



# Presence SIMPLE Data Extensions Requirements

Approved Version 1.0 – 29 Sep 2009

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**Open Mobile Alliance**  
OMA-RD-Presence\_Data\_Ext-V1\_0-20090929-A

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# 1. Scope

**(Informative)**

This document contains use cases and requirements for the OMA Presence SIMPLE Data Extensions (PDE) Enabler, taking into consideration the demands of end-users, service providers, and system implementers. The PDE describes Presence Information Elements for the OMA Presence SIMPLE Enabler.

## 2. References

### 2.1 Normative References

- [**PRS\_ERP-V1\_1**] “OMA Presence SIMPLE”, Version 1.1, Open Mobile Alliance™, OMA-ERP-Presence\_SIMPLE-V1\_1,  
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/>
- [**RFC2119**] “Key words for use in RFCs to Indicate Requirement Levels”, S. Bradner, March 1997,  
URL: <http://www.ietf.org/rfc/rfc2119.txt>
- [**RFC2778**] “A Model for Presence and Instant Messaging”, M. Day et al., February 2000,  
URL: <http://www.ietf.org/rfc/rfc2778.txt>

### 2.2 Informative References

- [**PRS\_DDS-V1\_0**] “Presence SIMPLE Data Specification”, Version 1.0, Open Mobile Alliance™, OMA-DDS-Presence\_SIMPLE-V1\_0,  
URL: <http://www.openmobilealliance.org/>
- [**PRS\_RD-V1\_1**] “Presence SIMPLE Requirements”, Version 1.1, Open Mobile Alliance™, OMA-RD-Presence\_SIMPLE-V1\_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-specific</b>	A qualifier that designates a Presence Information 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).
<b>Application-specific Availability</b>	<p>“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”.</p> <p>NOTE: this is mostly unrelated to whether the user is willing or not to accept this particular type of communication. The Application-specific Availability can also be supplied by various network elements.</p>
<b>Application-specific Willingness</b>	Indicates whether the user is willing to accept communications of this type. If the Application-specific Availability is set to “Not Available” this Presence Information Element has no relevance. The value of this Presence Information Element may be overridden by the Overriding Subscriber Willingness Presence Information Element (see Overriding Subscriber Willingness definition).
<b>Communication Address</b>	Consists of Communication Means and Contact Address. (Source: [RFC2778])
<b>Communication Means</b>	Use definition from [PRS_RD].
<b>Contact Address</b>	A specific point of contact via some Communication Means. When using an instant message service, the Contact Address is an instant inbox address. (Source: [RFC2778])
<b>Overriding Willingness</b>	The Overriding Willingness provides an indication, set by an end user, that takes precedence over the Application-specific Willingness settings. For example, when an Overriding Willingness indication is present, a positive setting indicates that the user is willing to accept communications for all available communication types, while a negative setting indicates that the user is not willing to accept any communication.
<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>Presentity</b>	Use definition from [PRS_RD].
<b>Watcher</b>	Use definition from [PRS_RD].

### 3.3 Abbreviations

<b>3GPP</b>	3 <sup>rd</sup> Generation Partnership Project
<b>3GPP2</b>	3 <sup>rd</sup> Generation Partnership Project 2
<b>DND</b>	Do Not Disturb
<b>GML</b>	Geography Markup Language
<b>GMT</b>	Greenwich Mean Time

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<b>GPRS</b>	General Packet Radio Service
<b>IANA</b>	Internet Assigned Numbers Authority
<b>ID</b>	Identifier
<b>IETF</b>	Internet Engineering Task Force
<b>IM</b>	Instant Messaging
<b>IMEI</b>	International Mobile Equipment Identifier
<b>IMPS</b>	Instant Messaging and Presence Service
<b>IP</b>	Internet Protocol
<b>IMS</b>	IP Multimedia Subsystem
<b>MEID</b>	Mobile Equipment Identifier
<b>MIME</b>	Multipurpose Internet Mail Extension
<b>MLP</b>	Mobile Location Protocol
<b>MMD</b>	Multimedia Domain
<b>MMS</b>	Multimedia Messaging Service
<b>OMA</b>	Open Mobile Alliance
<b>PC</b>	Personal Computer
<b>PDE</b>	OMA Presence SIMPLE Data Extensions
<b>PIDF</b>	Presence Information Data Format
<b>PoC</b>	Push-to-Talk over Cellular
<b>SIMPLE</b>	SIP for Instant Messaging and Presence Leveraging Extensions
<b>SIP</b>	Session Initiation Protocol
<b>SMS</b>	Short Message Service
<b>UMTS</b>	Universal Mobile Telecommunications System
<b>URI</b>	Uniform Resource Identifier
<b>VoIP</b>	Voice over IP

## 4. Introduction

**(Informative)**

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 pertain to specific types of Presence Information content.

