



# **Presence Access Layer XDM Specification**

## **Candidate Version 1.0 – 17 Aug 2010**

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**Open Mobile Alliance**  
OMA-TS-PAL\_XDM-V1\_0-20100817-C

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# 1. Scope

This specification defines the Application Usage for the Presence Access Layer (PAL) document. The PAL document is a common definition that can be used by all OMA Enablers (e.g. MobAd, and NGSI) as a mechanism for establishing a Presence Context on behalf of a PAL Client for a given Presence Aware Service.

## 2. References

### 2.1 Normative References

#### OMA

- [OMNA\_SVC] Open Mobile Naming Authority <service-description> Registry, Open Mobile Alliance™,  
URL: <http://www.openmobilealliance.org/Tech/omna/omna-prs-PidfSvcDesc-registry.aspx>
- [PAL\_AD] “Presence Access Layer Architecture”, Version 1.0, Open Mobile Alliance™, OMA-AD-PAL-V1\_0,  
URL: <http://www.openmobilealliance.org/>
- [PAL\_DDS] “Presence Access Layer Data Specification”, Version 1.0, Open Mobile Alliance™, OMA-DDS-PAL\_Data\_Ext-V1\_0,  
URL: <http://www.openmobilealliance.org/>
- [PAL\_RD] “Presence Access Layer Requirements”, Version 1.0, Open Mobile Alliance™, OMA-RD-PAL-V1\_0,  
URL: <http://www.openmobilealliance.org/>
- [SCRRULES] “SCR Rules and Procedures”, Open Mobile Alliance™, OMA-ORG-SCR\_Rules\_and\_Procedures,  
URL: <http://www.openmobilealliance.org/>
- [XDM\_Core] “XML Document Management (XDM) Specification”, Version 2.0, Open Mobile Alliance™, OMA-TS-XDM\_Core-V2\_0,  
URL: <http://www.openmobilealliance.org/>
- [XSD\_palProfile] “XML Schema Definition: XDM PAL Profile”, Version 1.0, Open Mobile Alliance™, OMA-SUP-XSD\_xdm\_palProfile-V1\_0,  
URL: <http://www.openmobilealliance.org/>

#### IETF

- [RFC2119] “Key words for use in RFCs to Indicate Requirement Levels”, S. Bradner, March 1997,  
URL: <http://www.ietf.org/rfc/rfc2119.txt>
- [RFC3986] “Uniform Resource Identifier (URI): Generic Syntax”, T. Berners-Lee, Jan 2005,  
URL: <http://www.ietf.org/rfc/rfc3986.txt>
- [RFC4825] “The Extensible Markup Language (XML) Configuration Access protocol (XCAP)”, J. Rosenberg, May 2007,  
URL: <http://www.ietf.org/rfc/rfc4825.txt>

### 2.2 Informative References

- [OMADICT] “Dictionary for OMA Specifications”, Version x.y, Open Mobile Alliance™, OMA-ORG-Dictionary-Vx\_y,  
URL: <http://www.openmobilealliance.org/>
- [XDM\_AD] “XML Document Management Architecture”, Version 2.0. Open Mobile Alliance™. OMA-AD-XDM-V2\_1,  
URL: <http://www.openmobilealliance.org/>
- [XDM\_RD] “XML Document Management Requirements”, Version 2.0, Open Mobile Alliance™, OMA-RD-XDM-V2\_1,  
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>Application Unique ID</b>   | Use definition from [XDM_Core].   |
| <b>Application Usage</b>       | Use definition from [XDM_Core].   |
| <b>Class of Service</b>        | Use definition from [PAL_AD].   |
| <b>Enabler</b>                 | Use definition from [OMADICT].  |
| <b>Global Document</b>         | Use definition from [XDM_Core].   |
| <b>Global Tree</b>             | Use definition from [XDM_Core].   |
| <b>PAL Client</b>              | Use definition from [PAL_RD].   |
| <b>PAL Presence Parameters</b> | Use definition from [PAL_RD].   |
| <b>PAL Profile</b>             | Use definition from [PAL_RD].   |
| <b>PAL Profile Document</b>    | An XDM Document containing PAL Profiles.  |
| <b>PAL Rules</b>               | Use definition from [PAL_RD].   |
| <b>PAL Server</b>              | Use definition from [PAL_RD].   |
| <b>Presence Aspect</b>         | Use definition from [PAL_RD].   |
| <b>Presence Aware Service</b>  | Use definition from [PAL_RD].   |
| <b>Presence Context</b>        | Use definition from [PAL_RD].   |
| <b>Presence Trigger</b>        | Use definition from [PAL_RD].   |
| <b>Primary Principal</b>       | Use definition from [XDM_Core].   |
| <b>Principal</b>               | Use definition from [XDM_Core].   |
| <b>Service XUI</b>             | Use definition from [PAL_AD].   |
| <b>Users Tree</b>              | Use definition from [XDM_Core].   |
| <b>XDM Document</b>            | Use definition from [XDM_RD].   |
| <b>XDM Resource</b>            | Use definition from [XDM_Core].   |
| <b>XCAP Root</b>               | Use definition from [XDM_Core].   |
| <b>XCAP Root URI</b>           | Use definition from [XDM_Core].   |
| <b>XCAP Server</b>             | Use definition from [XDM_Core].   |
| <b>XCAP URI</b>                | Use definition from [XDM_Core].   |
| <b>XCAP User Identifier</b>    | Use definition from [XDM_Core].   |
| <b>XDM Agent</b>               | A trusted XDMC as described in [XDM_AD] section “ <i>XDM Functional Entities</i> ”. |

