OMA Presence SIMPLE 2.0 Requirements

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This document contains use-cases and requirements for the Presence SIMPLE 2.0 service, taking into considerations the demands of end-users, service providers, and system implementers.

2. References

2.1 Normative References

[3GPP PS STAGE2] "Presence Service; Architecture and functional description (Release 6)", 3GPP TS23.141, 2005 http://www.3gpp.org/ftp/Specs/archive/23_series/23.141/

[3GPP PS] "Presence Service; (Release 6)", ch. 5-9. 3GPP TS 22.141, 2005. www.3gpp.org - /ftp/Specs/archive/22_series/22.141/

[3GPP2 PS] "Presence for Wireless Systems; Stage 1 Requirements". 3GPP2 S.R0062 Version 1.0, October 2002. http://www.3gpp2.org/Public_html/specs/S.R0062-0_v1.0.pdf

[Privacy] "OMA Privacy Requirements for Mobile Services", Open Mobile Alliance™, OMA-RD_Privacy-V1_0_0, Version 1.0.0 http://www.openmobilealliance.org

[PRS1 RD 1.0] "Presence SIMPLE Requirements", Open Mobile Alliance™, OMA-RD-Presence_SIMPLE-V1_0, Version 1.0, http://www.openmobilealliance.org/

[RFC2119] "Key words for use in RFCs to Indicate Requirement Levels". S. Bradner. March 1997. http://www.ietf.org/rfc/rfc2119.txt

[RFC2778] "A Model for Presence and Instant Messaging", RFC2778, M. Day et al., February 2000, http://www.ietf.org/rfc/rfc2778.txt

[RFC3261] "SIP: Session Initiation Protocol", Rosenberg et al, June 2002, http://www.ietf.org/rfc/rfc3261.txt

[XDMREQ] "XML Document Management Requirements", Open Mobile Alliance™, OMA-RD-XDM-V1_0, Version 1.0, http://www.openmobilealliance.org/

2.2 Informative References

[3GPP GM] "IP Multimedia Subsystem (IMS) group management, (Release 6)", ch. 5-7. 3GPP TS 22.250, 2002. www.3gpp.org - /ftp/Specs/archive/22_series/22.250/

3. Terminology and Conventions

3.1 Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except “Scope” and “Introduction”, are normative, unless they are explicitly indicated to be informative.

3.2 Definitions

Application-specific	A qualifier that designates a presence element that is either specific to a Communication Means (such as PoC or IM), or pertains to an application (such as a networked game application).
Application-specific Availability	Available indicates that it is possible to initiate a communication of this type; “Not Available” indicates that it is not possible to initiate a communication of this type. For example, if a user is provisioned with the PoC Service, within coverage, has an appropriate handset, etc., he/she is available for PoC, whereas if any of those were not true, he/she is ”Not Available”. Note: this is mostly unrelated to whether the user is willing or not to accept this particular type of communications. “The Application-specific Availability” can also be supplied by various network elements.
Application-specific Willingness	Indicates whether the user is willing to accept communications of this type. If the Application-specific Availability is set to “Not Available” this presence element has no relevance. If this presence element is not present in a presence document, it may be deduced from the “Default Willingness” presence element (see Default Willingness definition). This value of this presence element may be overridden by the “Overriding Subscriber Willingness” presence element (see Overriding Subscriber Willingness definition).
Authorization Categories	An Authorization Category consists of a list of Watchers that identifies a trust relation like Family, Friends or Colleagues.
Default Willingness	Indicates the end-users Default Willingness to communicate in the absence of an Application specific Willingness presence element. For example, if a user is “Available” on a particular application, but has not published their willingness for that application, the default value would be used. This presence element, where applicable, may still be overridden by the “Overriding Subscriber Willingness” presence element (see Overriding Subscriber Willingness definition).
One-time Event Subscription and Notification	One-time Event Subscription and Notification is the feature that enables Subscribers to place a Subscription that will generate a single Notification and then terminate itself.
Overriding Subscriber Willingness	The Overriding Subscriber Willingness provides an indication, set by an end user, that takes precedence over both the Application-specific Willingness and the Default willingness settings. For example, when a Overriding Subscriber Willingness indication is present, a positive setting indicates that the user is willing to accept communications for all available communications types, while a negative setting indicates that the user is not willing to accept any communications.
Presence Enabled Phonebook	A convenient way of referring to a client displaying Presence Information about one or more Presentities. This is a generic name, not mandating nor implying any particular implementation or set of features.
Presence Information	Dynamic set of information pertaining to a Presentity that may include presence elements such as the status, reachability, willingness, and capabilities of that Presentity. Note: This definition is compatible with the 3GPP/3GPP2 definitions, as well as the IETF definition, though the latter is quite generic.
Presence Information Element	A basic unit of unit of Presence Information.
Presence Policy	A customizable set of policies (such as Subscription authorization, presence content, and Notification policies) and/or Presence Information that the Presence Server applies for the Presentity.
Presence Server	A logical entity that receives Presence Information from a multitude of Presence Sources pertaining to the Presentities it serves and makes this information available to Watchers according to the rules associated

	with those Presentities. Note: In IETF SIMPLE Presence a Presence Server is referred to as a Presence Agent.
Presence Source	A logical entity that provides Presence Information pertaining to exactly one or more Presentities to the Presence Server. 3GPP/3GPP2 Presence User Agents, Presence Network Agents, and Presence External Agents are examples of Presence Sources. Note: In IETF SIMPLE Presence, Presence Sources are referred to as Presence User Agents. In [RFC2778], they are referred to as Presentities.
Presentity	A logical entity that has Presence Information (see definition above) associated with it. This Presence Information may be composed from a multitude of Presence Sources. A Presentity is most commonly a reference for a person, although it may represent a role such as "help desk" or a resource such as "conference room #27". Presentities are generally referenced by distinguished names, such as "dean.willis@softarmor.com" or by phone numbers like "+19724735455". In SIMPLE, Presentities are generally referenced using a sip:, pres: or tel: URIs. Note: This definition maps better to the [RFC2778] definition of a Principal, rather than that of [RFC2778] Presentity. This definition is compatible with the 3GPP/3GPP2 definitions of Presentity, as well as that of IETF SIMPLE Presence.

The following definitions are referenced from [RFC2778].

Communication Address	Consists of Communication Means and Contact Address.
Communication Means	Indicates a method whereby communication can take place. Instant message service is one example of a Communication Means.
Contact Address	A specific point of contact via some Communication Means. When using an instant message service, the Contact Address is an instant inbox address.
Notification	A message sent from the Presence Service to a Subscriber when there is a change in the Presence Information of some Presentity of interest, as recorded in one or more Subscriptions.
Subscriber	A form of Watcher that has asked the Presence Service to notify it immediately of changes in the Presence Information of one or more Presentities.
Subscription	The information kept by the Presence Service about a Subscriber's request to be notified of changes in the Presence Information of one or more Presentities.

The following definitions are referenced from [3GPP PS].

Fetcher	A form of Watcher that has asked the Presence Service for the Presence Information of one or more Presentities, but is not requesting a Notification from the Presence Service of (future) changes in a Presentity's Presence Information. (Differs slightly from [RFC2778] definition). (Identical to [3GPP2 PS]).
Poller	A Fetcher that requests Presence Information on a regular basis. (Identical to [RFC2778] and [3GPP2 PS] definitions).
Presence Service	The capability to support management of Presence Information between Watchers and Presentities, in order to enable applications and services to make use of Presence Information. (Differs from [RFC2778] definition, identical to [3GPP2 PS].)
Subscribed-watcher	A type of Watcher, which requests Notification from the Presence Service of changes in a Presentity's Presence Information, resulting in a watcher-subscription, as they occur in the future.
Watcher	Any uniquely identifiable entity that requests Presence Information about a Presentity from the Presence Service. Special types of Watcher are Fetcher, Poller, and Subscribed-watcher. (Differs slightly from [RFC2778] and [3GPP2 PS] definitions).
Watcher Information	Information about Watchers that have received or may receive Presence Information about a particular Presentity within a particular recent span of time. (Differs slightly from [RFC2778], is identical to [3GPP2 PS] definition).
Watcher Information	Any uniquely identifiable entity that requests Watcher Information about a Watcher from the Presence

Subscriber	Service.
Watcher-subscription	The information kept by the Presence Service about a Subscribed-watcher's request to be notified of changes in the Presence Information of one or more Presentities. Note: This definition represents an entity's request to obtain Presence Information, and is not related to the term "subscription" in [3GPP GM]. Within this specification the term watcher-subscription (and its derivatives) purely refers to this relationship.

The following definitions are referenced from [3GPP PS STAGE2].

Presence Network Agent	A network located element that collects and sends network related Presence Information on behalf of the Presentity to a Presence Server. This is a type of *Presence Source*.
Presence User Agent	A terminal or network located element that collects and sends user related Presence Information to a Presence Server on behalf of a Presentity. This is a type of *Presence Source*. (Differs from [RFC2778] definition).

The following definitions are referenced from [3GPP2 PS].

Interoperable Services	Two implementations are interoperable if they can interact without protocol interworking devices.
Provisioning	An action taken by the service provider to make the Presence Service available to a Subscriber. Provisioning may be general, where the service may be made available to all Subscribers without prior arrangements being made with the service provider, or it may be pre-arranged, where the service is made available to an individual Subscriber only after the necessary arrangements (e.g., login name, password) have been made with the service provider.