[PRS\_RD-V1\_1] defines use cases and requirements for a base set of Presence Information. This document includes further use case and requirements for additional Presence Information.



## 5. Presence SIMPLE Data Extensions Reference Release description (Informative)

The OMA Presence SIMPLE enabler release [PRS\_ERP-V1\_1] includes definitions of the mapping of Presence Information to the presence data model components and also to specific elements of PIDF or one of its IETF extensions in [PRS\_DDS-V1\_0]. In case such a mapping is not possible because elements with similar semantics have not been defined in IETF, then OMA-specific extensions to PIDF are defined.

This Reference Release defines further Presence Information extensions and their mapping to the presence data model components and PIDF extensions either defined in IETF or OMA.

## 6. Requirements (Normative)

### 6.1 Modularisation

Functional modularisation for this Reference Release is not necessary.

### 6.2 High-Level Functional Requirements

#### 6.2.1 General

Label	Description	Enabler Release
GEN-001	The Presence Service SHALL specify the Presence Information Elements in such a way that they can be used consistently and without ambiguity across multiple enablers.	[PRS_ERP-V1_1]
GEN-002	The Presence Service SHALL allow other enablers to define new Presence Information Elements that are Application-specific.	[PRS_ERP-V1_1]
	The Presence Service (in some cases together with the corresponding OMA enablers) SHALL support at least the following commonly known Communication Means:	
GEN-003	1) OMA PoC;	[PRS_ERP-V1_1]
GEN-004	2) IM (at a minimum OMA IMPS and OMA SIMPLE IM);	PDE 1.0
GEN-005	3) SMS;	PDE 1.0
GEN-006	4) MMS;	PDE 1.0
GEN-007	5) E-mail;	PDE 1.0
GEN-008	6) OMA Gaming Service;	Future release
GEN-009	7) Circuit-Switched audio call;	PDE 1.0
GEN-010	8) Circuit-Switched video call;	PDE 1.0
GEN-011	9) SIP based VoIP call;	PDE 1.0
GEN-012	10) SIP based video call.	PDE 1.0

**Table 1: General Requirements**

#### 6.2.2 Presence Information Content

Label	Description	Enabler Release
PINFO-CONT-001	Presence Information relating to a particular Presentity SHALL be segmented into zero or more Presence Information Elements.	[PRS_ERP-V1_1]
	A standard format and information semantics (including values where applicable) SHALL be defined for the following common information:	
PINFO-CONT-002	1. Means whereby Presence Information Elements may be associated with a time at which the Presence Information Element should be considered valid.	[PRS_ERP-V1_1] Solution extended to further Presence Information Elements in PDE 1.0
PINFO-CONT-003	2. Means whereby a Watcher may be informed of free text that augments the current state of an associated element pertaining to a particular Presentity.	[PRS_ERP-V1_1]
	3. Communication Willingness Information	

