



# **Presence Access Layer Requirements**

Candidate Version 1.0 – 28 Jul 2009

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**Open Mobile Alliance**  
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# 1. Scope

**(Informative)**

This document contains use cases and requirements for the OMA Presence Access Layer Enabler, taking into consideration the demands of end-users, service providers and system implementers.

## 2. References

### 2.1 Normative References

- [LOCSIP\_RD] “Location in SIP/IP core Requirements”, Open Mobile Alliance™, OMA-RD-LOCSIP-V1\_0,  
URL: <http://www.openmobilealliance.org>
- [PDE\_DDS] “Presence SIMPLE Data Specification”, Version 2.0, Open Mobile Alliance™, OMA-DDS-  
Presence\_Data\_Ext-V2\_0,  
URL: <http://www.openmobilealliance.org>
- [PRS\_IG] “Implementation Guidelines for OMA Presence SIMPLE v1.1”, Open Mobile Alliance™, OMA-WP-  
PRS\_1\_1\_Implementation\_Guidelines,  
URL: <http://www.openmobilealliance.org/>
- [PRS\_RD] “Presence SIMPLE Requirements”, Version 2.0, Open Mobile Alliance™, OMA-RD-Presence\_SIMPLE-  
V2\_0,  
URL: <http://www.openmobilealliance.org>
- [PRS\_TS] “Presence SIMPLE Specification”, Version 2.0, Open Mobile Alliance™, OMA-TS-Presence\_SIMPLE-  
V2\_0,  
URL: <http://www.openmobilealliance.org>
- [RFC2119] “Key words for use in RFCs to Indicate Requirement Levels”, S. Bradner, March 1997,  
URL: <http://www.ietf.org/rfc/rfc2119.txt>
- [Privacy\_Req] “OMA Privacy Requirements for Mobile Services”, Open Mobile Alliance™,  
URL: <http://www.openmobilealliance.org>

### 2.2 Informative References

- [OMADICT] “Dictionary for OMA Specifications”, Version 2.7, Open Mobile Alliance™,  
OMA-ORG-Dictionary-V2\_7,  
URL: <http://www.openmobilealliance.org>

## 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

|                                     |  |
|-------------------------------------|--|
| <b>Delegated Subscription</b>       | Use definition from [PRS_RD].  |
| <b>Enabler</b>                      | Use definition from [OMADICT].   |
| <b>Location Server</b>              | Use definition from [LOCSIP_RD].   |
| <b>Notification</b>                 | Use definition from [PRS_RD].  |
| <b>PAL Administrator</b>            | A User authorized to provision and administer a PAL Service.   |
| <b>PAL Client</b>                   | A client which processes Presence Aspects provided by a PAL Service for one or more presentities.  |
| <b>PAL Policy</b>                   | A set of guiding principles and rules used as a mechanism to assist a PAL Service in the consolidation of Presence Information on behalf of PAL Clients.   |
| <b>PAL Presence Parameters</b>      | A collection of one or more of the following: <ul style="list-style-type: none"> <li>• Presence Aspect(s);</li> <li>• PAL Rule(s) including all dependent rules;</li> <li>• PAL Policy;</li> <li>• Presence Trigger(s) if applicable to an associated presence aware service.</li> </ul> |
| <b>PAL Profile</b>                  | A set of PAL Presence Parameters applicable to presence aware applications or services.  |
| <b>PAL Rules</b>                    | A sequence of logical operations applicable to a Presence Aspect or Presence Trigger.  |
| <b>PAL Server</b>                   | A server that receives and processes PAL request(s) from PAL Clients and returns a corresponding result(s) (e.g. establish and return a Presence Context).   |
| <b>PAL Service</b>                  | A service offered by PAL to provide a simplified and consolidated view of presence information for consumption by PAL Clients.   |
| <b>PAL Subscription</b>             | The information kept by the PAL Service about a PAL Client’s request to monitor, process and notify regarding the Presence Information of one or more Presentities.  |
| <b>Presence Aspect</b>              | A logical abstraction used to consolidate presence information on behalf of a Watcher, based on one or more Presence Information Elements.   |
| <b>Presence Context</b>             | A PAL Service environment relevant to the consolidation and representation of presence information.  |
| <b>Presence Trigger</b>             | A mechanism used to detect change(s) affecting a Presence Aspect and as a result, execute a predefined action.   |
| <b>Presence Information</b>         | Use definition from [PRS_RD].  |
| <b>Presence Information Element</b> | Use definition from [PRS_RD].  |
| <b>Presence Service</b>             | Use definition from [PRS_RD].  |
| <b>Service Provider</b>             | Use definition from [OMADICT].   |
| <b>Subscription</b>                 | Use definition from [PRS_RD].  |
| <b>User</b>                         | Use definition from [OMADICT].   |
| <b>Watcher</b>                      | Use definition from [PRS_RD].  |

**Watcher Information** Use definition from [PRS\_RD].

**Watcher Information  
Subscriber** Use definition from [PRS\_RD].

### 3.3 Abbreviations

|            |                            |
|------------|----------------------------|
| <b>OMA</b> | Open Mobile Alliance       |
| <b>PAL</b> | Presence Access Layer      |
| <b>PoC</b> | Push-to-talk over Cellular |
| <b>QoS</b> | Quality of Service         |



## 4. Introduction

**(Informative)**

The OMA Presence SIMPLE Enabler is a SIP/SIMPLE-based Presence Service responsible for the capture of state, and other relevant information for distribution to authorized observers. The Presence Access Layer Enabler is complimentary to Presence SIMPLE.

PAL specifies a set of logically interoperable abstractions known as Presence Aspects. Presence Aspects consolidate presence information based on one or more Presence Information Elements. PAL Presence Aspects are based on underlying rules that fully align with the Presence SIMPLE Enabler and applicable Implementation Guidelines for OMA Presence SIMPLE. Presence Trigger's provide a means for a presence aware service to execute a specified action (also specified by rules) when a change is detected for a corresponding Presence Aspect.

