Presence SIMPLE Data Specification

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Open Mobile Alliance

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This document describes the presence data model used by the Presence SIMPLE enabler, and provides presence information element definitions.

2. References

2.1 Normative References

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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.

This is an informative document, which is not intended to provide testable requirements to implementations.

3.2 Definitions

Application-specific	Use definition from [PDE_RD].
Application-specific Availability	Use definition from [PDE_RD].
Application-specific Willingness	Use definition from [PDE_RD].
Communication Address	Use definition from [PDE_RD].
Overriding Willingness	Use definition from [PDE_RD].
Presence Information	Use definition from [PRS_RD].
Presence Information Element	Use definition from [PRS_RD].
Presence Source	Use definition from [PRS_RD].
Presentity	Use definition from [PRS_RD].
Subscription Content Rules	Use definition from [PRS_AD].
Watcher	Use definition from [PRS_RD].

3.3 Abbreviations

3GPP	3rd Generation Partnership Project
CDMA	Code Division Multiple Access
CS	Circuit Switched
GIF	Graphic Interchange Format
GPRS	General Packet Radio Service
GSM	Global System for Mobile communications
IANA	Internet Assigned Numbers Authority
IETF	Internet Engineering Task Force
IM	Instant Messaging
IMPS	Instant Messaging and Presence Service
IMS	IP Multimedia Subsystem
IP-CAN	IP-Connectivity Access Network
JPEG	Joint Photographic Experts Group
MIME	Multipurpose Internet Mail Extensions

MMS	Multimedia Messaging Service
OMA	Open Mobile Alliance
OMNA	Open Mobile Naming Authority
PAG	Presence and Availability Group
PDA	Personal Digital Assistant
PIDF	Presence Information Data Format
PNG	Portable Network Graphics
PoC	Push-to-talk over Cellular
PS	Presence Server
RPID	Rich Presence Information Data Format
SDP	Session Description Protocol
SIMPLE	SIP Instant Messaging and Presence Leveraging Extensions
SIP	Session Initiation Protocol
SMS	Short Message Service
URI	Uniform Resource Identifier
URN	Uniform Resource Name
VoIP	Voice over Internet Protocol
WG	Working Group
XML	eXtensible Markup Language

4. Introduction

This specification describes the mapping of Presence Information to the presence data model components described in section 6.1, and also to specific elements of PIDF ([RFC3863]) or one of its extensions (e.g. RPID [RFC4480], Location Types [RFC4589], geographical location object [RFC4119], etc). 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.

5. Justification

Void.

6. General

6.1   Presence Data Model

The presence data model as defined in [RFC4479] is categorized in four key components: the Presentity URI, the "person", the "service" and the "device":

- The Presentity's URI component indicates the Presentity's identifier (SIP URI, tel URI or pres URI);

- The "person" components model the information about the Presentity;

- The "service" components model the forms of communication used by the Presentity;

- The "device" components model the physical pieces of equipment used by the Presentity.

The relationship between the data elements is according to the following scheme:
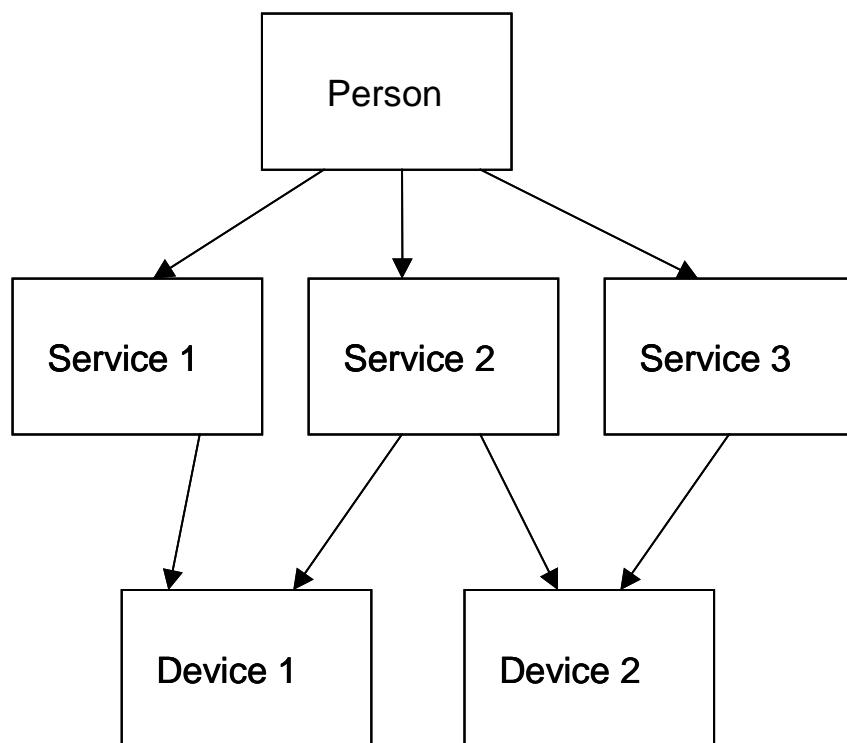
Figure 1: Relationship between the elements of the Presence Data Model

