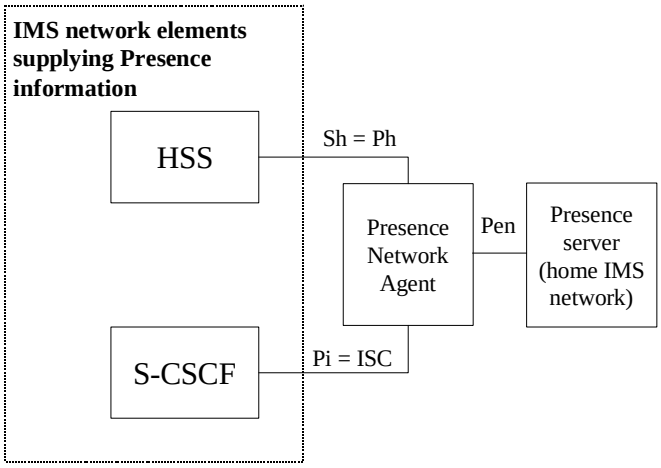

Figure 5.2.2.3-1: IMS network elements supplying presence information

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 3rd 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.

Since the Network Agent is introduced as a functional entity, which models the abstraction from the different presence sources, the network agent and the presence server may be collocated. In case of an IMS-only network environment the Pen reference point is assumed to be realized by an internal interface.

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

3GPP TSG-SA2 Meeting #27
Beijing, China, 14th-18th

Tdoc ⌘S2-022998

CR-Form-v7

CHANGE REQUEST

⌘ **23.141** **CR** **21** ⌘**rev** **-** ⌘ Current version: **6.0.0** ⌘

*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 ☒

Title:	⌘	Email review corrections to be updated to 23.141
Source:	⌘	Rapporteur
Work item code:	⌘	PRESNC
Date:	⌘	14/10/2002
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
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Use one of the following releases:

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R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The wrong version of the 23.141 was sent to SA #17for approval. In the SA2 #26 email review 3 corrections to implementation of agreed contributions were made, but the updated version of the 23.141 was not sent to SA #17.
Summary of change:	⌘	Editorial modifications and clarifications
Consequences if not approved:	⌘	The 23.141 is not according to decisions made in SA2 #26.

Clauses affected:	⌘	4.2, 4.3.1, 5.1			
Other specs affected:	⌘	**Y**	**N**		
		☐	☐	Other core specifications	⌘
		☐	☐	Test specifications	
		☐	☐	O&M Specifications	
Other comments:	⌘				

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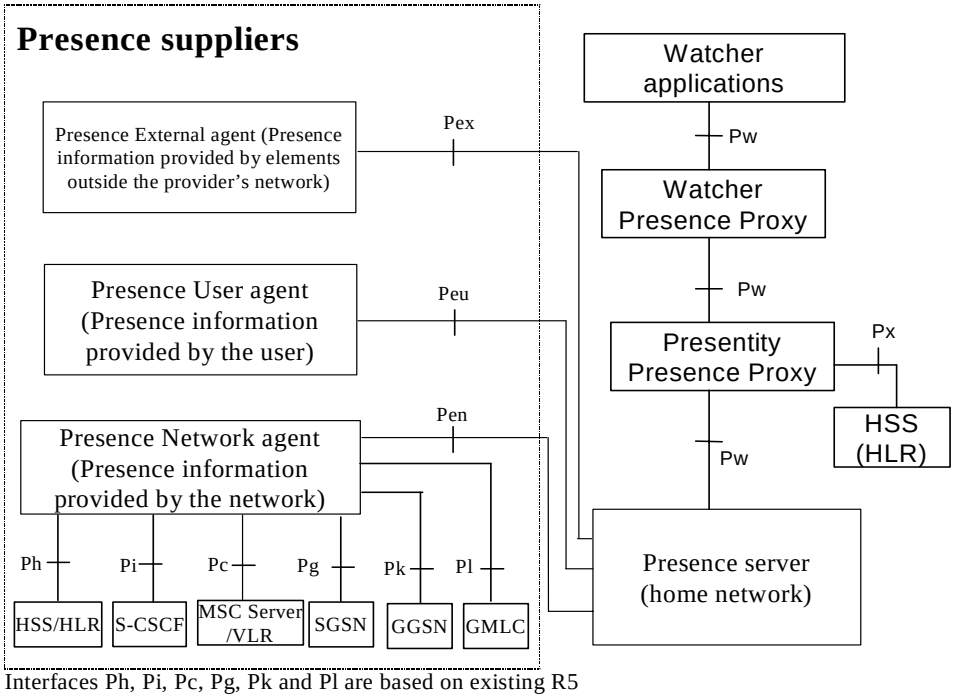
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

4.2 Reference Architecture Model

The generic reference architectural model~~e~~ for providing presence service is depicted in Figure 4.2-1 below. The details of the elements in the figure (eg agents, proxies) are provided in clause 5.

The mapping of the Presence Service functional elements and reference points to the functional elements and reference points in the 3GPP Network Architecture 3GPP TS 23.002 [18] is defined in clauses 4.3 and clause 5.



Interfaces Ph, Pi, Pc, Pg, Pk and Pl are based on existing R5 procedures e.g. CAMEL, MAP, CAP, RADIUS, ISC, Cx, Sh.

Figure 4.2-1: Reference architecture to support a presence service

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 supply 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~~ 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.

******** Next change ********

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~~bining~~ 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.

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.