3.3 Abbreviations

3GPP	3rd Generation Partnership Project
3GPP2	3rd Generation Partnership Project 2
CIPID	Contact Information in Presence Information Data Format
DND	Do Not Disturb
GGSN	Gateway GPRS Support Node
GMT	Greenwich Mean Time
GPRS	General Packet Radio Service
IETF	Internet Engineering Task Force
IM	Instant Messaging
IMEI	International Mobile Equipment Identifier
IMPS	Instant Messaging and Presence Service (aka Wireless Village)
IMS	IP Multimedia Subsystem
IP	Internet Protocol
ISDN	Integrated Services Digital Network
MEID	Mobile Equipment Identifier
MMS	Multimedia Messaging Service
MSISDN	Mobile Station International ISDN Number
OMA	Open Mobile Alliance
PEP	Presence Enabled Phonebook

PoC	Push to talk Over Cellular
RFC	Request For Comments
RPID	Rich Presence Information Data
SGSN	Serving GPRS Support Node
SIMPLE	SIP for Instant Messaging and Presence Leveraging Extensions
SIP	Session Initiation Protocol
SMS	Short Messaging Service
UMTS	Universal Mobile Telecommunications System
URI	Uniform Resource Identifier
VIP	Very Important Person
VMS	Voicemail Service
VoIP	Voice over IP
WV	Wireless Village (aka IMPS)
XCAP	XML Configuration Access Protocol
XML	Extensible Markup Language

4. Introduction (Informative)

4.1 OMA Presence Mandate

SIP/SIMPLE by IETF is accompanied with a set of RFCs (such as RPID, Rich Presence Information Data Format; CIPID, Contact Information in Presence Information Data Format; and XCAP, XML Configuration Access Protocol). 3GPP and 3GPP2 specify the practical implementations of IETF specifications in IMS (IP Multimedia Subsystem) and MMD (MultiMedia Domain) respectively. Both transport of IP traffic and use of SIP as signalling protocol are commonly known as SIP/IP Core. On top of all this, OMA SIMPLE Presence Service specifications, developed in REQ and PAG WGs, define a SIP/SIMPLE-based Presence Service.

OMA's role is to create application level specifications for Presence Service. This includes Presence Information semantics and guidelines for presence applications, please see Figure 1. These specifications shall be agnostic to the underlying network technology, be it specified by 3GPP, 3GPP2, or by somebody else.

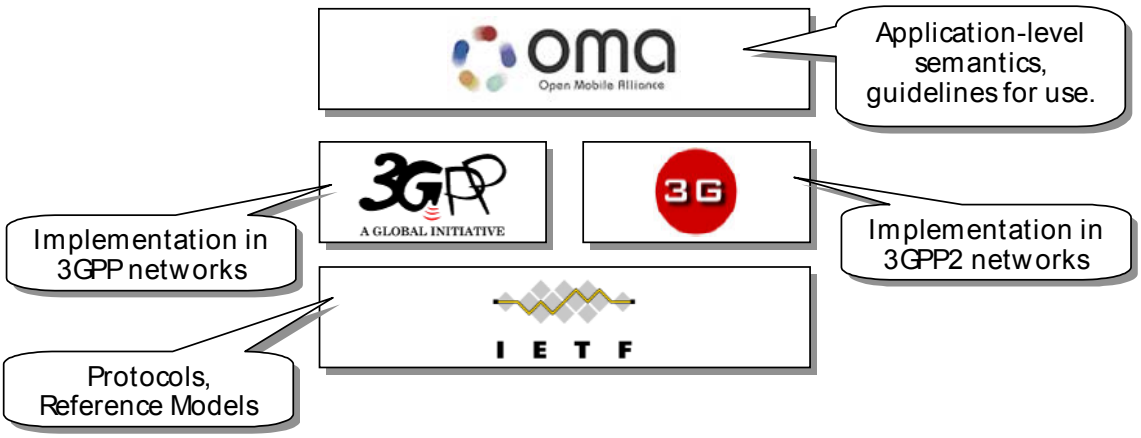

Figure 1. Presence specification layers

4.2 Service Overview

A Presence Service is a software system whose role is to collect and disseminate Presence Information, subject to a wide variety of controls. The requirements established into this document fall into two categories:

- Requirements pertaining to the mechanisms utilized in collecting and disseminating Presence Information, including the means to do so in a controlled way (e.g. publish, subscribe, notify, etc.)
- Requirements pertaining specific types of Presence Information content (e.g. willingness to communicate, device/application status, etc.)

Note that the Presence Service features are not limited to any particular type of Presence Information. However, in the context of this specification we will only be standardizing a limited set of presence elements.

4.3 Presence Information, Sources and Watchers

Wireless Village specifications define a set of attributes that convey various properties of a human user, such as UserAvailability and StatusText. An extension mechanism is also specified. SIP/SIMPLE was originally designed from communication channel point of view, e.g., to express whether a certain communication channel (voice, SMS, etc) is available, and what the priority of that channel is. SIP/SIMPLE has been extended towards more Wireless Village –like personal attributes (e.g. RPID).

Developing the Presence Service concept requires thinking about presence-related issues in broader terms still because both WV and SIP/SIMPLE do only part of the job. We need to be able to convey information about the person using Presence Service, the communication mean(s) the person is using, the device(s) being used to deliver the service(s), and the network(s) to which the device(s) is connected. Further, there may be Presentities and Watchers that do not correspond to any human being at all, but to a service. Finally, also network elements may produce and consume Presence Information.

Figure 2 illustrates the Presence Information sources and Watchers that need to be taken into account in OMA specifications:

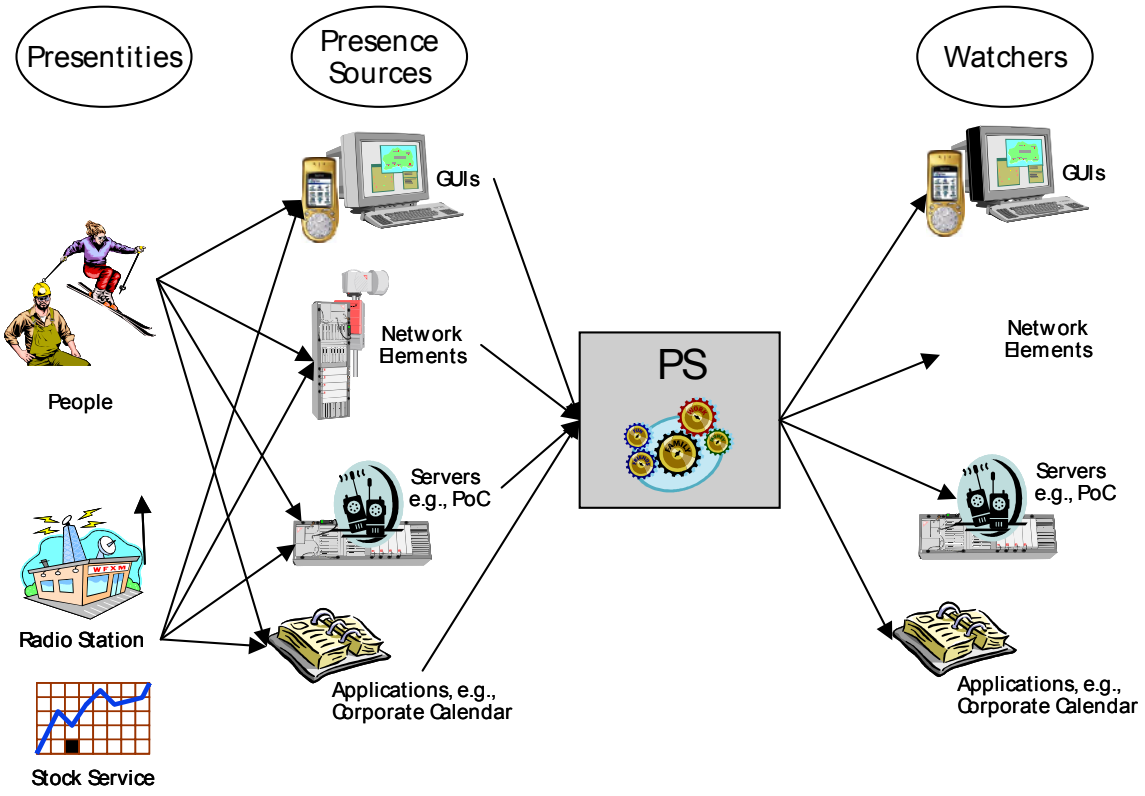

Figure 2. Presence Service components.

1. *People*, human presence users, publish their personal Presence Information. To do this, a user may use an application in her mobile phone or a desktop application. Please note that the Presentity's state may also include communication channels' states, such as VoiP, video, or PoC.

2. *Non-human Presentities* may also publish Presence Information, for example, a radio station may want to publish the song currently playing, and a call center might publish information about congestion situation such as waiting line size and expected waiting time.

3. *Network elements*, for example, may produce Presence Information pertaining to a person, for example, whether a person is registered to the network or not. Networks elements may also consume Presence Information.

4. Yet another group of Presence Information sources and Watchers are *application servers* and *applications* in the network. For instance, a corporate calendar application could update an employee's availability information based on behaviour.

4.4 Presence Information Processing

Figure 2 is simplified in the sense that Presence Server is more than a mere relay station for the Presence Information. There are several stages of processing that need to take place before the Presence Information can be disseminated further, please see Figure 3.