### 3.3 Abbreviations

|              |                                       |
|--------------|---------------------------------------|
| <b>3GPP</b>  | 3rd Generation Partnership Project    |
| <b>AUID</b>  | Application Unique ID                 |
| <b>HTTP</b>  | Hypertext Transfer Protocol           |
| <b>IETF</b>  | Internet Engineering Task Force       |
| <b>OMA</b>   | Open Mobile Alliance                  |
| <b>PAL</b>   | Presence Access Layer                 |
| <b>IM</b>    | Instant Messaging                     |
| <b>MIME</b>  | Multipurpose Internet Mail Extensions |
| <b>MobAd</b> | Mobile Advertising                    |
| <b>NGSI</b>  | Next Generation Service Interface     |
| <b>OMA</b>   | Open Mobile Alliance                  |
| <b>OMNA</b>  | Open Mobile Naming Authority          |
| <b>SCR</b>   | Static Conformance Requirement        |
| <b>URI</b>   | Uniform Resource Identifier           |
| <b>URL</b>   | Uniform Resource Locator              |
| <b>XCAP</b>  | XML Configuration Access Protocol     |
| <b>XDM</b>   | XML Document Management               |
| <b>XDMS</b>  | XDM Server                            |
| <b>XML</b>   | eXtensible Markup Language            |
| <b>XSD</b>   | XML Schema Definition                 |
| <b>XUI</b>   | XCAP User Identifier                  |

## 4. Introduction

This specification, which is a part of the Presence Access Layer Enabler, describes a single document:

- The PAL Profile is a set of PAL Presence Parameters associated with a given Presence Aware Service, which serves as the basis for establishing a Presence Context on behalf of one or more PAL Clients.

### 4.1 Version 1.0

PAL XDM version 1.0 establishes an Application Usage for a PAL Profile Document. This includes defining the structure and data semantics associated with a PAL Profile. The Application Usage described herein provides the basis for XDM Documents to be stored, retrieved and manipulated within the PAL XDMS as described in [PAL\_AD], section “*PAL Functional Components & Interfaces, PAL XDMS*”.



## 5. PAL XDM Application Usages

### 5.1 PAL Profile

This section specifies a mandatory Application Usage for the PAL XDMS.

#### 5.1.1 Structure

The PAL Profile Document SHALL conform to the structure described in this subclause and the schema definition as detailed in section 5.1.3 “XML Schema”, below.

The PAL Profile Document SHALL contain a <service-profile> root element.

The <service-profile> element:

- a) SHALL include a <pal-presence-params> element which defines a PAL Presence Parameter template.