Presence Context permits a given presence aware service to select all relevant/applicable presence aspects required to fulfill service function points. This provides PAL Client's with a zero-configuration presence filtering mechanism. That is, a PAL Client need only interact with a specific subset of interoperable Presence Aspects as specified by the associated Presence Context for the given presence aware service.

The objective of the PAL Enabler is to define a set of common interoperable Presence Aspects, and Presence Triggers. This includes establishing the scope and purpose of each Presence Aspect/Trigger, along with defining rules and mappings to the applicable Presence Information Elements. In addition, the PAL Enabler will also specify a mechanism for establishing and resolving Presence Context on behalf of PAL Client's making use of presence aware services or applications.

## 5. PAL release description

**(Informative)**

Determinate, consistent views of presence corresponding to Presentities of interest are crucial for successful mobile presence deployments. Service Provider's demand wireless efficiency and scalability as the number of mobile presence services/subscribers grows and status information becomes more complex. Subscribers require intuitive and easy to use presence aware mobile services which operate seamlessly across domains and are able to adapt to a mobile user's ever changing usage scenarios.

The Presence Access Layer (PAL) provides abstract presence indicators known as Presence Aspects. Presence Aspects provide a wirelessly efficient mechanism with which a presence client (i.e. PAL Client) may receive determinate, consistent, and interoperable presence indications based on a consolidated view of underlying Presence Information. Consolidation of information is achieved through the use of common logic based on the OMA Presence SIMPLE Data Specification and Implementation Guidelines for OMA Presence SIMPLE.

The PAL Enabler provides the following functions:

- Acceptance of PAL service requests;
- Supports a mechanism for the resolution of Presence Context on behalf of PAL Clients based on a presence aware service or class of service;
- Interacts with other Enablers for the retrieval of required information (e.g. Presence SIMPLE, XML Document Management Enablers);
- Maintains privacy and security of information requested and mediated by PAL.

Figure 1 illustrates a logical view of the PAL Enabler including interaction with other Enablers.

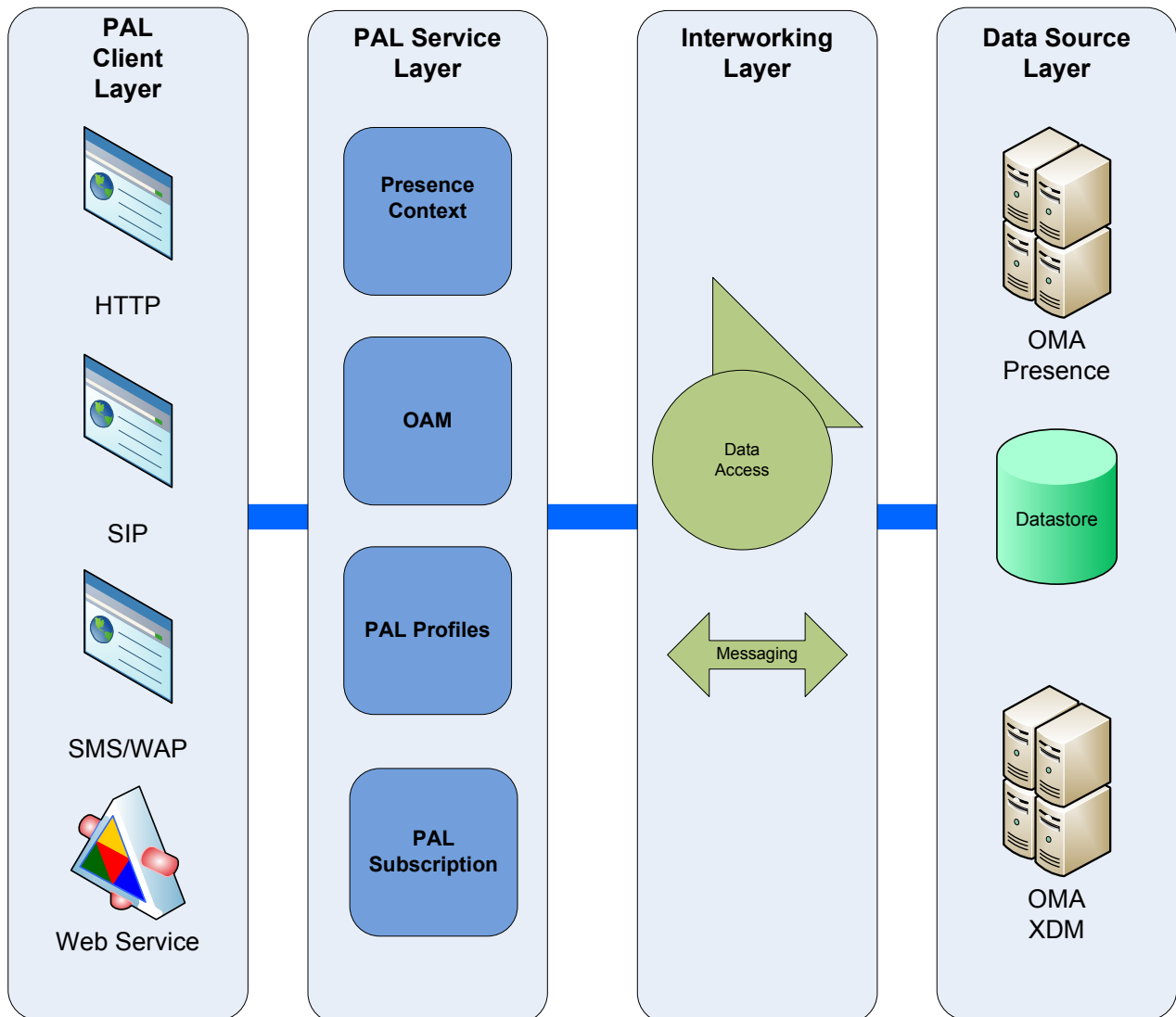


Figure 1 OMA PAL Enabler – Logical View

## 5.1 Version 1.0

The PAL Version 1.0 Enabler provides functionality to achieve wirelessly efficient and determinate presence indications. This is based on the following functionality:

- Interaction between a PAL Client and the PAL Service;
- Interworking with OMA Presence SIMPLE, and OMA XML Document Management Enablers;
- Common logic based on interoperable rules, for the consolidation of presence information;
- Management and administration of PAL Enabler on behalf of a Service Provider.