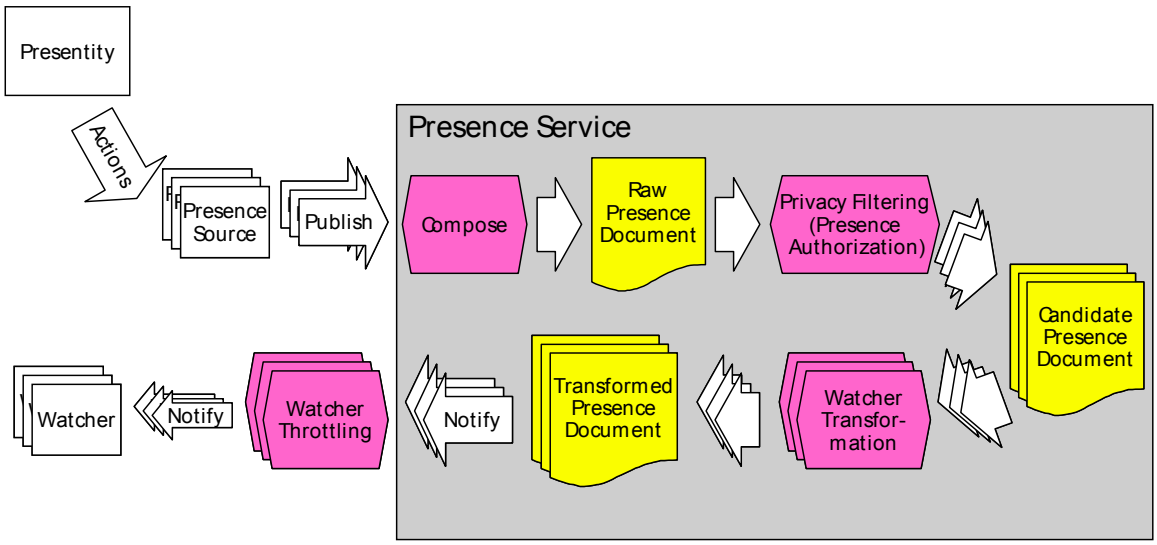

Figure 3. Processing of Presence Information

The Compose function takes the Presence Information originating from several Presence Sources but pertaining to one Presentity and, according to composition rules, creates a raw presence document. After that, authorization is performed for all Watchers subscribed to the Presentity's Presence Information, and the presence document is changed accordingly. This is necessary because not all Watchers are intended to see the same presence elements; please note that this stage creates several parallel documents. Each of these documents is subjected to per-watcher or per-watcher-group transformation, which includes, e.g., filtering and partial Notification.

The resulting Notifications are passed outside Presence Service; after this, the number of Notifications may be cut down by throttling, if such a feature is supported.

4.5 Communicating preferences to end-users using Presence Information

One of the purposes of publishing Presence Information about an end user to authorized Watchers is to set appropriate expectations among communications partners, thereby increasing the chance of successful communications using the most suitable or preferred communications means.

To set the correct expectations to potential communicating partners, a user's Presentity may provide different Presence Information to different Watchers, for instance "willing/available" to some and "unwilling/not available" to others.

In addition, a Watcher may receive a status of "unwilling/unavailable" that applies to one or more, or all Communication Means. As such, Presentities can communicate which types of incoming sessions they want to accept.

Furthermore, note that the Presence Service provides certain mechanisms to Presence Sources. For example, presence state may be associated with a certain validity duration, in order to communicate its "freshness". Alternatively specific presence elements may have particular semantics, such as "current/verified" or "last known" in order to clearly communicate their relevance.

Thus, Watchers should ensure they understand and use those mechanisms in order to interpret the Presence Information in an consistent and accurate manner. Additionally, when a user agent renders Presence Information to be viewed by an end-user, it

should do so in a way that accurately portrays the received Presence Information. For example, if a certain element of Presence Information expires, then the user agent should present this appropriately to the user.

One of the roles for the requirements in this document is to facilitate the definition of Presence Information and the publication and Notification of that information in order to convey it to potential partners in communications, such that both parties can consistently interpret this this information and have the correct expectations for any subsequent communications.

5. Use Cases (Informative)

The following use cases are provided to further illustrate the functions and roles of the various system elements in the Presence framework and the inter-related functions performed by the Presence Server

5.1 Provisioning

5.1.1 Setting Up My Presence Service

"Setting Up My Presence Service" see [PRS1 RD 1.0] section 5.1.1.

5.2 Basic Presence Usage

5.2.1 Sharing Presence Information A

"Sharing Presence Information A" see [PRS1 RD 1.0] section 5.2.1.

5.2.2 Sharing Presence Information B

"Sharing Presence Information B" see [PRS1 RD 1.0] section 5.2.2.

5.2.3 Finding Other Presence Users

"Finding Other Presence Users" see [PRS1 RD 1.0] section 5.2.3.

5.2.4 Updating Presence Information

"Updating Presence Information" see [PRS1 RD 1.0] section 5.2.4.

5.2.5 Presence-enabled Address-book

"Presence-enabled Address-book" see [PRS1 RD 1.0] section 5.2.5.

5.2.6 Validity Period

"Validity Period" see [PRS1 RD 1.0] section 5.2.6.

5.2.7 One-time Event Subscription and Notification

"One-time Event Subscription and Notification" see [PRS1 RD 1.0] section 5.2.7.

5.2.8 Regulating Publications of Presence Information

5.2.8.1 Short Description

This use cases presents a mechanism for a user to specify another user how often and which part of his Presence Information should he publish.

5.2.8.2 Actors

- Driver Peter – A Presence Service end user who can be located by Boss in a time limited period (e.g. during work time)

- Driver Paul - A Presence Service end user who can be located by Boss in a time limited period (e.g. during work time)
- Boss – The Presence Service end user who can get Driver Peter's and Driver Paul's location information periodically in a time limited period (e.g. during work time)
- Presence Server – This is the server that is providing the Presence Service to Driver Peter, Driver Paul and Boss
- Location Server – This is the server that is providing the location service to Driver Peter and Driver Paul
- Specific Location Presence Network Agent – Updates Presence Server with Driver Peter's and Driver Paul's current location information coming from the location server

5.2.8.3 Actor Specific Issues

Boss is able to get Driver Peter's and Driver Paul's current location information periodically in a time limited period (e.g. during work time).

5.2.8.4 Actor Specific Benefits

Boss will be able to get Driver Peter's and Driver Paul's location information periodically. This location information will be current, complete, and trustful due to the location server features. Driver Peter's and Driver Paul's location information will be private out of this period. Moreover, this kind of regulation will also bring less bandwidth and battery consumption due to monitoring resources and publications will only be done when specified.

5.2.8.5 Preconditions

Boss, Driver Peter and Driver Paul have a Subscription to a Presence Service. Driver Peter and Driver Paul have already setup their privacy settings to allow Boss to see their location information in a limited period.

5.2.8.6 Postconditions

Boss will get Driver Peter's and Driver Paul's current location information periodically during working time with the completeness of the location server. Driver Peter and Driver Paul will assure their privacy outside the temporary condition.

5.2.8.7 Normal Flow

1) Boss selects Driver Peter and Driver Paul from his presence client and submits a request for periodical Notification (e.g. every 15 minutes during work time period) of Driver Peter's and Driver Paul's current location information.
2) Presence Server checks if Boss is authorized to locate Driver Peter and Driver Paul.
3) Presence Server sends a "regulation publication" to the specific location Presence Network Agent with the appropriate parameters specified by Boss (i.e. location information every 15 minutes during work time period).
4) Specific Location Presence Network Agent publishes Driver Peter's and Driver Paul's current location information (coming from the location server) every 15 minutes during work time period.
5) The Presence Server will send back to Boss Driver Peter's and Driver Paul's current location information.
6) Boss gets Driver Peter's and Driver Paul's Presence Information including precise and complete Driver Peter's and Driver Paul's current location information.

5.2.8.8 Alternative Flow

1) Out of working time, Boss selects Driver Peter and Driver Paul from his presence client and submits a request for periodical Notification of Driver Peter's and Driver Paul's current location information.
2) Presence Server checks if Boss is authorized to locate Driver Peter and Driver Paul.
3) Presence Server sends back to Boss a refusal to his periodical Subscription.

5.2.8.9 Operation and Quality of Experience Requirements

Typical Presence Service usage where Notifications are send when changes in the Presence Information occur is not always useful for some kind of Presence Information. Certain presence information such as a user's location are continuously changing and a different mechanism, based on periodical Notifications is needed.

5.2.9 Notification filtering

5.2.9.1 Short Description

This use case shows how the Watcher can provide a filter based on his/her presence attributes. The Watcher is able to indicate when Notifications from the Presentity are blocked based on his/her Presence Information. This use case demonstrates how the Watcher can provide a filter avoiding unnecessary Notifications when the Watcher is busy or not willing to communicate. This helps reducing the Notification traffic.

5.2.9.2 Actors

- Alice – Provides Subscription Information according to her preferences, Watcher
- Bob – Configures the Presence Service according to his preferences, Presentity
- Presence Client (PC) – Resides in the mobile device of Alice and Bob
- Presence Server – Resides in the network

5.2.9.3 Actor Specific Issues

Alice wants to supply a filter for blocking the Notifications coming from Presentity Bob.

- She does not want to receive Presence Information Notifications from Bob when her presence status is BUSY
- She does not want to receive Presence Information Notifications from Bob based on her certain presence attributes.

Presence Server does not notify unnecessary Presence Information to the Watcher when the Watcher is not able or not willing to receive it.

5.2.9.4 Actor Specific Benefits

Alice:

- is able to block unwanted presence Notification from the Presentity based on her presence.

Presence Server:

- is able to block unwanted Notifications. As a result, Notification traffic reduces.