The <pal-presence-params> element:

1. SHALL include an “id” attribute that represents a service identifier as detailed in section 5.1.7 “Data Semantics”;
  2. MAY include a “name” attribute which specifies a human readable PAL Profile name;
  3. SHALL include an <aspects> element which contains a list of one or more Presence Aspects associated with the Presence Aware Service. A Presence Aspect <aspect> element SHALL include:
    - i. A <value-type> element which specifies a fully qualified Presence Aspect return value data type; and
    - ii. A <pa-rule-ref> element which provides a URI-reference to the PAL Rule definition corresponding to the associated Presence Aspect.
  4. MAY include a <rule-set> element which contain a list of zero or more PAL Rules associated with a Presence Aware Service. If a PAL Rule is defined, the associated <rule> element SHALL include:
    - i. A <rule-name> element which specifies a fully qualified PAL Rule name; and exactly one of either:
      1. A <code-snippet> element which provides an in-line PAL Rule definition; or
      2. A <code-ref> element which provides a URI-reference to the PAL Rule definition.
  5. MAY include a <triggers> element which contains a list of zero or more Presence Triggers associated with the Presence Aware Service. If a Presence Trigger is defined, the associated <trigger> element SHALL include:
    - i. A <predef-action-ref> element which provides a URI-reference to the PAL Rule definition corresponding to the pre-defined action; and
    - ii. A <pt-rule-def> element which provides a URI-reference to the PAL Rule definition corresponding to the associated Presence Trigger.
  6. MAY include any other attribute for the purposes of extensibility; and
  7. MAY include any other elements from any other namespaces for the purposes of extensibility.
- b) SHALL include a “uri” attribute that uniquely identifies a Presence Aware Service or Class of Service as detailed in section 5.1.7 “Data Semantics”; and

- c) MAY include any other attribute for the purposes of extensibility.

NOTE: PAL Presence Parameters are as specified in [PAL\_DDS].

## 5.1.2 Application Unique ID

The AUID SHALL be defined as “org.openmobilealliance.pal-profile”.

## 5.1.3 XML Schema

The “pal-profile” XML document SHALL be composed according to the XML schema described in [XSD\_palProfile].

## 5.1.4 Default Namespace

The default namespace used in expanding URIs SHALL be “urn:oma:xml:xdm:pal-profile” as defined in section 5.1.3 “XML Schema”.

## 5.1.5 MIME Type

The MIME type for the PAL Profile Document SHALL be “application/vnd.oma.pal-profile+xml”.

## 5.1.6 Validation constraints

The PAL Profile Document SHALL conform to the XML Schema detailed in section 5.1.3 “XML Schema”.

## 5.1.7 Data Semantics

The value of the “uri” attribute of the <service-profile> element SHALL consist of a Service XUI and corresponds to the Document URI for the PAL Profile Document.

The value of the “id” attribute in a <pal-presence-params> element SHALL represent service identifiers of valid Presence Aware Services or Class of Services (e.g. service identifiers registered as part of the OMNA Presence <service-description> Registry described in [OMNA\_SVC]).

The information contained within a <service-profile> root element SHALL be sufficient for a PAL Server to establish Presence Context on behalf of a PAL Client (i.e. to support a PAL Server in providing a proper perspective of Presence Information associated with a given Presence Aware Service or Class of Service).

## 5.1.8 Naming conventions

The name of a PAL Profile Document SHALL be “pal-profile”.

## 5.1.9 Global documents

This Application Usage defines no Global Documents.

## 5.1.10 Resource interdependencies

This Application Usage defines no additional resource interdependencies.

## 5.1.11 Authorization policies

The authorization policies for manipulating a PAL Profile SHALL conform to those described in [XDM\_Core] section “Authorization””, with the following exceptions:

1. Service Provider SHALL be the only Principal to have permission to perform mutative operations (i.e. create, modify, delete) on any PAL Profile Document in the Users Tree;

2. Principals SHALL have permission to perform retrieve operations of any PAL Profile Document in the Users Tree;
3. Principals SHALL have permission to perform subscribing to changes operations of any PAL Profile Document in the Users Tree.

### **5.1.12 Search capabilities**

Not applicable.