## 6. Requirements (Normative)

### 6.1 Modularisation

The PAL RD includes the following requirements modules:

- **Client Interaction:** mandatory module; contain requirements for access to and interaction between a PAL Client and a PAL Service.
- **Context:** mandatory module; contain requirements related to the resolution of Presence Context on behalf of a presence aware service (e.g. OMA PoC).
- **Interworking:** mandatory module; contain requirements for interworking, e.g., processing of presence information on behalf of a PAL Client.
- **Privacy and Security:** mandatory module; contain requirements relating to the privacy and security of information requested and mediated by PAL on behalf of PAL Clients and associated data services (e.g. OMA Presence).
- **Provisioning and Administration:** mandatory module; contain requirements to manage and provision the PAL Enabler.

### 6.2 High-Level Functional Requirements

This section specifies the high level functional requirements for the PAL Enabler.

| Label       | Description   | Release | Functional module |
|-------------|---|---------|-------------------|
| PAL-HLF-001 | The PAL Enabler SHALL provide means to expose simplified views of Presence Information using Presence Aspects.                                  | PAL 1.0 | General           |
| PAL-HLF-002 | The PAL Enabler SHALL provide means to detect changes in Presence Information associated with a Presence Aspect.                                | PAL 1.0 | General           |
| PAL-HLF-003 | The PAL Enabler SHALL provide a mechanism to execute a predefined action corresponding with a Presence Trigger.                                 | PAL 1.0 | General           |
| PAL-HLF-004 | The PAL Enabler SHALL provide a mechanism to specify common rules for processing logic of Presence Information applicable to a Presence Aspect. | PAL 1.0 | General           |
| PAL-HLF-005 | The PAL Enabler SHALL provide a policy mechanism associated with processing logic of Presence Information applicable to a Presence Aspect.      | PAL 1.0 | General           |
| PAL-HLF-006 | The PAL Enabler SHALL support the request and retrieval of Presence Aspects relating to one or more Presentities.                               | PAL 1.0 | General           |
| PAL-HLF-007 | The PAL Enabler SHALL be able to uniquely identify a given Watcher or Presentity.   | PAL 1.0 | General           |
| PAL-HLF-008 | The PAL Enabler SHALL provide a mechanism to create, use and manage PAL Profiles for presence aware services (e.g. OMA IM, etc.)                | PAL 1.0 | General           |

**Table 1: High-Level Functional Requirements**

#### 6.2.1 Security

None identified.

### 6.2.1.1 Authentication

This subclause specifies PAL Enabler requirements for authentication.

| Label       | Description  | Release | Functional module |
|-------------|--|---------|-------------------|
| PAL-AUC-001 | The PAL Enabler SHALL support a mechanism for mutual authentication between a PAL Client and a PAL Server. | PAL 1.0 | General           |

**Table 2: High-Level Functional Requirements – Authentication Items**

### 6.2.1.2 Authorization

This subclause specifies PAL Enabler requirements for authorization.

| Label       | Description  | Release | Functional module |
|-------------|--|---------|-------------------|
| PAL-AUT-001 | The PAL Enabler SHALL authorize a PAL Client to use the PAL Service. | PAL 1.0 | General           |

**Table 3: High-Level Functional Requirements – Authorization Items**

### 6.2.1.3 Data Integrity

This subclause specifies PAL Enabler requirements for data integrity.

| Label        | Description   | Release | Functional module |
|--------------|---|---------|-------------------|
| PAL-DINT-001 | The PAL Enabler SHALL ensure data integrity protection between a PAL Client and a PAL Server. | PAL 1.0 | General           |

**Table 4: High-Level Functional Requirements – Data Integrity Items**

### 6.2.1.4 Confidentiality

This subclause specifies PAL Enabler requirements for confidentiality.

| Label        | Description   | Release | Functional module |
|--------------|---|---------|-------------------|
| PAL-CONF-001 | Mechanisms SHALL be provided to support confidentiality of message exchanges between a PAL Client and a PAL Server. | PAL 1.0 | General           |

**Table 5: High-Level Functional Requirements – Confidentiality Items**

## 6.2.2 Interoperability

None identified.

## 6.2.3 Privacy

This subclause specifies PAL Enabler requirements for privacy. The Enabler handles personal data and has to ensure that protection of such data is not violated by the Enabler. The Enabler achieves this by complying with the common requirements for privacy specified by OMA.

| Label       | Description   | Release | Functional module |
|-------------|---|---------|-------------------|
| PAL-PRV-001 | The PAL Enabler SHALL fulfil the requirements in [Privacy_Req].   | PAL 1.0 | General           |
| PAL-PRV-002 | The PAL Enabler SHALL use for the evaluation only the information that the requestor is authorized to obtain. | PAL 1.0 | General           |