5.2.9.5 Preconditions

- Alice and Bob are all provisioned to use the Presence Service
- Alice is subscribed to Bob's John's presence attributes

5.2.9.6 Postconditions

- Alice is able to provide a filter based on her presence attributes to block unwanted Notifications

- Presence server is able to block unwanted Notifications, so this reduces Notification traffic

5.2.9.7 Normal Flow

1) Alice subscribes for Bob's Presence Information, Alice also provides a Notification filter based on her Presence Information to block Notifications from Bob when she is BUSY.
2) The Presence Server maintains presence Subscriptions and Notification filters set by Alice
3) Bob changes his status and publishes a presence attribute.
4) The Presence Server checks the Notification filter and finds that Alice presence status is AVAILABLE, so it sends a Notification to Alice about Bob's presence status change.
5) Alice now becomes busy, so she modifies her presence status to BUSY
6) Bob changes his presence status and he publishes his Presence Information to the Presence Server.
7) The Presence Server checks the Notification filter and finds that Alice presence status is BUSY, so the Presence Server blocks the Notifications about Bob's presence status change.
8) Alice becomes available, so she changes her presence status back to AVAILABLE.
9) The Presence Server notifies Alice about the presence status changes from Bob.

5.2.9.8 Alternate Flow

None

5.2.9.9 Operational and Quality of Experience Requirements

None

5.3 Presence Information

5.3.1 P2P, Presence Information

"P2P, Presence Information" see [PRS1 RD 1.0] section 5.3.1.

5.3.2 P2P, User Setting Presence

"P2P, User Setting Presence" see [PRS1 RD 1.0] section 5.3.2.

5.3.3 Set Global Do-Not-Disturb (DND)

"Set Global Do-Not-Disturb (DND)" see [PRS1 RD 1.0] section 5.3.3.

5.3.4 Reset Global DND

"Reset Global DND" see [PRS1 RD 1.0] section 5.3.4.

5.3.5 Global DND with Interactions

"Global DND with Interactions" see [PRS1 RD 1.0] section 5.3.5.

5.4 Network Presence

5.4.1 Update the presence status when the mobile is out of coverage

5.4.1.1 Short Description

This use case describes how the presence status of a user is updated when his/her mobile device is out of coverage.

5.4.1.2 Actors

- Alice – Moves to an area where her mobile does not have coverage
- Bob – Wants to see Alice's presence status in his PEP
- Presence Network Agent – Detects that Alice is out of coverage by getting information from various network elements (e.g. SGSN, GGSN).
- Bob's PEP
- Presence Server

5.4.1.3 Actor Specific Issues

Bob:

- Wants to get Alice's Presence status in his PEP

5.4.1.4 Actor Specific Benefits

Bob:

- Is able to get Alice's accurate Presence status even when she is out of coverage

5.4.1.5 Pre-conditions

- Alice and Bob are provisioned to use the Presence Service
- Presence Network Agent is able to detect when Alice is out of coverage and is not able to update her Presence status by getting information from various network elements (e.g. SGSN,GGSN etc)
- When Alice is out of coverage, her status shall be shown as "Not available"
- Alice has authorized the Presence Network Agent to publish Presence Information on her behalf

5.4.1.6 Postconditions

- Bob is successfully getting Alice's accurate Presence status, although she does not have coverage

5.4.1.7 Normal Flow

1) As Alice is in an area that has coverage her entry in Bob's PEP is shown as "Available"
2) Alice moves to a no-coverage area. The Presence Network Agent by getting information from network elements detects that she is not connected to the network anymore and informs the Presence Server about that.
3) The Presence Server notifies Bob about this change in Alice's Presence status and now her entry in Bob's Presence-enabled Address is shown as "Not Available".

5.4.1.8 Alternative Flow

None

5.4.1.9 Operational and Quality of Experience Requirements

- It shall be possible to determine how often Alice's Presence status gets updated as a result of Notifications from the Presence Network Agent, as it is a trade off between Presence information accuracy and network efficiency
- The Presence Enabler shall be able to authorize the Presence Network Agent

5.4.2 Single Service, Dual Device

5.4.2.1 Short Description

This use case examines where a user accesses the same service via two different devices that are connected to two different networks, and how the Presence Information is used to best determine the routing of a call. Presence is being published by the user, the device, and the network.

The use case provides an indication as to the benefit of being able to expose the device details, together with network status to which the device is attached, to determine how best to communicate between the two parties based on either an application using the network and device presence, or a Watcher using the network and device presence to determine how they wish to communicate with the other party.

5.4.2.2 Actors

- Alice – A user who is accessing an Instant Messaging service via her mobile device connect to GSM and her PC device connected to a Broadband connection.
- Bob – A user who also accesses an Instant Messaging service via a PC connected to a broadband connection and has access to view the presence of Alice
- Instant Message Application - an application to allow two parties to send messages between them with the ability to support multimedia communications if permitted.
- Presence Client – Resides on the mobile device and the PC device of all human actors
- Presence Network Agent – The entity responsible for the collection of Presence Information relating to the network to which the device is attached.
- Presence User Agent - The entity responsible for the collection of Presence relating to the device or the user.
- Presence Server – Resides in the network

5.4.2.3 Actor Specific Issues

Alice

- Is able to receive the same Instant Message service on both her mobile device and her PC, however the service can only support multimedia calls when being delivered via the PC connected to a broadband connection due to the lack of bandwidth when using her mobile device.
- Is able to use the same Subscription details to attach to the IM service irrespective of the device and network being used.

Presence Server

- Presence regarding the status of the service, the device delivering the service, and the network to which the device is attached, is published to the Presence Server via the Presence User Agents and Presence Network Agents respectively.

Bob

- Is able to view Alice's presence relevant to the IM application, and the device(s) via which the application is being delivered.
- Supports the same Instant Messaging application as Alice and is capable of supporting additional multimedia calls via his broadband network to which his PC is connected.
- Is able to determine from the Presence when Alice is capable of communicating via Instant Messaging

Instant Messaging

- Able to determine how best to communicate with Alice in respect of being able to support the multimedia capability.

5.4.2.4 Actor Specific Benefits

Alice

- Is able to provide Bob with an indication as to the device and implied network status over which the service is being delivered.

Instant Message Application

- Can determine from the Presence Information, provided by the network and the device, as to whether an IM call can take place as well as being able to determine whether a connected device is capable of receiving a multimedia call.

Bob

- Is able to view the Presence Information to best determine how to communicate with Alice.

5.4.2.5 Pre Conditions

- Alice and Bob are provisioned to use the Presence Service.
- Alice and Bob are provisioned with an IM service that is capable of using the Presence Service.
- The network agent is able to determine the status of the network to which the devices are attached to.
- The network agent is able to determine the maximum bandwidth available to the devices attached to the network.
- Alice can be logged into the IM service on more than one device with the same account.
- Alice has given authorisation for Bob to see her presence.
- The IM service is capable of the additional multimedia capabilities.
- The IM service has the ability to determine from the Presence Information to which device the IM shall be delivered
- The Presence Server can determine which service is being delivered by which device as well as the capability of determining which device is connected to which network.
- Bob is aware that Alice can only receive multimedia calls when she is using the IM application on her PC.

5.4.2.6 Post Conditions

- Bob can request a multimedia conversation with Alice and rely on the application to use the network presence and device presence to determine if the communication can be supported.

- Bob can determine from the Presence Information provided to him whether or not Alice is in a position to accept additional multimedia call whilst within the IM application based on prior knowledge that Alice can only accept a multimedia call when she is using her PC connected to the broadband connection.

5.4.2.7 Normal Flow

1) Alice logs in onto her IM service via her GSM mobile device and via her PC connected to her broadband connection.

2) The Presence User Agent publishes Presence information to indicate to the Presence Server Alice is now connected to the IM service via her mobile device and via her PC.

3) The Presence Network Agents update the Presence Server with the status and maximum bandwidth available of the network to which the devices are attached.

4) The unique identities of the devices are recorded against the network to which they are connected within the Presence Server.

5) Bob is notified that Alice is now logged on to her IM service and can see via his device that Alice is available for IM via both her mobile device and her PC.

6) Bob chooses to request an IM session with Alice.

7) The IM application sends the request to Alice via both of her devices. Alice accepts the IM session on her mobile device attached to the GSM network.

8) During the session Bob requests a multimedia session via the IM application.

9) The IM application requests information from the Presence Server as to which devices are being used to deliver the IM service and the status of the networks and bandwidth available to which the devices are attached.

10) The Presence Server returns to the IM application that Alice is available on two devices that are connected to two different networks. Both networks are available however the bandwidths available to each device is different.

11) The IM application determines that the multimedia session can only be supported via the PC device attached to the broadband connection due to the limited bandwidth available to the mobile device.

12) The IM application indicates to Alice that Bob is requesting a multimedia session via both devices but can only be accepted by Alice via her PC connected to the broadband connection..

13) Alice accepts the request via the IM application on her PC

14) The multimedia call is routed from Bob's PC to the PC of Alice. The IM session is continued via the PC device belonging to Alice

15) Alice is still able to receive further IM messages via her mobile.

5.4.2.8 Alternative Flow

1) Alice is logged onto her IM service via her mobile device that is connected to both a GSM network and a WiFi network.

2) The Presence User Agent updates the Presence server that Alice is now connected to the IM service via her mobile device.

3) The Presence Network Agents update the Presence Server with the status and available bandwidth of the networks to which the device is attached to.

4) Bob can see that Alice is available for IM via her mobile device but is not aware of the networks to which the device is attached.

5) Bob requests an IM session with Alice.

6) The IM application uses the Presence information with regards to the networks to which the device is attached, to best determine which network will deliver the IM session.

7) Alice accepts the IM request and an IM session takes place via the GSM network.

8) During the session the status of the GSM network is reported to have failed. The IM application uses the network presence to determine that the session can continue via the WiFi network.

5.4.2.9 Operational and Quality Experience Requirements

It shall be possible for the Presence Server to be able to support the relationship of the service, device, and network within the Presence Server to provide a rich and flexible knowledge of how a service is being delivered in terms of the characteristics of device and the characteristics of the network to which the device is connected.