## 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 1.0 History

| Document Identifier                      | Date         | Sections       | Description   |
|--|--------------|----------------|---|
| Draft Versions<br>OMA-TS-PAL_XDM-V1_0    | 27 Aug 2009  | n/a            | TS skeleton based on OMA-Template-Spec-20090101-I   |
|  | 26 Nov 2009  | All            | Incorporated CRs:<br>OMA-PAG-PAL-2009-0086R01,<br>OMA-PAG-PAL-2009-0087R01,<br>OMA-PAG-PAL-2009-0088R01   |
|  | 09 Dec 2009  | 1, 4, App C.   | Incorporated CRs:<br>OMA-PAG-PAL-2009-0085R02,<br>OMA-PAG-PAL-2009-0089R02  |
|  | 02 Mar 2010  | 2.1, App A.    | Formatting of hyperlinks and history box  |
|  | 16 Mar 2010  | 2.2, 3.2, 5    | Incorporated CR:<br>OMA-MWG-PRS-2010-0034R01, plus minor edits: <ul style="list-style-type: none"> <li>Added informative reference to XDM V2.1 RD for specific definition;</li> <li>Applied changes for broken inter-document sub-section references (identical to the edit made in OMA-MWG-PRS-2010-0034R01).</li> </ul>                                       |
|  | 30 Mar 2010  | 2.1,3.2,App C. | Incorporated CR:<br>OMA-COM-PRS-2010-0038 and minor edits to errors in this table.  |
|  | 27 May 2010  | All            | Incorporated CRs:<br>OMA-COM-PRS-2010-0069R01,<br>OMA-COM-PRS-2010-0070R03,<br>OMA-COM-PRS-2010-0071R02, and edits including: <ul style="list-style-type: none"> <li>Adding hyperlinks where missing;</li> <li>Adjusted structure (not content) to match more closely pal-profile XML Schema (it did not align);</li> <li>Miscellaneous minor edits.</li> </ul> |
|  | 31 May 2010  | All            | Changed hyperlinks into cross-references<br>Language set to English UK  |
|  | 23 June 2010 | All            | Incorporated CRs:<br>OMA-COM-PRS-2010-0079R01, and minor edits including: <ul style="list-style-type: none"> <li>Downgrade XDM from V2.1 to V2.0;</li> <li>Make definition of 'XDM Agent' consistent with PAL-TS;</li> <li>Added abbreviation for SCR;</li> <li>Update TOC; and</li> <li>Minor editorials.</li> </ul>   |
|  | 15 Jul 2010  | All            | Editorial clean up  |
| Candidate Version<br>OMA-TS-PAL_XDM-V1_0 | 17 Aug 2010  | N/A            | Status changed to Candidate by TP:<br>TP ref# OMA-TP-2010-0333-<br>INP_PAL_V1_0_ERP_and_ETR_for_Candidate_approval  |

## Appendix B. Static Conformance Requirements (Normative)

The notation used in this appendix is specified in [SCRRULES].

The SCR's defined in the following tables include SCR for:

- PAL Profile XDM Application Usages.

### B.1 PAL Profile XDM Application Usages (XDMS)

| Item                       | Function  | Reference | Requirement                     |
|----------------------------|---|-----------|---------------------------------|
| XDM_PALProfile-XOP-S-001-M | Support PAL Profile Structure                                 | 5.1.1     | PAL-CTX-001-M AND PAL-CTX-002-M |
| XDM_PALProfile-XOP-S-002-M | Support Application Unique ID in PAL Profile                  | 5.1.2     |                                 |
| XDM_PALProfile-XOP-S-003-M | Support XML schema of PAL Profile                             | 5.1.3     |                                 |
| XDM_PALProfile-XOP-S-004-M | PAL Profile conforms to MIME type                             | 5.1.5     |                                 |
| XDM_PALProfile-XOP-S-005-M | Support validation constraints, in addition to the XML schema | 5.1.6     |                                 |
| XDM_PALProfile-XOP-S-006-M | Support data semantics of PAL Profile                         | 5.1.7     |                                 |
| XDM_PALProfile-XOP-S-007-M | Support naming conventions for PAL Profile                    | 5.1.8     |                                 |
| XDM_PALProfile-XOP-S-008-M | Authorization policies  | 5.1.11    |                                 |

### B.2 PAL Profile XDM Application Usages (XDM Agent)

| Item                       | Function   | Reference | Requirement   |
|----------------------------|--|-----------|---|
| XDM_PALProfile-XOP-A-001-O | Support PAL Profile Application Usage                        | 5.1       | XDM_PALProfile-XOP-A-002-O AND XDM_PALProfile-XOP-A-003-O AND XDM_PALProfile-XOP-A-004-O AND XDM_PALProfile-XOP-A-005-O AND XDM_PALProfile-XOP-A-006-O AND XDM_PALProfile-XOP-A-007-O AND |
| XDM_PALProfile-XOP-A-002-O | Support PAL Profile structure                                | 5.1.1     | XDM_Core-XOP-A-003-M AND XDM_PALProfile-XOP-A-001-O   |
| XDM_PALProfile-XOP-A-003-O | Support Application Unique ID in PAL Profile                 | 5.1.2     | XDM_PALProfile-XOP-A-001-O  |
| XDM_PALProfile-XOP-A-004-O | Support XML schema of PAL Profile                            | 5.1.3     | XDM_PALProfile-XOP-A-001-O  |
| XDM_PALProfile-XOP-A-005-O | PAL Profile conforms to MIME type                            | 5.1.5     | XDM_PALProfile-XOP-A-001-O  |
| XDM_PALProfile-XOP-A-006-O | Support validation constraints in addition to the XML schema | 5.1.6     | XDM_PALProfile-XOP-A-001-O  |
| XDM_PALProfile-XOP-A-007-O | Support data semantics of PAL Profile                        | 5.1.7     | XDM_PALProfile-XOP-A-001-O  |