Table 6: High-Level Functional Requirements – Privacy Items

## 6.2.4 Client Interaction

This sub-clause specifies PAL Enabler requirements for the interaction between a PAL Service and PAL Client. A PAL Service can for e.g., notify a PAL Client as a result of a detected change in Presence Aspect corresponding to a Presentity associated with the Presence Service. Further, the PAL Service may provide Presence Aspect indications in response to PAL service requests initiated by a PAL Client. The input for a PAL service request can be e.g. the identity of one or more Presentities, requested Presence Aspect(s), and optionally the identity of the PAL Client.

| Label        | Description   | Release        | Functional module  |
|--------------|---|----------------|--------------------|
| PAL-INTE-001 | The PAL enabler SHALL provide a mechanism for a PAL Client to request Presence Aspects(s) relating to one or more Presentities.   | PAL 1.0        | Client Interaction |
|              | The PAL enabler SHALL support the following Presence Aspects:   |                |                    |
| PAL-INTE-002 | 1) A Presence Aspect indicating a presentity's willingness to participate in an associated service interaction;   | PAL 1.0        | Client Interaction |
| PAL-INTE-003 | 2) A Presence Aspect indicating a presentity's availability to participate in an associated service interaction;  | PAL 1.0        | Client Interaction |
| PAL-INTE-004 | 3) A Presence Aspect indicating a presentity's most applicable method of participation in an associated service interaction;  | PAL 1.0        | Client Interaction |
| PAL-INTE-005 | 4) A Presence Aspect indicating a presentity is contactable (i.e. willing, available and in coverage) for participation in an associated service interaction;   | PAL 1.0        | Client Interaction |
| PAL-INTE-006 | 5) A Presence Aspect that provides a list of presentities within a specified proximity and optionally fulfils a set of criteria;<br><br>Editor's Note: Possible re-use of CBUS is FFS.                        | Future release | Client Interaction |
| PAL-INTE-007 | 6) A Presence Aspect indicating whether a presentity is contactable and optionally fulfils a set of criteria (e.g. based on whether the presentity is 'contactable' and shares a common interest – 'soccer'); | PAL 1.0        | Client Interaction |
| PAL-INTE-008 | 7) Presence Aspects based on each existing Presence Information Elements (e.g. Presence Aspect "personal-interests") as described in [PDE_DDS];   | PAL 1.0        | Client Interaction |
| PAL-INTE-009 | 8) Presence Aspects based on existing Watcher Information (e.g. Presence Aspect "pending-subscription") as described in [PRS_TS].   | PAL 1.0        | Client Interaction |
| PAL-INTE-010 | The PAL Enabler SHALL support execution of Presence Triggers on behalf of PAL Clients.  | PAL 1.0        | Client Interaction |
|              | The PAL Enabler SHALL support the following Presence Triggers:  |                |                    |
| PAL-INTE-011 | 1) A trigger invoked when a presentity's willingness changes for the associated service or application;   | PAL 1.0        | Client Interaction |
| PAL-INTE-012 | 2) A trigger invoked when a presentity's availability changes for the associated service or application;  | PAL 1.0        | Client Interaction |

|              |  |                |                    |
|--------------|--|----------------|--------------------|
| PAL-INTE-013 | 3) A trigger invoked when a presentity's contactability changes for the associated service or application;   | PAL 1.0        | Client Interaction |
| PAL-INTE-014 | 4) Triggers based on changes in each other existing Presence Information Elements described in [PDE_DDS];  | FFS            | Client Interaction |
| PAL-INTE-015 | 5) A trigger invoked when a presentity's proximity to the watcher changes;<br><br>Editor's Note: Possible re-use of CBUS is FFS.   | Future release | Client Interaction |
| PAL-INTE-016 | 6) A trigger invoked when it is detected that a presentity has updated a note;   | PAL 1.0        | Client Interaction |
| PAL-INTE-017 | 7) A trigger invoked when a presentity switches from an eligible to ineligible session participation state (or vice-versa) for a given service or application.                       | Future release | Client Interaction |
|              | The PAL enabler SHALL support the following actions upon execution of Presence Triggers:   |                |                    |
| PAL-INTE-018 | 1) Generate a notification toward PAL Clients; (i.e. Notify that a trigger condition has been met)   | PAL 1.0        | Client Interaction |
| PAL-INTE-019 | 2) Generate a .notification toward a service with instructions provided by the PAL Service. (e.g. trigger an IM service to send an invitation)                                       | Future release | Client Interaction |
| PAL-INTE-020 | The PAL Service SHALL allow optimized delivery of Presence Aspects and Presence Triggers toward a PAL Client (e.g. bundling).  | PAL 1.0        | Client Interaction |
| PAL-INTE-021 | The PAL Enabler SHALL ensure that PAL Service protocols provide support for PAL Clients deployed on devices without support for Presence SIMPLE Enabler (re: watcher functionality). | PAL 1.0        | Client Interaction |
| PAL-INTE-022 | The PAL Enabler SHALL provide PAL Clients with a consistent and unambiguous view of Presence Information.  | PAL 1.0        | Client Interaction |
| PAL-INTE-023 | The PAL Enabler SHALL provide a mechanism for a PAL Client to define User specific Presence Aspects.   | PAL 1.0        | Client Interaction |
| PAL-INTE-024 | The PAL Enabler MAY allow a Presence Aspect to be combined with another Presence Aspects.  | PAL 1.0        | Client Interaction |
|              | The PAL Enabler SHALL provide a mechanism for a PAL Client to store the following User specific information:   |                |                    |
| PAL-INTE-025 | 1) Presence Aspect(s);   | PAL 1.0        | Client Interaction |
| PAL-INTE-026 | 2) Presence Trigger(s).  | PAL 1.0        | Client Interaction |
| PAL-INTE-027 | The PAL Enabler MAY provide a mechanism for a PAL Client to search Presence Aspects or Presence Triggers.  | PAL 1.0        | Client Interaction |
| PAL-INTE-028 | The PAL Enabler MAY provide a mechanism for a PAL Client to share User specific Presence Aspects or Presence Triggers with other PAL Clients.  | PAL 1.0        | Client Interaction |
| PAL-INTE-029 | The PAL Client SHALL be able to suspend or resume delivery of Presence Information associated with a PAL Subscription.   | PAL 1.0        | Client Interaction |
|              | The PAL Enabler SHALL support the monitoring of Presence Aspect changes using Presence Triggers on the following basis:  |                |                    |
| PAL-INTE-030 | 1) One-time until a change is detected;  | PAL 1.0        | Client Interaction |
| PAL-INTE-031 | 2) Over a specified time period;   | PAL 1.0        | Client Interaction |