5.5 Application-Specific Use Cases

5.5.1 Event Buddy

"Event Buddy" see [PRS1 RD 1.0] section 5.5.1.

5.6 Security And Privacy

Privacy protects user data against unwanted and unauthorized access. The presence privacy protects the data about the availability and Presence Information of a mobile user against unwanted and unauthorized data access.

All Watchers that want to get data about the Presence Information status of another user need to be authorized for their access. This authorization is realized in three different modes:

- The user who owns the mobile terminal (Presentity) is directly asked for permission if a Watcher tries to fetch or subscribe his Presence Information. (Reactive Authorization mode) To accomplish users comfort the reactive mode should enable the transition to proactive mode by decision reuse.
- A system that acts on behalf of the user decides for permission if a Watcher that is known tries to fetch or subscribe his Presence Information. (Proactive Authorization mode)
- Reactive Authorization and transition from reactive to proactive authorization mode could be substantially enhanced, if decision supporting features are available as basis for the Presentity's evaluation.

Effective support during the decision process for reactive authorization mode will be very beneficial for the Presentity. For the users comfort the number of decisions should be as small as possible decisions. Define once reusable for future access.

Since the proactive authorization is normally done without any Notification to the Presentity, he needs to be sure that his privacy is managed in a way he is able to control and to understand completely.

For authorization the Presentity is thinking in relation of trust. Therefore authorization lists (Family, Friend, Colleague…) that connect contacts with the same relation should be used. Since the trust relations normally didn't drive the list generation of communication lists (e.g. used for Instant Messaging and Chat session) a reuse of such lists should normally be avoided.

Additionally it might be meaningful to support relations that are hosted outside the mobile domain. (E.g. Companies Directory Service to decide for proactive authorization or support with public key infrastructure)

5.6.1 Presence Privacy

"Presence Privacy" see [PRS1 RD 1.0] section 5.6.1.

5.6.2 Using the Presence Service for Advertising Capabilities

Using the Presence Service for Advertising Capabilities" see [PRS1 RD 1.0] section 5.6.2.

5.6.3 Reactive Authorization

"Reactive Authorization" see [PRS1 RD 1.0] section 5.6.3.

5.6.4 Proactive Authorization:

"Proactive Authorization" see [PRS1 RD 1.0] section 5.6.4.

5.6.5 Proactive Authorization – Common Group, Strictly Secure

"Proactive Authorization – Common Group, Strictly Secure" see [PRS1 RD 1.0] section 5.6.5.

5.6.6 Proactive Authorization – Common Group

"Proactive Authorization – Common Group" see [PRS1 RD 1.0] section 5.6.6.

5.6.7 Authorization Category

"Authorization Category" see [PRS1 RD 1.0] section 5.6.7.

6. Requirements (Normative)

6.1 High-Level Functional Requirements

6.1.1 General

Label	Description	Enabler Release
GEN-001	The Presence Service SHALL be specified in such a manner that no specific execution environment, operating system, or programming language is unfairly favoured for the implementation of a conforming Presence Service.	PRESENCE 1.0
GEN-002	Required interfaces to the Presence Service SHALL not be specified in terms that unfairly favour any execution environment, operating system, or programming language.	PRESENCE 1.0
GEN-003	The Presence Service SHALL be independent of the technology of the access network. For example, it would be inappropriate to specify a Presence Service that works only for GPRS networks. This requirement SHALL NOT preclude making information specific to an access network available to the Presence Service.	PRESENCE 1.0
GEN-004	The Presence Service SHALL interact with external presence enabled services using industry-standard protocols and data formats to the extent enabled by those industry-standard protocols and data formats.	PRESENCE 1.0
GEN-005	The Presence Service SHALL continue to be supported when the user roams to another network that supports the capability to provide Presence Information relating to the roamed user in terms of either the service, device, or the network.	PRESENCE 1.0
GEN-006	The Presence Service SHALL comply with the privacy requirement described in [Privacy].	PRESENCE 1.0
GEN-007	The Presence Service SHOULD allow efficient use of transport resources.	PRESENCE 1.0
	The Presence Service (in some cases together with the corresponding OMA enablers) SHALL support at least the following commonly known Communication Means:	
GEN-008	1) OMA PoC;	PRESENCE 1.0
GEN-009	2) IM (at a minimum OMA IMPS and OMA SIMPLE IM);	PRESENCE 2.0
GEN-010	3) SMS;	PRESENCE 2.0
GEN-011	4) MMS;	PRESENCE 2.0
GEN-012	5) E-mail;	PRESENCE 2.0
GEN-013	6) OMA GS (Gaming Service);	PRESENCE 2.0
GEN-014	7) Circuit-Switched audio call;	PRESENCE 2.0
GEN-015	8) Circuit-Switched video call;	PRESENCE 2.0
GEN-016	9) SIP based Voice over IP (VoIP).	PRESENCE 2.0

Table 1: General Requirements

6.1.2 User Experience

Label	Description	Enabler Release
UEXP-001	It SHALL be possible for Presentities to utilize the Presence Service in order to communicate to others certain information and preferences (Presence Information), such as their willingness and availability to communicate using particular communication means.	PRESENCE 1.0

UEXP-002	Presentities MAY communicate this information to the Presence Service by creating and activating Presence Profiles such as “Working”, “Meeting”, “Out to lunch”, “Discreet”, “Busy”, “Do Not Disturb”, etc.	PRESENCE 1.0
UEXP-003	Presentities SHALL be able to synchronize Presence Profiles with the Presence Service.	PRESENCE 1.0
UEXP-004	The Presence Service SHALL not limit such profiles to pre-specified content.	PRESENCE 1.0
UEXP-005	The Presence Service SHALL allow for such profiles to be suitably customized to meet the needs of a variety of applications and end-users.	PRESENCE 1.0
UEXP-006	While the number and content of those profiles will vary, the presence elements that will be communicated as a result SHALL be defined such that their semantics are very precise in order to ensure that they are consistently interpreted across applications. (For more information see Section 6.1.4 Presence Information)	PRESENCE 1.0

Table 2: User Experience Requirements

6.1.3 Features

Label	Description	Enabler Release
	The Presence Service SHALL be configurable as detailed below.	
FEAT-001	1) Presence service SHALL support Presence Information for multiple, concurrent presence enabled services for each presence Subscriber.	PRESENCE 1.0
FEAT-002	2) Presence Service SHALL support concurrent, multiple terminal devices for each presence Subscriber.	PRESENCE 1.0

Table 3: Features Requirements

6.1.3.1 Publish

Label	Description	Enabler Release
FEAT-PUB-001	The Presence Service and Presence Sources SHALL support the publication of Presence Information.	PRESENCE 1.0
FEAT-PUB-002	The Presence Service SHOULD support the publication of Presence Information on behalf of other Presentities (refer to Delegation Section).	PRESENCE 2.0
FEAT-PUB-003	The Presence Service SHALL support the aggregation and storage of multiple presence elements for each user.	PRESENCE 1.0
FEAT-PUB-004	The Presence Service SHALL support the publication of one or more presence elements at a time.	PRESENCE 1.0
FEAT-PUB-005	The Presence Service SHALL support the retrieval of Presence Information from Presence Sources (network entities, users agents, etc.) either ad-hoc or on a periodic basis	PRESENCE 2.0
FEAT-PUB-006	The Presence Service and Presence Sources MAY support a mechanism to regulate the frequency of publications.	PRESENCE 2.0
FEAT-PUB-007	The Presence Service SHALL support the reception of Presence Information from authorized Presence Sources (network entities, Subscribers, etc.)	PRESENCE 1.0

FEAT-PUB-008	More than one Presence Source MAY publish the same presence elements on behalf of a Presentity. (refer to Delegation Section)	PRESENCE 1.0
	The Presence Service SHALL support a mechanism to define and enforce publication authorization rules. These rules SHALL be able to specify at least:	
FEAT-PUB-009	1) Which Presentities each Presence Source is allowed to publish for	PRESENCE 2.0
FEAT-PUB-010	2) For each authorized Presence Source and Presentity combination (as per the previous bullet item), which Presence Information the Presence Source is allowed to publish	PRESENCE 2.0
FEAT-PUB-011	The Presence Service and Presence Sources MAY support the publication of persistent Presence Information.	PRESENCE 2.0
	The Presence Enabler SHALL define and enforce publication authorization rules. These rules SHALL be able to specify at least: 1) Which Presentities each Presence Source is allowed to publish for For each authorized Presence Source and Presentity combination (as per the previous bullet item), which Presence Information the Presence Source is allowed to publish.	
FEAT-PUB-012	1) Which Presentities each Presence Source is allowed to publish for	PRESENCE 2.0
FEAT-PUB-013	2) For each authorized Presence Source and Presentity combination (as per the previous bullet item), which Presence Information the Presence Source is allowed to publish.	PRESENCE 2.0

Table 4: Features Requirements – Publish Items

6.1.3.2 Subscribe

Label	Description	Enabler Release
FEAT-SUB-001	Watchers SHALL be able to request the Presence Information of presentities (including lists that represent multiple presentities).	PRESENCE 1.0
FEAT-SUB-002	Watchers SHALL be able to request that Notifications are sent on a subscription basis when there is new or modified Presence Information.	PRESENCE 1.0
FEAT-SUB-003	Watchers SHALL be able to request the Presence Information of Presentities (including lists that represent multiple Presentities) on Subscription basis, where Notifications are sent periodically, i.e., at regular intervals.	PRESENCE 2.0
FEAT-SUB-004	Watchers SHOULD be able to specify one or more conditions upon which presence Notifications are generated and sent to them. These conditions SHOULD include at least:	
FEAT-SUB-004	1) specific changes in presence status of a Presentity or list of Presentities;	PRESENCE 1.0