PINFO-CONT-004	i. Application-specific Willingness (e.g. willing for PoC, not willing for IM etc);	[PRS_ERP-V1_1]
PINFO-CONT-005	ii. Overriding Willingness (e.g. willing, not willing);	[PRS_ERP-V1_1]
PINFO-CONT-006	4. Application-specific Availability Information (e.g. registered with the PoC service);	[PRS_ERP-V1_1]
PINFO-CONT-007	5. Application-specific media capabilities information (e.g. video support in PoC service);	PDE 1.0
	6. Device status	
PINFO-CONT-008	i. Network availability information (e.g. the device is attached or registered to a particular network such as 3GPP IMS/3GPP2 MMD, UMTS, GPRS; out-of-coverage, etc.);	[PRS_ERP-V1_1]
PINFO-CONT-009	ii. Home or visited network (the device is attached or registered to the network where the user's services are executed);	PDE 1.0
PINFO-CONT-010	iii. Visited network information;	Deleted
PINFO-CONT-011	7. Communication Address (e.g. email address, phone number, etc.);	[PRS_ERP-V1_1]
	8. Location information (e.g. device-derived location, network-derived location, etc.)	
PINFO-CONT-012	i. GML format for location information;	[PRS_ERP-V1_1]
PINFO-CONT-013	ii. MLP format for location information;	Future release
	9. Device capabilities information	
PINFO-CONT-014	i. Supported codecs (e.g. H.263 or H.264 video, etc.);	Future release
PINFO-CONT-015	ii. Bearer capabilities (e.g. UMTS, GPRS, etc.);	PDE 1.0
PINFO-CONT-016	iii. Device identifiers (e.g. IMEI, MEID, etc.) used to derive device characteristics;	Future release
PINFO-CONT-017	10. Time-zone (e.g. GMT, etc.);	[PRS_ERP-V1_1]
	11. Personal information	
PINFO-CONT-018	i. Activity (e.g. in a meeting, at the movies, on the phone etc.);	[PRS_ERP-V1_1]
PINFO-CONT-019	ii. Textual location (e.g. at home, at work, at the supermarket, etc.);	[PRS_ERP-V1_1]
PINFO-CONT-020	iii. Mood (e.g. textual: happy, angry, sad, etc. or picture: smiley face, frowning face, etc.);	[PRS_ERP-V1_1]
PINFO-CONT-021	iv. Preferred language (e.g. English, Spanish etc);	Future release
PINFO-CONT-022	v. Icon (e.g. a status icon of the Presentity's choice);	[PRS_ERP-V1_1]
	12. Network presence	
PINFO-CONT-023	i. Network status (e.g. network up / network down);	Future release
PINFO-CONT-024	ii. Maximum bandwidth available;	Future release
PINFO-CONT-025	iii. Device IDs attached to network;	Future release

PINFO-CONT-026	iv. Service ID/Type being delivered by network;	Future release
PINFO-CONT-027	v. Network ID;	Future release
	13. Application information	
PINFO-CONT-028	i. Music (e.g. artist, composer, length, source, title, etc.);	Future release
PINFO-CONT-029	ii. Video (e.g. author, cast, program, description, duration, etc.);	Future release
PINFO-CONT-030	iii. Game (e.g. name, level, server_address, etc.);	Future release
PINFO-CONT-031	iv. Web page (e.g. description, keywords, title, URI etc.);	Future release
PINFO-CONT-032	v. E-book (e.g. name, author, etc.);	Future release
	14. Application-specific session information	
PINFO-CONT-033	i. Whether the Presentity is involved in at least one session of a specific service;	[PRS_ERP-V1_1]
PINFO-CONT-034	ii. Additional information on the application-specific session that the Presentity is participating (e.g., session description, session identifier), only if those information is allowed to be shared per the privacy restriction of the corresponding application-specific session;	Future release
PINFO-CONT-035	iii. Whether the Presentity accepts an incoming session invitation for a specific service in automatic or manual manner.	PDE 1.0
	15. General meta data associated with content indirectly referenced by a Presence Information Element	
PINFO-CONT-036	i. Content type;	PDE 1.0
PINFO-CONT-037	ii. Content file size;	PDE 1.0
PINFO-CONT-038	iii. Version information (e.g. Etag value);	PDE 1.0
	16. Meta data associated with image and video content indirectly referenced by a Presence Information Element	
PINFO-CONT-039	i. Resolution;	PDE 1.0
PINFO-CONT-040	17. Preferred service information (i.e. the information that indicates the Presentity's preference to be contacted using a particular service relative to other services).	[PRS_ERP-V1_1]

Table 2: Presence Information Content Requirements

### 6.2.3 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.	[PRS_ERP-V1_1]
PINFO-FOR-002	Presence Information SHALL be represented using a standard format, for the purpose of exchanging Presence Information.	[PRS_ERP-V1_1]

