Presence SIMPLE Data Extensions Requirements

Candidate Version 1.0 – 16 Sep 2008

Open Mobile Alliance
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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

Application-specific	Use definition from [PRS_RD].
Application-specific Availability	Use definition from [PRS_RD].
Application-specific Willingness	Use definition from [PRS_RD].
Communication Address	Consists of Communication Means and Contact Address. (Source: [RFC2778])
Communication Means	Use definition from [PRS_RD].
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. (Source: [RFC2778])
Overriding Willingness	Use definition from [PRS_RD].
Presence Information	Use definition from [PRS_RD].
Presence Information Element	Use definition from [PRS_RD].
Presence Service	Use definition from [PRS_RD].
Presentity	Use definition from [PRS_RD].
Watcher	Use definition from [PRS_RD].

3.3 Abbreviations

3GPP	3rd Generation Partnership Project
3GPP2	3rd Generation Partnership Project 2
DND	Do Not Disturb
GML	Geography Markup Language
GMT	Greenwich Mean Time
GPRS	General Packet Radio Service
IANA	Internet Assigned Numbers Authority
IETF	Internet Engineering Task Force
IM	Instant Messaging
IMEI	International Mobile Equipment Identifier
IMPS	Instant Messaging and Presence Service
IP	Internet Protocol
IMS	IP Multimedia Subsystem

MEID	Mobile Equipment Identifier
MIME	Multipurpose Internet Mail Extension
MLP	Mobile Location Protocol
MMD	Multimedia Domain
MMS	Multimedia Messaging Service
OMA	Open Mobile Alliance
PC	Personal Computer
PDE	OMA Presence SIMPLE Data Extensions
PIDF	Presence Information Data Format
PoC	Push-to-Talk over Cellular
SIMPLE	SIP for Instant Messaging and Presence Leveraging Extensions
SIP	Session Initiation Protocol
SMS	Short Message Service
UMTS	Universal Mobile Telecommunications System
URI	Uniform Resource Identifier
VoIP	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;	PDE 1.0
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 Voice over IP (VoIP).	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.	PDE 1.0
	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
PINFO-CONT-008	6. Network availability information (e.g. the phone is attached or registered to the defined network such as 3GPP IMS or 3GPP2 MMD, out-of-coverage, etc.);	[PRS_ERP-V1_1]
	7. Roaming information	
PINFO-CONT-009	i. Is roaming (e.g. home or visited network);	PDE 1.0
PINFO-CONT-010	ii. Visited network information;	PDE 1.0
PINFO-CONT-011	8. Communication Address (e.g. email address, phone number, etc.);	[PRS_ERP-V1_1]
	9. 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
	10. Client device capabilities information	
PINFO-CONT-014	i. Application capabilities (e.g. voice, text, H.263 or H.264 video, multimedia, etc.);	PDE 1.0
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;	PDE 1.0
PINFO-CONT-017	11. Time-zone (e.g. GMT, etc.);	[PRS_ERP-V1_1]
	12. 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);	PDE 1.0
PINFO-CONT-022	v. Icon (e.g. a status icon of the Presentity's choice);	[PRS_ERP-V1_1]
	13. Network presence	
PINFO-CONT-023	i. Network status (e.g. network up / network down);	PDE 1.0
PINFO-CONT-024	ii. Maximum bandwidth available;	PDE 1.0
PINFO-CONT-025	iii. Device IDs attached to network;	PDE 1.0

PINFO-CONT-026	iv. Service ID/Type being delivered by network;	PDE 1.0
PINFO-CONT-027	v. Network ID;	PDE 1.0
	14. Application information	
PINFO-CONT-028	i. Music (e.g. artist, composer, length, source, title, etc.);	PDE 1.0
PINFO-CONT-029	ii. Video (e.g. author, cast, program, description, duration, etc.);	PDE 1.0
PINFO-CONT-030	iii. Game (e.g. name, level, server_address, etc.);	PDE 1.0
PINFO-CONT-031	iv. Web page (e.g. description, keywords, title, URI etc.);	PDE 1.0
PINFO-CONT-032	v. E-book (e.g. name, author, etc.);	PDE 1.0
	15. 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;	PDE 1.0
PINFO-CONT-035	iii. Whether the Presentity accepts an incoming session invitation for a specific service in automatic or manual manner.	PDE 1.0
PINFO-CONT-036	16. Version information associated with content indirectly referenced by a Presence Information Element (e.g. Etag value).	PDE 1.0
PINFO-CONT-037	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)	PDE 1.0

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
n/a	n/a	No prior version –or- No previous version within OMA

A.2   Draft/Candidate Version 1.0 History

Document Identifier	Date	Sections	Description
Draft Version OMA-RD-Presence_Data_Ext-V1_0	23 Aug 2007	All	Baseline version based on doc # OMA-PAG-2007-0584R01-INP_RD_Presence_Data_Extensions
	04 Sep 2007	All	Minor editorial clean-up
	14 Feb 2008	3, 5	Incorporated CRs: OMA-PAG-2008-0018R01 OMA-PAG-2008-0020R03
	01 Apr 2008	All	Incorporated CRs: OMA-PAG-2008-0068 OMA-PAG-2008-0094R02 OMA-PAG-2008-0171R02
	10 Apr 2008	6	Incorporated CR: OMA-PAG-2008-0173R01
	29 Apr 2008	All	Incorporated CR: OMA-PAG-2008-0277
	30 Jun 2008	1 2 3.1 3.2 3.3 4 5 6.2.1 6.2.2 6.2.3 6.2.4 B.1 B.2 B.3	Incorporated CRs: OMA-PAG-2008-0412R04 OMA-PAG-2008-0425R03 OMA-PAG-2008-0428 OMA-PAG-2008-0429R01 OMA-PAG-2008-0430 OMA-PAG-2008-0431 OMA-PAG-2008-0433R01 OMA-PAG-2008-0434R02 OMA-PAG-2008-0435R02 OMA-PAG-2008-0436R01 OMA-PAG-2008-0437 OMA-PAG-2008-0458R03 OMA-PAG-2008-0460R03 OMA-PAG-2008-0465R02 OMA-PAG-2008-0472R02
Candidate Version OMA-RD-Presence_Data_Ext-V1_0	16 Sep 2008	n/a	Status changed to Candidate by TP (2008-09-03 to 2008-09-16) TP ref # OMA-TP-2008-0328R01-INP_PDE_V1.0_RD_for_Candidate_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*".