FEAT-SUB-005	2) time constraint conditions, such as buffering or throttling mechanisms;	PRESENCE 2.0
FEAT-SUB-006	3) a condition whether the current state of Presence Information should be delivered upon successful initial Subscription, Subscription refresh or Subscription termination;	PRESENCE 2.0
FEAT-SUB-007	4) a condition on which the Presence Information from a list of Presentities should be delivered.	PRESENCE 2.0
FEAT-SUB-008	5) a condition whether notifications should be suppressed depending on particular Watcher presence state values (if known to the Presence Server)	PRESENCE 2.0
FEAT-SUB-009	Watchers SHALL be able to specify that a particular Subscription generates full or partial (i.e. incremental) Notifications.	PRESENCE 1.0
FEAT-SUB-010	Presence subscriptions SHALL have an expiration time (a.k.a. duration). When the duration of a Subscription elapses, the Subscription is terminated.	PRESENCE 1.0
FEAT-SUB-011	The Presence Service SHALL notify a subscribed Watcher when their Subscription expires, unless the subscribed Watcher requested not to receive such Notifications.	PRESENCE 1.0
FEAT-SUB-012	The Presence Service SHALL provide the means for a subscribed Watcher to renew a Subscription before it expires.	PRESENCE 1.0
FEAT-SUB-013	The Presence Service SHALL provide a mechanism for the subscribed Watcher to request a particular Subscription duration, which MAY be overridden by the Presentity's preferences or configuration parameters of the Presence Service provider. The Presence Service SHOULD define a recommended Subscription expiration time for the Subscribed-watchers.	PRESENCE 1.0
FEAT-SUB-014	The Presence Service SHALL provide a mechanism to cancel a subscribed Watcher's Subscription.	PRESENCE 1.0
FEAT-SUB-015	The Presence Service SHALL provide a mechanism that can be used to notify a subscribed Watcher of the cancellation of their Subscription, subject to the preferences of the Presentity (see next requirement).	PRESENCE 1.0
FEAT-SUB-016	The Presence Service SHALL provide a mechanism to allow a Presentity to suppress a notification to a Watcher regarding a cancelled Subscription.	PRESENCE 1.0
FEAT-SUB-017	A Presentity SHALL have the ability to decide whether to accept or deny incoming presence Subscription requests as those arrive. This is named reactive authorization.	PRESENCE 1.0
FEAT-SUB-018	A Presentity SHALL have the ability to define rules that will determine if future incoming Subscription requests are accepted or denied. This is named proactive authorization.	PRESENCE 1.0
FEAT-SUB-019	A Presentity SHALL have the ability to decide during the reactive authorization procedure to enable the Watcher for proactive authorization for future requests.	PRESENCE 1.0
FEAT-SUB-020	A Presentity SHALL determine which potential Watchers or groups of Watchers (e.g. friends, family) shall be proactively authorized to receive his/her Presence Information.	PRESENCE 1.0

FEAT-SUB-021	A Presentity SHALL determine which potential Watchers or groups of Watchers (e.g. work mates) shall be reactively authorized in order to receive his/her Presence Information.	PRESENCE 1.0
FEAT-SUB-022	A Presentity MAY be provided with information related to the Watchers that request his/her Presence information (e.g. his/her photo, name, MSISDN, free text etc).	PRESENCE 1.0
FEAT-SUB-023	A subscribing Watcher SHALL be notified as to whether the requested Subscription was accepted or denied.	PRESENCE 1.0
FEAT-SUB-024	A Presentity MAY deny an incoming Subscription, while indicating it accepted it (polite blocking).	PRESENCE 1.0
FEAT-SUB-025	The Presence Service SHALL provide the means to enable Presentities be notified of any requests (whether ad-hoc, Subscription-based, or otherwise) for their Presence Information.	PRESENCE 1.0
FEAT-SUB-026	The Presence Service SHALL provide the means to enable Presentities be notified of any subscriptions to their Presence Information that have just expired.	PRESENCE 1.0
FEAT-SUB-027	A presentity SHALL be able to authorize a Watcher to retrieve its Presence Information, via one or more of the mechanisms described here, on behalf of another Watcher.	PRESENCE 2.0
FEAT-SUB-028	It SHALL be possible for a Watcher to request that they receive a particular subset of a Presentity's Presence Information, subject to the Presentity's preferences.	PRESENCE 1.0
FEAT-SUB-029	It SHALL be possible for a Watcher or a Presentity to perform Subscription-related operations in bulk, i.e. where the target is more than one Presentity or Watcher respectively.	PRESENCE 1.0
FEAT-SUB-030	It SHALL be possible for a subscribing Watcher to specify a maximum desired Notification frequency.	PRESENCE 2.0
FEAT-SUB-031	Presence Service SHALL support One-time Event Subscription and Notification	PRESENCE 1.0
FEAT-SUB-032	Watchers MAY be able to make One-time Event Subscription to Presence Service	PRESENCE 1.0
FEAT-SUB-033	Watchers MAY be able to request the Presence Server to pull Presence Information from Presence Source.	PRESENCE 2.0
FEAT-SUB-034	Watchers MAY be able to request Notifications to be selectively delivered upon the state of their presence status.	PRESENCE 2.0
FEAT-SUB-035	The Presence Service SHALL allow the Presentity to retrieve his/her own full set of Presence Information	PRESENCE 1.0
FEAT-SUB-031	The Presence Service SHALL provide mechanisms to limit the number of Subscriptions requested by a Watcher.	PRESENCE 1.0
FEAT-SUB-032	The Presence Service SHALL provide mechanisms to limit the number of simultaneous Subscriptions per Presentity.	PRESENCE 2.0

Table 5: Features Requirements – Subscribe Items

6.1.3.3 Notify

Label	Description	Enabler Release
FEAT-NOT-001	The Presence Service SHALL be able to generate asynchronous Notifications in response to subscribed-to events.	PRESENCE 1.0
FEAT-NOT-002	The Presence Service SHALL support a mechanism such the order of transmitted Notifications can be maintained	PRESENCE 1.0
FEAT-NOT-003	The Presence Service MAY cancel a Subscription, if the Notifications pertaining to that Subscription are undeliverable.	PRESENCE 1.0
FEAT-NOT-004	It MAY be possible for the Presence Service to buffer or otherwise store Notifications, so that the subscribed Watcher, in lieu of asynchronous Notifications, can retrieve them.	PRESENCE 2.0
FEAT-NOT-005	It MAY be possible to retrieve buffered Notifications pertaining to more than one Presentity in bulk.	PRESENCE 1.0
FEAT-NOT-006	The Presence Service MAY buffer received Notifications from a list of Presentities and deliver those when some specified conditions met.	PRESENCE 2.0
FEAT-NOT-007	The Presence Enabler SHOULD ensure that buffered received Notifications from a list of Presentities are delivered within an acceptable timeframe.	PRESENCE 2.0

Table 6: Features Requirements – Notify Items

6.1.3.4 Preferences

Label	Description	Enabler Release
FEAT-PREF-001	Presentities SHALL be able to control how their Presence Information is disseminated	PRESENCE 1.0
FEAT-PREF-002	Presentities SHALL be able to define policies such that the Presence Service disseminates different information to individual Watchers or groups of Watchers.	PRESENCE 1.0
FEAT-PREF-003	The defined policies SHALL cover the possibility of anonymous or unauthenticated Watchers.	PRESENCE 1.0
FEAT-PREF-004	It SHALL be possible to define default policies that apply to Watchers that do not fall in any of the specified groups.	PRESENCE 1.0
FEAT-PREF-005	It SHALL be possible to apply a policy to a particular Watcher, to a particular request, or to a particular request type.	PRESENCE 1.0
FEAT-PREF-006	For each said Watcher or group of Watchers, presentities SHALL be able to define policies such that the Presence Service will reveal all their Presence Information, a subset of their Presence Information, or any other information (whether that is true or not), fully or partially based on their Presence Information.	PRESENCE 1.0
FEAT-PREF-007	The Presence Service SHALL provide mechanisms which may be used to limit the number of times a Watcher can retrieve the Presence Information of a Presentity.	PRESENCE 2.0
FEAT-PREF-008	Presentities SHALL be able to define default policies on a per-Presentity, per-Watcher, per Presentity group, or per Watcher group basis.	PRESENCE 1.0

FEAT-PREF-009	It SHALL be possible for a service provider to override the policies defined by a Presentity.	PRESENCE 2.0

Table 7: Features Requirements – Preferences Items

6.1.3.5 Delegation

Label	Description	Enabler Release
FEAT-DEL-001	The Presence Service SHALL allow a Presentity to selectively authorize others to perform publication on behalf of the Presentity.	PRESENCE 2.0
FEAT-DEL-002	The Presence Service SHALL allow a Watcher to selectively authorizate others to perform Subscription on behalf of the Watcher.	PRESENCE 2.0
FEAT-DEL-003	The Presence Service SHOULD allow the selective authorization of Presentities to configure preferences on behalf of other Presentities.	PRESENCE 2.0
FEAT-DEL-004	The Presence Service SHOULD allow the selective delegation of features to the Presence Service, such that those features can be applied by the service when the Presentities or Watchers are out of contact.	PRESENCE 2.0