Each of these data elements models Presence Information (i.e. Presence attributes) that provides a description about a form of communication, a Presentity, or piece of equipment.

6.1.1   Person

The "person" component models information about the Presentity whom the presence data is trying to describe. Examples of Presence Information that can be represented by the "person" component are the activity that the Presentity is involved in, his/her overall willingness for any kind of communication, his/her physical appearance and mood.

The model supports only one "person" component per Presentity; nevertheless this does not preclude representing a group which appears to the Watcher as a single Presentity. However there may be cases where more than one "person" component instance exists in the presence document, in cases where composition policy in the PS cannot clearly and semantically

differentiate between the multiple instances of the same component. In that case the conflict is resolved as described in section 6.2.

The "person" component SHALL be mapped to the <person> element. The <person> element is specified in [RFC4479].

> NOTE: The mandatory "id" attribute of the <person> element serves no other purpose than to syntactically distinguish between multiple instances of the element in a presence document.

6.1.2   Service

The "service" components model the forms of communication that the Presentity potentially has access to. Examples of Presence Information that can be represented by the "service" components are the Presentity's willingness to communicate with PoC or IM, and the availability of SMS service in his/her terminal.

One other important characteristic of each "service" might be the devices on which that service executes. Each device is uniquely identified by the device identifier <deviceID> defined in [RFC4479]. A service may contain zero or more <deviceID> elements to indicate which devices that service is available on. The presence document may contain information on each device, but this is a separate part of the document modeled by the "device" component described in the next section.

The "service" component (defined in [RFC4479]) SHALL be mapped to the <tuple> element. The <tuple> element is specified in [RFC3863].

> NOTE: The mandatory "id" attribute of the <tuple> element serves no other purpose than to syntactically distinguish between multiple instances of the element in a presence document.

6.1.2.1   Service Identification

Services MAY be uniquely identified in one of the following manner:

- using the <service-description> element (defined in section 7.4.2.1); or

- using the URI scheme of the URI in the <contact> element, assuming that the specific URI scheme uniquely identifies the service.

Alternatively, services that cannot be uniquely identified as above MAY have their service characteristics described in the following manner:

- using the URI scheme of the URI in the <contact> element and using the Application-specific Media Capabilities building block as specified in section 7.3; or

- using the <service-description> element together with the Application-specific Media Capabilities building block.

6.1.3   Device

The "device" components model the physical piece of equipment in which services execute. Examples of Presence Information that can be represented by "device" elements include mobile phones, PCs and PDAs. As the same services may execute in multiple devices (e.g. IM running in the home PC and the mobile phone), the mapping of services to devices are many to many. Devices are uniquely identified with a device identifier. The model supports only one "device" component per device identifier, however the Presence Sources publish their own "device" component instances. The PS composes the multiple instances into one component and resolves conflicts among the Presence Sources.

The "device" component SHALL be mapped to the <device> element. The <device> element is specified in [RFC4479].

> NOTE: The mandatory "id" attribute of the <device> element serves no other purpose than to syntactically distinguish between multiple instances of the element in a presence document.

For a given Presentity, the value of the <deviceID> element of the <device> element SHALL be unique for each device used by the Presentity. In case that multiple Presence Sources exist on a device, the Presence Sources SHALL ensure that irrespective of how many network access means are available in the device only one unique device identifier is used for presence publication.

A version 4 UUID as defined in [RFC4122] SHALL be used for <deviceID> to uniquely identify the device. This is a purely random identifier, providing uniqueness. As this pseudo-random used for <deviceID> is supposed to uniquely identify the particular device, it SHALL NOT change over the lifetime of the device and SHALL be stored in a non-volatile memory. It SHALL be used in all the presence publications requiring the use of <deviceID>.

6.2 Default Watcher Processing

This section describes the default Watcher processing rules for received Presence Information.