| Item                       | Function                                   | Reference | Requirement                |
|----------------------------|--|-----------|----------------------------|
| XDM_PALProfile-XOP-A-008-O | Support naming conventions for PAL Profile | 5.1.8     | XDM_PALProfile-XOP-A-001-O |

## Appendix C. Examples

(Informative)

### C.1 Structure of a PAL Profile Document

The following example provides a sample PAL Profile Document of the Presence Aware Service MyFriendlyChat (i.e. Service XUI "sip:friendlychat@example.com").

```
<?xml version="1.0"?>
<pl:service-profile uri="sip:friendlychat@example.com"
  xmlns:pl="urn:oma:xml:xdm:pal-profile:1.0"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <pl:pal-presence-params id="org.openmobilealliance:IM-session">
    <pl:rule-set name="IM_RuleSet" id="http://www.example.com/friendlychat/rule-set/pa-base">
      <pl:rule id="oma:prs:pal:rule:findServicePresInfo">
        <pl:rule-name>findRelevantServicePresInfo</pl:rule-name>
        <pl:code-ref>/rule#findServicePresInfo</pl:code-ref>
      </pl:rule>
      <pl:rule id="oma:prs:pal:rule:hasOptedInForService">
        <pl:rule-name>hasOptedInForService</pl:rule-name>
        <pl:code-ref>/rule#hasOptedInForService</pl:code-ref>
      </pl:rule>
      <pl:rule id="oma:prs:pal:rule:isAvailable">
        <pl:rule-name>rule:isAvailable</pl:rule-name>
        <pl:code-ref>/rule#isAvailable</pl:code-ref>
      </pl:rule>
      <pl:rule id="oma:prs:pal:rule:ptAvailability">
        <pl:rule-name>rule:ptAvailability</pl:rule-name>
        <pl:code-ref>/rule#ptAvailability</pl:code-ref>
      </pl:rule>
      <pl:rule id="oma:prs:pal:rule:actionAsyncNotify">
        <pl:rule-name>rule:actionAsyncNotify</pl:rule-name>
        <pl:code-ref>/rule#actionAsyncNotify</pl:code-ref>
      </pl:rule>
    </pl:rule-set>
    <pl:aspects name="IM_Aspects" id="http://www.example.com/friendlychat/pa-aspects">
      <pl:aspect id="oma:prs:pal:aspect:optIn">
        <pl:value-type>xsd:String</pl:value-type>
        <pl:pa-rule-ref>oma:prs:pal:rule:hasOptedInForService</pl:pa-rule-ref>
      </pl:aspect>
      <pl:aspect id="oma:prs:pal:aspect:available">
        <pl:value-type>xsd:boolean</pl:value-type>
        <pl:pa-rule-ref>oma:prs:pal:rule:isAvailable</pl:pa-rule-ref>
      </pl:aspect>
    </pl:aspects>
    <pl:triggers name="IM_Triggers" id="http://www.example.com/friendlychat/pa-triggers">
      <pl:trigger id="oma:prs:pal:triggers:onAvailable">
        <pl:predef-action-ref>oma:prs:rule:actionAsyncNotify</pl:predef-action-ref>
        <pl:pt-rule-ref>oma:prs:pal:rule:ptAvailability</pl:pt-rule-ref>
      </pl:trigger>
      <pl:trigger id="oma:prs:pal:triggers:onUnavailable">
        <pl:predef-action-ref>oma:prs:rule:actionAsyncNotify</pl:predef-action-ref>
        <pl:pt-rule-ref>oma:prs:pal:rule:ptAvailability</pl:pt-rule-ref>
      </pl:trigger>
    </pl:triggers>
  </pl:pal-presence-params>
</pl:service-profile>
```