|              |  |         |                    |
|--------------|--|---------|--------------------|
| PAL-INTE-032 | 3) Over an indefinite time period until cancelled.   | PAL 1.0 | Client Interaction |
|              | The PAL Enabler SHALL support the following PAL Client specified constraints when establishing PAL Subscriptions or requesting Presence Aspects from a PAL Service:        |         |                    |
| PAL-INTE-033 | 1) Quality of service (e.g. QoS associated with a presence aware service);   | PAL 1.0 | Client Interaction |
| PAL-INTE-034 | 2) Level of interest (e.g. level of interest associated with a presence aware service);  | PAL 1.0 | Client Interaction |
| PAL-INTE-035 | 3) Priority value (e.g. priority associated with a Presence Aspect request).   | PAL 1.0 | Client Interaction |
| PAL-INTE-036 | The duration of a PAL Subscription SHALL last until it expires or is explicitly cancelled.   | PAL 1.0 | Client Interaction |
| PAL-INTE-037 | The PAL Service SHALL provide a mechanism to allow a PAL Client to suppress notifications regarding certain PAL Client's Presence Aspect.                                  | PAL 1.0 | Client Interaction |
| PAL-INTE-038 | The PAL Service SHALL provide a mechanism to allow a PAL Client to suppress the action upon execution of Presence Triggers regarding certain PAL Client's Presence Aspect. | PAL 1.0 | Client Interaction |

**Table 7: High-level Functional Requirements - Client Interaction**

## 6.2.5 Context

This sub-clause provides PAL Enabler requirements associated with Presence Context.

| Label        | Description   | Release | Functional module |
|--------------|---|---------|-------------------|
| PAL-CTXT-001 | The PAL Enabler SHALL allow a presence aware service to specify a Presence Context.   | PAL 1.0 | Context           |
| PAL-CTXT-002 | The PAL Enabler SHALL be able to receive a Presence Context on behalf of a presence aware service.  | PAL 1.0 | Context           |
| PAL-CTXT-003 | The PAL Enabler SHALL provide a means to resolve a Presence Context corresponding to a presence aware service.  | PAL 1.0 | Context           |
|              | The Presence Context SHALL include a set of common predefined:  |         |                   |
| PAL-CTXT-004 | 1) Presence Aspects;  | PAL 1.0 | Context           |
| PAL-CTXT-005 | 2) Rules;   | PAL 1.0 | Context           |
| PAL-CTXT-006 | 3) Policies.  | PAL 1.0 | Context           |
| PAL-CTXT-007 | The PAL Enabler SHALL provide support for a policy resolution mechanism for processing logic of Presence Information applicable to a Presence Aspect.             | PAL 1.0 | Context           |
| PAL-CTXT-008 | A Presence Context MAY incorporate common predefined Presence Triggers, if detected changes to Presence Information relating to a Presence Aspect are applicable. | PAL 1.0 | Context           |

**Table 8: High-level Functional Requirements - Context**

## 6.2.6 Privacy and Security

This sub-clause specifies PAL Enabler requirements relating to privacy and security of information requested and processed by the PAL Service on behalf of PAL Clients. A PAL Service can for e.g., support and uphold the privacy and security of OMA Presence. Additionally, the PAL Service may support PAL specific privacy and security.



| Label       | Description   | Release | Functional module  |
|-------------|---|---------|--------------------|
| PAL-SEC-001 | The PAL enabler SHALL adhere to the OMA Presence Service privacy requirement when processing information on behalf of a Watcher, as described in [PRS_RD].            | PAL 1.0 | Privacy & Security |
| PAL-SEC-002 | The PAL enabler SHALL comply with OMA Presence Service security requirements in order to facilitate Watcher access to Presence Information, as described in [PRS_RD]. | PAL 1.0 | Privacy & Security |
| PAL-SEC-003 | The PAL Enabler SHALL be able to apply PAL Policy to further restrict Presence Information the Watcher is allowed to see.   | PAL 1.0 | Privacy & Security |
| PAL-SEC-004 | The PAL Enabler MAY use OMA GPM Enabler for privacy and security management puposes.  | PAL 1.0 | Privacy & Security |
| PAL-SEC-005 | The PAL Enabler SHALL provide a mechanism for Presence Aspects to adopt the most stringent privacy level associated with underlying Presence Information.             | PAL 1.0 | Privacy & Security |
| PAL-SEC-006 | The PAL Enabler SHALL provide a mechanism for Presence Aspects to adopt the most restrictive security level associated with underlying Presence Information.          | PAL 1.0 | Privacy & Security |

**Table 9: High-level Functional Requirements – Privacy and Security**

## 6.2.7 Provisioning and Administration

This sub-clause specifies PAL Enabler requirements relating to the management of the Presence Access Layer. For example, provisioning may include the ability to establish PAL Profiles for presence aware services. Further, it will allow support for reporting and charging on behalf of a Service Provider.