If the Watcher receives more than one <tuple> element in the presence document including:

- <contact> elements (defined in [RFC3863]) with the same values;
- <service-description> elements (defined in section 7.4.2.1), if present, with identical <service-id> and <version> elements; and
- other conflicting child elements (i.e. elements with same names but different values or attributes),

then the Watcher SHALL select the child element with the latest <timestamp> element (defined in [RFC3863]) from the conflicting elements and SHALL ignore the remainder of the conflicting child elements from <tuple> elements. A <tuple> element without a <timestamp> element corresponds with a <tuple> element with the oldest <timestamp> element during comparison. For the case when either the "from" or the "until" attributes, as defined in [RFC4480] and section 7.21, are the cause of conflict, the Watcher SHALL keep all the elements including conflicting "from" or "until" attributes in the aggregated <tuple> element.

　　NOTE 1:　Particular <tuple> child elements might specify a different behaviour than the default.

If the Watcher recognizes more than one "person" component in the presence document with conflicting child elements (i.e. elements with same names but different values or attributes), the Watcher SHALL select the conflicting child element from the <person> element with the latest <timestamp> element as defined in [RFC4479] and SHALL ignore the remainder of the conflicting child elements from <person> elements. A <person> element without a <timestamp> element corresponds with a <person> element with the oldest <timestamp> element during comparison. For the case when either the "from" or the "until" attributes, as defined in [RFC4480] and section 7.21 are the cause of conflict, the Watcher SHALL keep all the elements including conflicting "from" or "until" attributes in the aggregated <person> element.

　　NOTE 2:　Particular <person> child elements might specify a different behaviour than the default.

A Watcher SHALL be able to interpret any application-specific subset of the elements listed in section 7 using the semantics described therein. The Watcher MAY support other PIDF extensions to interpret elements whose semantics do not match with those defined in section 7, as long as a Watcher that does not understand those extensions can ignore them without changing the Watcher's interpretation of the Presence Information Elements that are understood.

7. Presence Information Element Definitions

This section includes PIDF extension packages to the presence data model described in section 6.1. New extension packages are created based on Input Contributions reviewed and agreed by the OMA PAG WG. A template for creating such Input Contributions is available from Appendix D.

7.1   Activity

7.1.1   Presence Information Element Semantics

7.1.1.1   Description

The "Activity" building block is an enumeration of activity-describing elements or free text provided by the Presentity indicating his/her/its current activity(ies).

7.1.1.2   Mapping to Presence Data Model

The "Activity" is part of the "person" component according to the presence data model.

7.1.1.3   Mapping to PIDF

The "Activity" building block SHALL be mapped to <activities> element defined in [RFC4480].

7.1.1.4   Watcher Processing

The default Watcher processing rules described in section 6.2 do not apply for this element.

Should more than one "activities" element be present in different <person> elements within a presence document, the Watcher SHALL consider the activities of the Presentity to be the aggregate of all <activities> elements. Duplicates SHALL be ignored.

7.1.1.5   Limitations

None.

7.2   Application-specific Availability

7.2.1   Presence Information Element Semantics

7.2.1.1   Description

The "Application-specific Availability" indicates whether it is possible to receive an incoming communication request using the specified service and device (if specified). For example, if a Presentity is provisioned with the PoC Service, within coverage, has an appropriate handset, etc., he would be available for PoC, whereas if any of those were not true, he would be "Not Available".

7.2.1.2   Mapping to Presence Data Model

The "Application-specific Availability" is part of the "service" component according to the presence data model.

7.2.1.3   Mapping to PIDF

The "Application-specific Availability" building block SHALL be mapped to PIDF as follows:

- <tuple>→ <status>→ <basic>→ open/closed. The "Application-specific Availability" building block MAY also be mapped to <registration-state> and <barring-state>, if the information for creating these elements is available; and

- service identification, as specified in section 6.1.2.1.

The <registration-state> and <barring-state> elements are defined in section 7.2.2.2 and 7.2.2.2.

NOTE: The semantics of the <registration-state> and <barring-state> elements are service specific. A particular service should further define the meaning of these elements in the scope of the service.

7.2.1.4   Watcher Processing

Watcher processing SHALL be performed as described in section 6.2.

7.2.1.5   Limitations

None.

7.2.2   PIDF Extension Elements

7.2.2.1   <barring-state>

The <barring-state> element is an extension to PIDF that is used to contain the Presentity's barring state pertaining to a particular service. The <barring-state> element, if present, SHALL be used as a child element of the <tuple> element defined in [RFC3863].