Table 8: Features Requirements – Delegation Items

6.1.4 Presence Information

6.1.4.1 Presence Information Content

Label	Description	Enabler Release
PINFO-CONT-001	Presence information relating to a particular Presentity SHALL be segmented in zero or more presence elements.	PRESENCE 1.0
PINFO-CONT-002	The Presence Service SHALL provide a common mechanism that can be used to associate priorities with particular Presence Information Elements. The semantics of this prioritization will depend on the elements being prioritized. The definitions of those Presence Information Elements will include the semantics of the prioritization.	PRESENCE 1.0
PINFO-CONT-003	Presence Service SHALL provide a means where presence elements may be associated with a time at which the presence element should no longer be considered valid	PRESENCE 1.0
PINFO-CONT-004	Presence Service SHALL include a mechanism whereby a Watcher may be informed as to the time the current state of an element pertaining to a particular Presentity is expected to be valid.	PRESENCE 2.0
PINFO-CONT-005	Presence Service SHALL include a mechanism whereby a Watcher may be informed of free text that augments the current state of an associated element pertaining to a particular Presentity.	PRESENCE 2.0

Table 9: Presence Information Requirements – Content Items

6.1.4.2 Presence Information Format

Label	Description	Enabler Release
PINFO-FOR-001	The Presence Service SHALL support a format that is able to represent a rich set of Presence Information.	PRESENCE 1.0
PINFO-FOR-002	Presence Information SHALL be represented using a standard format, for the purpose of exchanging Presence Information.	PRESENCE 1.0
PINFO-FOR-003	A standard format and information semantics (including values where applicable) SHALL be defined for the following common information: 1) Default Willingness (e.g. willing, not willing, etc.)	PRESENCE 1.0
PINFO-FOR-004	2) Application-specific Willingness (e.g. willing for PoC, not willing for IM etc);	PRESENCE 1.0
PINFO-FOR-005	3) Overriding Willingness (e.g. willing, not willing);	PRESENCE 1.0
PINFO-FOR-006	4) Application-specific Availability (e.g. registered with the PoC service);	PRESENCE 1.0
PINFO-FOR-007	5) Application-specific media capabilities (e.g. video support in PoC service);	PRESENCE 2.0
PINFO-FOR-008	6) Network Availability (e.g. the phone is attached or registered to the defined network such as 3GPP IMS or 3GPP2 MMD, out-of-coverage, etc.);	PRESENCE 1.0
	7) Roaming Information	
PINFO-FOR-009	i. Is roaming (e.g. home or visited network)	PRESENCE 2.0
PINFO-FOR-010	ii. Visited network information	PRESENCE 2.0
PINFO-FOR-011	8) Maximum local access network bandwidth (uplink and downlink where applicable);	PRESENCE 2.0
PINFO-FOR-012	9) Estimated local access network bandwidth (uplink and downlink where applicable);	PRESENCE 2.0
PINFO-FOR-013	10) Communication Address (e.g. email address, phone number, etc.);	PRESENCE 1.0
	11) Presentity supplied activity and location	
PINFO-FOR-014	i. Activity (e.g. in a meeting, at the movies, on the phone etc.);	PRESENCE 1.0
PINFO-FOR-015	ii. Textual location (e.g. at home, at work, at the supermarket, etc.);	PRESENCE 1.0
	12) Location (e.g. device-derived location, network-derived location, etc.);	
PINFO-FOR-016	i. OMA recommended format for location information (e.g. MLP or GML).	PRESENCE 2.0
	13) Client device capabilities	
PINFO-FOR-017	i. Application capabilities(e.g. voice, text, H.263 or H.264 video, multimedia, etc.);	PRESENCE 2.0
PINFO-FOR-018	ii. Bearer capabilities (e.g. UMTS, GPRS etc);	PRESENCE 2.0

PINFO-FOR-019	iii. Via appropriate device identifiers (e.g. IMEI, MEID etc.)	PRESENCE 2.0
PINFO-FOR-020	14) Time-zone (e.g. GMT etc);	PRESENCE 1.0
	15) Personal information	
PINFO-FOR-021	i. Mood (e.g. textual: happy, angry, sad, etc. or picture: smiley face, frowning face, etc.)	PRESENCE 1.0
PINFO-FOR-022	ii. Preferred language (e.g. English, Spanish etc);	PRESENCE 1.0
PINFO-FOR-023	iii. Icon (e.g. a status icon of the Presentity's choice)	PRESENCE 1.0
	16) Network Presence	
PINFO-FOR-024	i. Network Status (eg Network up / Network down);	PRESENCE 2.0
PINFO-FOR-025	ii. Maximum Bandwidth Available;	PRESENCE 2.0
PINFO-FOR-026	iii. Device Ids attached to network	PRESENCE 2.0
PINFO-FOR-027	iv. Service ID/Type being delivered by network	PRESENCE 2.0
PINFO-FOR-028	v. Network ID	PRESENCE 2.0
PINFO-FOR-029	The Presence Information format SHALL comply with standard IETF formats, where relevant.	PRESENCE 1.0
PINFO-FOR-030	The Presence Information format SHALL be registered with IANA as a MIME-type.	PRESENCE 1.0
PINFO-FOR-031	The Presence Information format SHOULD use a standard mark-up language.	PRESENCE 1.0
PINFO-FOR-032	In order to transfer Presence Information over a wireless link (e.g. low bandwidth, high latency, and high error rate link) it may be necessary to define an additional format. In this case, appropriate mappings to the standard format SHALL be defined.	PRESENCE 1.0
PINFO-FOR-033	The Presence Information format SHALL be able to represent the Presence Information as a set of zero or more presence elements.	PRESENCE 1.0
PINFO-FOR-034	The Presence Information format SHALL provide the means to uniquely identify a presence element.	PRESENCE 1.0
PINFO-FOR-035	The Presence Information format SHALL provide the means to associate a presence element with an expiration date.	PRESENCE 1.0
PINFO-FOR-036	It SHOULD be possible to extend the presence format, without affecting previously defined aspects.	PRESENCE 1.0
PINFO-FOR-037	The Presence Information format SHALL support multiple character sets.	PRESENCE 1.0
PINFO-FOR-038	The Presence Information format SHALL include a way to identify the Presentity to which it pertains.	PRESENCE 1.0
PINFO-FOR-039	The Presence Information format SHOULD include a way to include Presence Information indirectly (e.g. by providing a link to a different location)	PRESENCE 1.0

Table 10: Presence Information Requirements – Format Items

6.1.4.3 Enabler specific issues

Label	Description	Enabler Release
PINFO-ENSPEC-001	The Presence Service SHALL specify the presence elements in such a way that they can be used consistently and without ambiguity across multiple enablers.	PRESENCE 1.0
PINFO-ENSPEC-002	Enablers that use the Presence Service SHOULD re-use the presence elements defined above where appropriate, instead of redefining them in an Application-specific manner.	PRESENCE 1.0
PINFO-ENSPEC-003	The Presence Service SHALL allow other enablers to define new presence elements that are Application specific.	PRESENCE 1.0
PINFO-ENSPEC-004	Enablers that use the Presence Service and need to define new presence elements SHOULD define a standard format and information semantics (including values where applicable) for those presence elements.	PRESENCE 1.0

Table 11: Presence Information Requirements – Enabler Specific Items

6.1.5 XML Document Management for the Presence Service

This section describes additional functional requirements that are specific to document types needed to support the SIMPLE Presence enabler.

6.1.5.1 Shared Lists

Label	Description	Enabler Release
XDM-SHRD-001	The Presence Service SHALL allow Presentities and Watchers to utilize shared lists, e.g. contact lists as defined in [XDMREQ].	PRESENCE 1.0

Table 12: XML Document Management for the Presence Service Requirements – Shared Lists Items

6.1.5.2 Presence Authorization Policies

Label	Description	Enabler Release
XDM-AUP-001	The document related to presence authorization policies SHALL define:	
XDM-AUP-001	1) A document that defines how incoming Subscription requests are handled. This document SHALL be able to utilize Accept, Reject, Polite Block and Deferred lists. Depending on how the Subscription policy document combines those lists, the Presence Server will determine whether to accept, reject, politely block, or defer the handling of an incoming Subscription request.	PRESENCE 1.0
XDM-AUP-002	2) What Presence Information will be disseminated to the Watchers of a particular Presentity.	PRESENCE 1.0
XDM-AUP-003	3) What conditions will trigger a presence Notification for a particular Presentity.	PRESENCE 2.0

Table 13: XML Document Management for the Presence Service Requirements – Presence Authorization Policies Items

6.1.5.3 Presence Subscription Lists

Presence Subscription Lists (PSLs) are used to enable end-user to watch Presence Information for a list of URIs, where the Presence Information can bed request the list of attributes for every member. Following the requirement to support Subscriptions to parts of the Presence Information, it is meaningful to link the requested presence information tuples with the PSL.