| Label        | Description  | Release | Functional module             |
|--------------|--|---------|-------------------------------|
|              | The PAL Enabler SHALL provide a mechanism for a PAL Client to perform the following operations to a Presence Aspect or a Presence Trigger: | PAL 1.0 |                               |
| PAL-PRAD-001 | 1) Retrieve;   | PAL 1.0 | Provisioning & Administration |
| PAL-PRAD-002 | 2) Create;   | PAL 1.0 | Provisioning & Administration |
| PAL-PRAD-003 | 3) Modify;   | PAL 1.0 | Provisioning & Administration |
| PAL-PRAD-004 | 4) Delete.   | PAL 1.0 | Provisioning & Administration |
| PAL-PRAD-005 | The PAL Enabler SHALL provide a mechanism with which a Service Provider is able to manage and administer a PAL Service.                    | PAL 1.0 | Provisioning & Administration |
|              | A Service Provider or PAL Administrator SHALL be able to perform the following operations:   |         |                               |

|              |  |         |                               |
|--------------|--|---------|-------------------------------|
| PAL-PRAD-006 | 1) Create a PAL Profile;   | PAL 1.0 | Provisioning & Administration |
| PAL-PRAD-007 | 2) Retrieve a PAL Profile;   | PAL 1.0 | Provisioning & Administration |
| PAL-PRAD-008 | 3) Modify a PAL Profile;   | PAL 1.0 | Provisioning & Administration |
| PAL-PRAD-009 | 4) Remove a PAL Profile.   | PAL 1.0 | Provisioning & Administration |
| PAL-PRAD-010 | The PAL Enabler SHALL support tracking and reporting of Presence Information for charging purposes.  | PAL 1.0 | Provisioning & Administration |
| PAL-PRAD-011 | The PAL Enabler SHALL support charging events related to consolidation and delivery of Presence Information in the form of Presence Aspects. | PAL 1.0 | Provisioning & Administration |
|              | The PAL Enabler SHALL support the following:   |         |                               |
| PAL-PRAD-012 | 1) Both online and offline charging;   | PAL 1.0 | Provisioning & Administration |
| PAL-PRAD-013 | 2) Pre-paid and post-paid charging;  | PAL 1.0 | Provisioning & Administration |
| PAL-PRAD-014 | 3) Transport/bearer level charging;  | PAL 1.0 | Provisioning & Administration |
| PAL-PRAD-015 | 4) PAL Subscription based charging.  | PAL 1.0 | Provisioning & Administration |

Table 10: High-level Functional Requirements – Provisioning and Administration

### 6.3 Overall System Requirements

| Label       | Description  | Release | Functional module           |
|-------------|--|---------|-----------------------------|
| PAL-SYS-001 | The PAL Enabler SHALL leverage existing technologies and specifications as far as possible to satisfy the requirements, such as protocols, data representations and encoding formats defined within OMA and by other standards bodies (e.g. OMA PUSH Enabler for notifications, OMA XDM Enabler for PAL Profiles).   | PAL 1.0 | Overall System Requirements |
| PAL-SYS-002 | The formalism to be used by the PAL Client to request and/or receive notifications from the PAL Server SHALL be independent of any particular transport protocol (i.e. it may be mapped to several transport protocols, such as SIP and HTTP).<br><br><b>Informational Note:</b> the mapping between PAL Client and PAL Server to one or more protocols is deferred to the AD and/or TS phase. | PAL 1.0 | Overall System Requirements |

Table 11: High-Level System Requirements

## Appendix A. Change History

(Informative)

### A.1 Approved Version History

| Reference | Date | Description                 |
|-----------|------|-----------------------------|
| n/a       | n/a  | No prior version within OMA |