PINFO-FOR-003	The Presence Information format SHALL comply with standard IETF formats, where relevant.	[PRS_ERP-V1_1]
PINFO-FOR-004	The Presence Information format SHALL be registered with IANA as a MIME-type.	[PRS_ERP-V1_1]
PINFO-FOR-005	The Presence Information format SHOULD use a standard mark-up language.	[PRS_ERP-V1_1]
PINFO-FOR-006	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.	[PRS_ERP-V1_1]
PINFO-FOR-007	The Presence Information format SHALL provide the means to uniquely identify a Presence Information Element.	[PRS_ERP-V1_1]
PINFO-FOR-008	The Presence Information format SHALL provide the means to associate a Presence Information Element with an expiration date.	[PRS_ERP-V1_1]
PINFO-FOR-009	It SHOULD be possible to extend the Presence Information format, without affecting previously defined aspects.	[PRS_ERP-V1_1]
PINFO-FOR-010	The Presence Information format SHALL support multiple character sets.	[PRS_ERP-V1_1]
PINFO-FOR-011	The Presence Information format SHALL include a way to identify the Presentity to which it pertains.	[PRS_ERP-V1_1]
PINFO-FOR-012	The Presence Information format SHOULD include a way to include Presence Information indirectly (e.g. by providing a link to a different location)	[PRS_ERP-V1_1]

**Table 3: Presence Information Format Requirements**

## Appendix A. Change History

(Informative)

### A.1 Approved Version History

Reference	Date	Description
Approved Version OMA-RD-Presence_Data_Ext-V1_0	29 Sep 2009	Status changed to Approved by TP TP ref# OMA-TP-2009-0436- INP_PDE_V1.0_Reference_Release_for_notification_and_Final_Approval

## Appendix B. Use Cases (Informative)

### B.1 Single Service, Dual Device

#### B.1.1 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 Information is being published by the user, the device, and the network.

##### B.1.1.1 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 Information of Alice
- Instant Messaging 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 Information relating to the device or the user.
- Presence Server – Resides in the network

##### B.1.1.2 Actor Specific Issues

Alice

- Is able to receive the same Instant Messaging 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 Instant Messaging service irrespective of the device and network being used.

Presence Server

- Presence Information 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 Information relevant to the Instant Messaging 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 Information when Alice is capable of communicating via Instant Messaging service.

Instant Messaging Application

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

### **B.1.1.3 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 Messaging Application

- Can determine from the Presence Information, provided by the network and the device, as to whether an Instant Messaging 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.

### **B.1.1.4 Pre-conditions**

- Alice and Bob are provisioned to use the Presence Service.
- Alice and Bob are provisioned with an Instant Messaging service that is capable of using the Presence Service.
- The Presence Network Agent is able to determine the status of the network to which the devices are attached to.
- The Presence Network Agent is able to determine the maximum bandwidth available to the devices attached to the network.
- Alice can be logged into the Instant Messaging service on more than one device with the same account.
- Alice has given authorization for Bob to see her Presence Information.
- The Instant Messaging service is capable of the additional multimedia capabilities.
- The Instant Messaging service has the ability to determine from the Presence Information to which device the Instant Message 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.

### **B.1.1.5 Post-conditions**

- Bob can request a multimedia conversation with Alice and rely on the application to use the network Presence Information and device Presence Information 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 Instant Messaging Application based on prior knowledge that Alice can only accept a multimedia call when she is using her PC connected to the broadband connection.

#### **B.1.1.6 Normal Flow**

- Alice invokes her Instant Messaging Application on her mobile device.
- Bob sees that Alice is available for Instant Messaging session so Bob initiates the Instant Messaging session with Alice and exchanges text messages with her.
- Alice in parallel invokes her Instant Messaging Application on her PC.
- Bob sees that Alice has now available additional multimedia capabilities so Bob initiates a new session with Alice on her PC to also allow exchange of images and video.

#### **B.1.1.7 Market Benefits**

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 Information, or a Watcher using the network and device Presence Information to determine how they wish to communicate with the other party.

## **B.2 Presence Information**

See [PRS\_RD-V1\_1] “*P2P, Presence Information*”.

## **B.3 User Setting Presence**

See [PRS\_RD-V1\_1] “*P2P, User Setting Presence*”.

## **B.4 Set Global Do-Not-Disturb (DND)**

See [PRS\_RD-V1\_1] “*Set Global Do-Not-Disturb (DND)*”.

## **B.5 Reset Global DND**

See [PRS\_RD-V1\_1] “*Reset Global DND*”.

## **B.6 Global DND with Interactions**

See [PRS\_RD-V1\_1] “*Global DND with Interactions*”.