Label	Description	Enabler Release
XDM-PSL-001	URI lists (as stored in the XDM server and the terminal) SHALL be supported as a reference for members of a PSL.	PRESENCE 1.0
XDM-PSL-002	PSL SHALL support a presence attribute request list for every list member.	PRESENCE 2.0
XDM-PSL-003	PSL SHALL support a presence attribute request list common for some list members.	PRESENCE 2.0

Table 14: XML Document Management for the Presence Service Requirements – Presence Subscription Lists Items

6.1.6 Network Interfaces

Label	Description	Enabler Release
NETIF-001	The Presence Service SHALL support a SIP-based network interface [RFC-3261].	PRESENCE 1.0
NETIF-002	The supported network interfaces SHALL make it possible for a logical entity, such as Presentity or Watcher, to simultaneously access the Presence Service from multiple physical locations.	PRESENCE 1.0
NETIF-003	The supported network interfaces SHALL be suitable for a variety of other enablers or applications to access the Presence Service.	PRESENCE 1.0
NETIF-004	The supported network interfaces SHALL be suitable for any Presence Source (e.g. Presence Network Agent) to access the Presence Service.	PRESENCE 1.0
NETIF-005	The supported network interfaces SHALL be designed to support extensions, while maintaining backwards compatibility.	PRESENCE 1.0

Table 15: Network Interfaces Requirements

6.1.7 Security

Label	Description	Enabler Release
SEC-001	Presence Service SHALL include mechanisms to securely authenticate entities that require access to the Presence Service.	PRESENCE 1.0
SEC-002	Presentities and Watchers SHALL support mechanisms to securely authenticate themselves to the Presence Service.	PRESENCE 1.0
SEC-003	The supported network interfaces SHALL include mechanisms to support non-authenticated Watchers that require access to the Presence Service.	PRESENCE 1.0
SEC-004	The supported network interfaces SHALL include suitable mechanisms to prevent denial-of-service attacks.	PRESENCE 1.0
SEC-005	The supported network interfaces SHALL include suitable mechanisms to prevent replay attacks.	PRESENCE 1.0

SEC-006	The supported network interfaces SHALL include suitable mechanisms to prevent maintain the privacy of exchanged information.	PRESENCE 1.0
SEC-007	The supported network interfaces SHALL include suitable mechanisms to prevent third parties from interfering with the provided services.	PRESENCE 1.0
SEC-008	The supported network interfaces SHALL include suitable mechanisms to verify the authenticity of the source of the published Presence Information.	PRESENCE 1.0
SEC-009	The supported network interfaces SHALL include suitable mechanisms to verify the integrity of exchanged messages.	PRESENCE 1.0

Table 16: Security Requirements

6.1.8 Presence Sources and Watchers

Label	Description	Enabler Release
SRC&WAT-001	The Presence source and Watchers SHALL support the authentication with the Presence Service.	PRESENCE 1.0
SRC&WAT-002	The Presence Source and Watchers SHOULD support default presence settings (e.g. default profile, default groups) that are automatically selected when a device is powered up for the first time.	PRESENCE 1.0

Table 17: Presence Sources and Watchers Requirements

6.1.9 Collecting accounting information

Label	Description	Enabler Release
ACC-001	The Presence Service SHALL collect accounting information for all presence transactions.	PRESENCE 2.0
	The Presence Service SHALL support the following:	
ACC-002	1) Both online and offline charging.	PRESENCE 2.0
ACC-003	2) Pre-paid and post-paid charging.	PRESENCE 2.0
ACC-004	3) Different tariff rules depending on service providers' policies.	PRESENCE 2.0
ACC-005	4) Flat fee: per time period independent of usage.	PRESENCE 2.0
ACC-006	5) Correlation between Presence Service charging data and transport or bearer level charging data (e.g. charging at GPRS).	PRESENCE 2.0
ACC-007	6) Correlation between Presence Service charging data and session level charging data (e.g. charging at IMS).	PRESENCE 2.0
ACC-008	7) Correlation between Presence Service charging data and other presence service enabled service's charging data (e.g. charging of PoC).	PRESENCE 2.0

Table 18: Collecting accounting information Requirements

6.1.9.1 Charging of Presentity

Label	Description	Enabler Release
	The charging of Presentity can be made on at least the following events:	
ACC-PRES-001	1) Presence Information Publication	PRESENCE 2.0
ACC-PRES-002	2) Presence Information Notification	PRESENCE 2.0
	The tariff rule can be based on at least the following criteria:	
ACC-PRES-003	1) The size of the Presence Information notified to Watchers.	PRESENCE 2.0
ACC-PRES-004	2) The number of Watchers subscribed.	PRESENCE 2.0
ACC-PRES-005	3) The content of the Presence Information notified to Watchers.	PRESENCE 2.0
ACC-PRES-006	4) The content of the Presence Information published.	PRESENCE 2.0
ACC-PRES-007	5) The size of the Presence Information published.	PRESENCE 2.0

Table 19: Collecting accounting information Requirements – Charging of Presentity Items

6.1.9.2 Charging of Watcher

Label	Description	Enabler Release
	The charging of Watcher can be made on at least the following events.	
ACC-WAT-001	1) Presence Information Subscriptions	PRESENCE 2.0
ACC-WAT-002	2) Presence Information Notifications	PRESENCE 2.0
ACC-WAT-003	3) Searching for Presentities	PRESENCE 2.0
	The tariff rule can be based on at least the following criteria.	The mechanisms for supporting charging are outside the scope of this enabler, however, if the Charging Enabler is to be used with this release, the enabler release may specify presence specific charging parameters.
ACC-WAT-004	1) The size of the Presence Information retrieved from the Presence Server	PRESENCE 2.0
ACC-WAT-005	2) The number of Presentities subscribed to.	PRESENCE 2.0
ACC-WAT-006	3) The duration of the Presence Information Subscription.	PRESENCE 2.0

ACC-WAT-007	4) The content of the Presence Information requested to the Presence Server.	PRESENCE 2.0

Table 20: Collecting accounting information Requirements – Charging of Watcher Items

6.1.10 Operational & Quality of Experience

Label	Description	Enabler Release
OP&QOE-001	Presence Service Notifications SHALL be sent out as close as possible to the generating event, subject to throttling requirements.	PRESENCE 1.0

Table 21: Operational & Quality of Experience Requirements

6.1.11 Interoperability

Label	Description	Enabler Release
IOP-001	Presence Subscribers SHALL be able to seamlessly utilise Presence features involving other Presence Subscribers regardless of their Presence Service provider. For example, a list of Presentities to subscribe to may include Presence sources that are subscribed to another service provider.	PRESENCE 1.0
IOP-002	Presence 2.0 Service SHALL support Presence 1.0 Service functionality.	PRESENCE 2.0
IOP-003	While connected to the Presence 1.0 Service, Presence 2.0 Clients SHALL support the Presence 1.0 functionality	PRESENCE 2.0

Table 22: Interoperability between Presence Service Providers & Service Entities Requirements

Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
n/a	n/a	No prior version

A.2 Draft/Candidate Version 2.0 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-RD-Presence_SIMPLE-V2_0	27 June 2005	All	Initial Presence 2.0 RD based on Presence 1.0 RD Candidate OMA-RD-Presence_SIMPLE-V1_0-20050524-C
	22 Nov 2005	5.1.1.4 5.2.1.7 5.2.2.7 5.2.3.5 4.6 5.2.8 6.1.3.1 2.2 2.1, 2.2	Incrorporation of 2005-0434R01 Incrorporation of 2005-0530R05 Incrorporation of 2005-0575 Incrorporation of 2005-0576
	27 Dec 2005	4.3, 6.1.1	Incrorporation of 2005-0587R02
	27 Dec 2005	6.1.3.2	Incrorporation of 2005-0588R01
	27 Dec 2005	6.1.4.2	Incrorporation of 2005-0589R01
	27 Dec 2005	6.1.3.1	Incrorporation of 2005-0601R03
	27 Dec 2005	5.4.1.9 6.1.6	Incrorporation of 2005-0660R01
	14 Feb 2006	6.1.1	Incrorporation of 2006-0031R01
	20 Mar 2006	1, 4, 5.2.3.6, 5.2.3.7 5.2.8.7, 5.2.8.8 Section 6	Incrorporation of 2006-0115
	20 Mar 2006	6.1.4.1	Incrorporation of 2006-0038R03
	21 Jun 2006	6.1.3.2 4.6, 6.1.3.2, 6.1.3.5, 6.1.4.1, 6.1.4.2, 6.1.9.1 6.1.9.2 6.1.5 6.1.3.4 6.1.3	Incrorporation of CRs: OMA-PAG-2006-0262 OMA-PAG-2006-0219R03 OMA-PAG-2006-0217 OMA-PAG-2006-0240R01
	13 Jul 2006	3.3 6.1.4.2	Incrorporation of CRs: OMA-PAG-2006-0317R02
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Document Identifier	Date	Sections	Description
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	10 Jan 2007	1, 2.1, 2.2, 3.1, 3.2, 3.3, 4.1, 4.3, 4.5, 5.1.1, 5.2.1 5.2.2, 5.2.3 5.2.4, 5.2.5 5.2.6, 5.2.7 5.2.9.1, 5.2.9.3, 5.2.9.4, 5.2.9.5, 5.2.9.6, 5.2.9.7, 5.3.1, 5.3.2 5.3.3, 5.3.4 5.3.5, 5.5.1 5.6.1, 5.6.2 5.6.3, 5.6.4 5.6.5, 5.6.6 5.6.7, 6.1.3.1, 6.1.3.3, 6.1.3.4, 6.1.9.1, 6.1.9.2,	Incrorporation of CRs: OMA-PAG-2006-0681 OMA-PAG-2006-0817 OMA-PAG-2006-0839 OMA-PAG-2006-0840 OMA-PAG-2006-0841R01 OMA-PAG-2006-0842 OMA-PAG-2006-0844R01 OMA-PAG-2006-0845 OMA-PAG-2006-0846 OMA-PAG-2006-0847 OMA-PAG-2006-0864 OMA-PAG-2006-0873 OMA-PAG-2006-0874
	19 Feb 2007	5.2.9, 5.7, 6.1.3.1 6.1.3.2, 6.1.8, all	Incrorporation of CRs: OMA-PAG-2007-0012 OMA-PAG-2007-0015R03 OMA-PAG-2007-0024R02 OMA-PAG-2007-0038 OMA-PAG-2007-0039R01 OMA-PAG-2007-0055 OMA-PAG-2007-0056 OMA-PAG-2007-0057 OMA-PAG-2007-0076R01 OMA-PAG-2007-0092R01 OMA-PAG-2007-0111R01 Editorial RDRR comments A028, A032, A033, A035 and A036
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