NOTE: this element is only useful for those services which have the option to block incoming or outgoing communication.

The <barring-state> element SHALL include either

a) the value "active" indicating that the Presentity has activated communication barring pertaining to a specific service; or

b) the value "terminated" indicating that the Presentity has deactivated communication barring pertaining to a specific service.

7.2.2.2   <registration-state>

The <registration-state> element is an extension to PIDF that is used to contain the Presentity's registration state pertaining to a particular service. The <registration-state> element, if present, SHALL be used as a child element of the <tuple> element defined in [RFC3863].

The <registration-state> element SHALL include either

a) the value "active" indicating that the Presentity has an active registration with a specific service; or

b) the value "terminated" indicating that the Presentity does not have an active registration with a specific service.

7.2.3   XML Schema

The XML schema for the PIDF extension elements is defined in [XSD_pidfOMA].

7.3   Application-specific Media Capabilities

7.3.1   Presence Information Element Semantics

7.3.1.1   Description

The "Application-specific Media Capabilities" indicates the supported media capabilities by the communication service.

7.3.1.2   Mapping to Presence Data Model

The "Application-specific Media Capabilities" building block is part of the "service" component according to the presence data model.

7.3.1.3   Mapping to PIDF

The "Application-specific Media Capabilities" building block SHALL be mapped to PIDF as follows:

- <tuple>→ <servcaps>; and

- service identification, as specified in section 6.1.2.1.

The <servcaps> element is defined in [RFC5196].

7.3.1.4   Watcher Processing

Watcher processing SHALL be performed as described in section 6.2.

7.3.1.5   Limitations

None.

7.4   Application-specific Willingness

7.4.1   Presence Information Element Semantics

7.4.1.1   Description

The "Application-specific Willingness" indicates whether the user of the specified communication service desires to receive incoming communication requests for the specified application and device (if specified).

7.4.1.2   Mapping to Presence Data Model

The "Application-specific Willingness" is a part of "service" information according to the presence data model.

7.4.1.3   Mapping to PIDF

The "Application-specific Willingness" building block SHALL be mapped to PIDF as follows:

- <tuple>→ <willingness>→ <basic>→ open/closed; and

- service identification, as specified in section 6.1.2.1.

The <willingness> element is defined in section 7.4.2.2.

7.4.1.4   Watcher Processing

Watcher processing SHALL be performed as described in section 6.2.

If the "Overriding Willingness" element exists, then the value of that element SHALL be used and the value of the "Application-specific Willingness" SHALL be ignored.

If none of the two elements exist, then it should be concluded that it is not known whether the user of this communication service desires or not to receive incoming requests.

The semantics of the deduced "willingness" for a Watcher are the same, regardless if "application-specific" or "overriding" willingness was used by the Presentity.

7.4.1.5   Limitations

None.

7.4.2   PIDF Extension Elements

7.4.2.1   <service-description>

The <service-description> element is an extension to PIDF that is used to describe Presence aware services. The <service-description> element SHALL be used as a child element of the <tuple> element defined in [RFC3863].

The <service-description> element:

   a) SHALL contain a <service-id> element that identifies the service. This element SHALL contain a unique string value consisting of a reverse domain name, e.g. "org.openmobilealliance:PoC-session";

   b) SHALL contain a <version> element that defines the version of the service. This element SHOULD contain a string value in the form of "x.y" where "x" is the major version and "y" is the minor version of the particular service; and

   c) MAY contain a <description> element. If present, it SHALL contain a string value providing additional informative description of the service.

The OMNA Presence <service-description> Registry is available from [OMNA_pidfSvcDesc]. This registry maintains <service-id> element string values for all OMA specified Presence aware services. These string values start with "org.openmobilealliance".

NOTE: Other standards developing organizations making use of the <service-description> element are also recommended to register with OMNA <service-id> element string values related to their Presence aware services being specified.

7.4.2.2   <willingness>

The <willingness> element is an extension to PIDF that is used to describe the "Application-specific willingness" building block. The <willingness> element SHALL be used as a child element of the <tuple> element defined in [RFC3863].

The <willingness> element SHALL include the <basic> element which has two values "open" or "closed" indicating willingness for communication.

7.4.3   XML Schema

The XML schema for the PIDF extension elements is defined in [XSD_pidfOMA].

7.5   Class

7.5.1   Presence Information Element Semantics

7.5.1.1   Description

The "Class" building block indicates the class of the service, device or person. Multiple elements can have the same class name within a presence document. The naming of classes is left to the Presentity. The Presentity can use this information to group similar services, devices or person elements or to convey information that the PS can use for filtering or authorization.