### A.2 Draft/Candidate Version 1.0 History

| Document Identifier               | Date   | Sections   | Description   |
|-----------------------------------|--|--|---|
| Draft Versions<br>OMA-RD-PAL-V1_0 | 22 Oct 2008  | All  | PAL V1.0 RD baseline document according to OMA-PAG-2008-0676. |
|                                   | 12 Jan 2009  | 2  | Incorporated CRs:   |
|                                   |  | 3  | OMA-PAG-PAL-2008-0001R01-CR_PAL_V1_0_RD_AddModules            |
|                                   |  | 6  | OMA-PAG-PAL-2008-0003R01-CR_PAL_V1_0_RD_AddDefs               |
|                                   |  | B.1  | OMA-PAG-PAL-2008-0004R03-CR_PAL_V1_0_RD_ConsumingPRSInfo      |
|                                   |  |  | OMA-PAG-PAL-2008-0005-CR_PAL_V1_0_RD_PrivacyAndSecurity       |
|                                   |  | OMA-PAG-PAL-2008-0006R03-CR_PAL_V1_0_RD_PresenceTriggers   |   |
|                                   |  | OMA-PAG-PAL-2008-0007-CR_PAL_V1_0_RD_AddRefs               |   |
|                                   | 18 Feb 2009  | 2  | Incorporated CRs:   |
|                                   |  | 3  | OMA-PAG-PAL-2009-0002-CR_PAL_V1_0_FixAndAddRefs               |
| B.2                               |  | OMA-PAG-PAL-2009-0003-CR_PAL_V1_0_RD_AddDefinitions        |   |
| 6                                 |  | OMA-PAG-PAL-2009-0004-CR_PAL_V1_0_RD_RevisedUseCaseB2      |   |
| B.3                               |  | OMA-PAG-PAL-2009-0005R01-                                  |   |
| B.4                               |  | CR_PAL_V1_0_RD_General_Requirements                        |   |
|                                   |  | OMA-PAG-PAL-2009-0006-CR_PAL_V1_0_RD_ContextUseCase.zip    |   |
|                                   |  | OMA-PAG-PAL-2009-0007R01-                                  |   |
|                                   | CR_PAL_V1_0_RD_Context_Requirements                    |  |   |
|                                   | OMA-PAG-PAL-2009-0008R01-                              |  |   |
|                                   | CR_PAL_V1_0_RD_DeterminatePAUseCase                    |  |   |
|                                   | OMA-PAG-PAL-2009-0009R01-                              |  |   |
|                                   | CR_PAL_V1_0_RD_Interraction_Requirements               |  |   |
|                                   | OMA-PAG-PAL-2009-0010R01-                              |  |   |
|                                   | CR_PAL_V1_0_RD_Interworking_Requirements               |  |   |
| 26 Mar 2009                       | 1, 2, 3, 4   | Incorporated CRs:  |   |
|                                   |  | OMA-PAG-PAL-2009-0012-CR_PAL_V1_0_RD_AddScope              |   |
|                                   |  | OMA-PAG-PAL-2009-0013-CR_PAL_V1_0_RD_AddIntroduction       |   |
|                                   |  | OMA-PAG-PAL-2009-0014-CR_PAL_V1_0_RD_MoreDefinitions       |   |
| 27 Mar 2009                       | All  | General editorial clean-up by DSO                          |   |
| 15 Apr 2009                       | 6.2.5  | OMA-PAG-PAL-2009-0015R01-                                  |   |
|                                   | 6.2.7  | CR_PAL_V1_0_RD_Interoperability_Requirements               |   |
|                                   | 6.2.11   | OMA-PAG-PAL-2009-0018R01-                                  |   |
|                                   | 6.2.9  | CR_PAL_RD_Requirements_for_ClientInt.zip                   |   |
|                                   | 2.1  | OMA-PAG-PAL-2009-0019R01-                                  |   |
|                                   | 6.2.1  | CR_PAL_RD_Requirements_for_Interworking                    |   |
|                                   | 6.2.6  | OMA-PAG-PAL-2009-0020R01-                                  |   |
|                                   | CR_PAL_RD_Requirements_for_Security_and_Privacy        |  |   |
| 24 Apr 2009                       | 3.2  | OMA-PAG-PAL-2009-0017R04-                                  |   |
|                                   | 3.3  | CR_PAL_V1_0_RD_Additional_ClientInt_Requirements           |   |
|                                   | 6.2  | OMA-PAG-PAL-2009-0021R01-                                  |   |
|                                   | 6.2.5  | CR_PAL_V1_0_RD_Interop_Requirements                        |   |
|                                   | 6.2.7  | OMA-PAG-PAL-2009-0022R02-CR_PAL_V1_0_RD_Miscellaneous_Defs |   |
|                                   | 6.2.10   | OMA-PAG-PAL-2009-0023R02-                                  |   |
|                                   | 6.2.11   | CR_PAL_V1_0_RD_MoreClientInt_Requirements                  |   |
|                                   |  | OMA-PAG-PAL-2009-0024-                                     |   |
|                                   |  | CR_PAL_V1_0_RD_MoreHighLevelFunc_Requirements              |   |
|                                   |  | OMA-PAG-PAL-2009-0026R01-                                  |   |
|                                   |  | CR_PAL_V1_0_RD_ProvAndAdmin_Requirements                   |   |
|                                   | OMA-PAG-PAL-2009-0027R02-                              |  |   |
|                                   | CR_PAL_V1_0_RD_MorePrivSecurity_Requirements           |  |   |
|                                   | OMA-PAG-PAL-2009-0029R01-CR_PAL_RD_suppression_support |  |   |

| Document Identifier | Date                                 | Sections   | Description   |
|---------------------|--------------------------------------|--|---|
|                     | 26 Jun 2009                          | 6.2.5<br>6.3<br><br>4<br>3.2<br>6<br>6.2.7<br>Appendix B<br>6.2.4<br>6.2.7<br>6.2.4<br>6.2.1.2<br>3.2, 5 | OMA-PAG-PAL-2009-0034R01-CR_PAL_V1_0_RD_Resolution_Proposal_for_Informal_Review_Comment<br><br>OMA-PAG-PAL-2009-0036-CR_PAL_V1_0_RDRR_A002<br>OMA-PAG-PAL-2009-0035R01-CR_PAL_V1_0_RDRR_A001<br>OMA-PAG-PAL-2009-0038-CR_PAL_V1_0_RDRR_A004<br>OMA-PAG-PAL-2009-0039R01-CR_PAL_V1_0_RDRR_A008<br>OMA-PAG-PAL-2009-0040-CR_PAL_V1_0_RDRR_A012<br>OMA-PAG-PAL-2009-0042R02-CR_PAL_1.0_RDRR_A007_A010_A011<br>OMA-PAG-PAL-2009-0043R02-CR_PAL_1.0_RDRR_A009<br>OMA-PAG-PAL-2009-0051R01-CR_PAL_V1_0_RDRR_A005<br>OMA-PAG-PAL-2009-0053-CR_PAL_V1_0_RDRR_A013<br>OMA-PAG-PAL-2009-0037R01-CR_PAL_V1_0_RDRR_A003 |
|                     | 01 Jul 2009                          | 5  | Editorial correction Figure 1   |
|                     | 07 Jul 2009                          | 2.1, 2.2<br>6.2.1, 6.2.2<br>Appendix C   | Fully implemente OMA-PAG-PAL-2009-0034R01-CR_PAL_V1_0_RD_Resolution_Proposal_for_Informal_Review_Comment<br>Editorial correction  |
|                     | Candidate Version<br>OMA-RD-PAL-V1_0 | 28 Jul 2009  | n/a   |

## Appendix B. Use Cases (Informative)

The use cases described herein are intended to illustrate the main usage of the PAL Enabler and to facilitate a better and clearer understanding of PAL Enabler requirements. The described use cases are not an exhaustive list of possible use cases for the PAL Enabler.

### B.1 Consuming specific presence information.

This use case demonstrates how PAL may be used to expose specific presence information in the form of Presence Aspects to provide determinate and consistent presence information on behalf of clients utilizing a presence aware service.

#### B.1.1 Short Description

Alice, and Bob are users of an Instant Message (IM) service known as 'MyFriendlyChat' on their wireless devices and have previously invited/added one another to their mobile devices MyFriendly Chat buddy list.

Alice is returning to her college after a day of classes and considers inviting Bob to join her for dinner. Alice uses her mobile device and invokes the MyFriendly Chat service. Alice then opens her buddy list and sees that Bob is willing to chat. She types in a quick message to invite Bob to dinner. Bob receives an audible 'alert' on his mobile, and proceeds to check his device and views Alice's message. He replies (via MyFriendly Chat) that he would be happy to join her for dinner, and will meet her in the college reception area.

#### B.1.2 Market benefits

A PAL Client such as that running on Alice's mobile device is no longer required to compute whether Bob is willing based on raw presence information provided by an OMA Presence Service. A PAL Presence Aspect based on the presentity's willingness indicator is exposed on behalf of the MyFriendly Chat service. This Presence Aspect allows software vendors to rapidly create presence capable mobile client software.

A reduction in resources required to transport and process presence information, will increase adoption rates of presence aware services (e.g. MyFriendly Chat) by service providers. This will result in increased average revenue per user (ARPU) through the creation of new and inventive mobile services on behalf of subscribers.

### B.2 Presence information for parental monitoring.

This use case details how PAL provides a Presence Trigger based on detected changes in presence information from mobile devices originating within a local or remote network.

#### B.2.1 Short Description

Anthony and Josephine are father and daughter, and subscribers of XYZ Wireless. Anthony subscribes to a mobile monitoring service known as 'Parental-Alert' which is used to monitor activities and/or location of his daughter based on presence information, including tagged location reported by Josephine's device. Anthony invokes Parental-Alert to monitor the status of Josephine while she is out with friends (e.g. Josephine is 'at home', 'at the mall', 'studying', etc.). When a PAL Presence Trigger detects a change (e.g. a detected change in Josephine's 'activity' information element) a corresponding action is executed by PAL on behalf of a Watcher. For example, Anthony's mobile device receives an audible alert signifying Josephine is in distress and needs assistance.

##### B.2.1.1 Alternate Flow

This use case may be expanded to function through a remote network. For example, if Josephine were to begin attending college the following year in a different country, it would be highly desirable for her father, Anthony, to continue monitoring the state of his daughter. Anthony may wish to receive a 'parental alert' in the form of a Presence Trigger on behalf of his daughter, when she returns to her college dormitory, or experiences an emergency.

#### B.2.2 Market benefits

A PAL Client provides Presence Triggers, which allow a presence aware service (i.e. Parental-Alert) manifested on the mobile device to receive simple asynchronous notifications relating to a detected state-change. Further, PAL exposes

consistent and interoperable Presence Triggers (e.g. 'on-activity-update') such that a presence aware service can continue to function properly, regardless of where the Watcher or Presentity mobile devices are currently roaming.

## **B.3 Presence Context associated with a presence aware service.**

This use case details how a presence aware service is associated, and benefits from a Presence Context.

### **B.3.1 Short Description**

XYZ Wireless deploys two wireless presence aware services within its network: a wireless IM service known as 'MIMO' (from M-Wire Inc.), and a PoC service (i.e. 'P-Talk' - from Airborne Software Inc.). As part of service initiation within XYZ's network, both IM and PoC service's their unique Presence Context through a PAL Service. The PAL Service resolves, based on service identity, applicable Presence Context including interoperable Presence Aspects, rules, and policy values. Presence Triggers may also be specified as part of Presence Context. That is, Presence Context specifies a presence environment within the PAL Enabler, corresponding to a presence aware service for the consumption of Presence Information. For example, MIMO makes use of Presence Aspect 'willingness' while P-Talk requires Presence Aspect 'contactable' in order to fulfil subscriber contact functionality within XYZ's mobile network.

### **B.3.2 Market benefits**

Presence Context reduces complexity on behalf of a presence aware service, by narrowing the set of interoperable Presence Aspects, rules, policy values and Presence Triggers required by a presence aware service. This permits third-party software vendors (e.g. M-Wire Inc.) to rapidly introduce presence aware services on behalf of service providers such as XYZ Wireless. Further, a network service provider will increase their average revenue per user (ARPU) based on new service offerings towards mobile subscribers and increased customer satisfaction.

## **B.4 Resolve indeterminate presence indicators.**

This use case details how a Watcher is able to obtain determinate Presence Aspect indicators through a PAL Service, in situations where the corresponding Presence Information for a Presentity is incomplete or inconclusive.

### **B.4.1 Short Description**

Alice and Bob are users of the PoC-Alert service from XYZ Wireless. As a subscriber to XYZ Wireless, Alice and Bob reflect their presence status through XYZ's OMA compliant Presence Service in the role of presentities. Alice and Bob are also subscribed to each others Presence Information. Alice starts the PoC-Alert client on her device and scans the list of 'available' contacts to initiate a PoC-Alert message toward Bob. Bob, has not published any presence status to the Presence Service, relating to the PoC-Alert service. Alice is authorized to receive Bob's Presence Information. Fortunately, XYZ Wireless also deploys a PAL Service within its network infrastructure. The PAL Service has an associated Presence Context configured to operate on behalf of the PoC-Alert service with a policy. Alice is able to select Bob as an 'available' contact for the purposes of sending him a PoC-Alert message.

### **B.4.2 Market benefits**

Rules and policy within the PAL Enabler is applied on a per-service basis, as part of Presence Context, in order to specify processing logic of Presence Information. PAL rules and policy benefit presence aware services, as clients are able to receive consistent and determinate Presence Aspect indicators even in scenarios Presence Information provided by a Presentity may be missing, or indeterminate.