7.5.1.2   Mapping to Presence Data Model

The "Class" is a part of "service" and/or "device" and/or "person" information according to the presence data model.

7.5.1.3   Mapping to PIDF

The "Class" building block SHALL be mapped to <class> element defined in [RFC4480].

7.5.1.4 Watcher Processing

Watcher processing SHALL be performed as described in section 6.2.

7.5.1.5 Limitations

None.

7.6 Communication Address

7.6.1 Presence Information Element Semantics

7.6.1.1 Description

The value of this element is the URI used to invoke the specific service of the Presentity (e.g. SIP URI for a PoC service). When defining a new "service description type" for a new service, the precise semantics of what it means to "invoke the service" SHALL be defined.

7.6.1.2 Mapping to Presence Data Model

The "Communication Address" is part of the "service" component according to the presence data model.

7.6.1.3 Mapping to PIDF

The "Communication Address" building block SHALL be mapped to PIDF as follows: <tuple>→ <contact>

7.6.1.4 Watcher Processing

Watcher processing SHALL be performed as described in section 6.2.

7.6.1.5 Limitations

None.

7.7 Geographical Location

7.7.1 Presence Information Element Semantics

7.7.1.1 Description

The "Geographical Location" building block indicates the Presentity's or the device's geographical location.

7.7.1.2 Mapping to Presence Data Model

The "Geographical Location" is part of the "person" and/or "device" components according to the presence data model.

7.7.1.3 Mapping to PIDF

The "Geographical Location" building block SHALL be mapped to PIDF as follows: <person> -> <geopriv> -> <location-info> and <person> -> <geopriv> -> <usage-rules>> and/or <device> -> <geopriv> -> <location-info> and <device> -> <geopriv> -> <usage-rules>. The <geopriv>, <location-info> and <usage-rules> elements are defined in [RFC4119] and updated by [RFC5139] and [RFC5491].

7.7.1.4 Watcher Processing

Watcher processing SHALL be performed as described in section 6.2.

7.7.1.5   Limitations

None.

7.8   Icon

7.8.1   Presence Information Element Semantics

7.8.1.1   Description

The "Icon" building block provides a small image that the Presentity may choose, such that the Watcher's terminal can use this information to represent the Presentity in a graphical user interface.

Presentities SHOULD provide images of sizes and aspect ratios that are appropriate for mobile devices.

The "Icon" SHALL be expressed in one of the following image formats: JPEG, PNG and GIF, as described in [3GPP-TS_26.141] and [3GPP2-C.S0045].

7.8.1.2   Mapping to Presence Data Model

The "Icon" is part of the"person" and/or "service" component according to the presence data model.

7.8.1.3   Mapping to PIDF

The "Icon" building block SHALL be mapped to <status-icon> element defined in [RFC4480]. In addition to [RFC4480], the <status-icon> element MAY include the attributes "contenttype", "fsize" and "resolution" defined in section 7.14.2. If the <status-icon> element is used to reference Presence Information in Presence Content XDMS [PRS_ContentXDM], the attribute "etag" defined in section 7.14.2.2 SHALL be included.

7.8.1.4   Watcher Processing

Watcher processing SHALL be performed as described in section 6.2, except for the case when the <status-icon> element has a "from" or "until" attribute. In that case, should more than one "Icon" element be present in different <person> or <tuple> elements within a presence document, the Watcher SHALL consider the icon of the Presentity to be the aggregate of all <status-icon> elements. Duplicates SHALL be ignored.

7.8.1.4.1   Limitations

None.

7.9   Mood

7.9.1   Presence Information Element Semantics

7.9.1.1   Description

The "Mood" building block is an enumeration of mood-describing elements or free text indicating the Presentity's mood.

7.9.1.2   Mapping to Presence Data Model

The "Mood" is a part of "person" component according to the presence data model.

7.9.1.3   Mapping to PIDF

The "Mood" building block SHALL be mapped to <mood> element defined in [RFC4480].

7.9.1.4   Watcher Processing

The default Watcher processing rules described in section 6.2 do not apply for this element.

Should more than one "mood" element be present in different <person> elements within a presence document, the Watcher SHALL consider the mood of the Presentity to be the aggregate of all <mood> elements. Duplicates SHALL be ignored.

7.9.1.5 Limitations

None.

7.10 Network Availability

7.10.1 Presence Information Element Semantics

7.10.1.1 Description

A device may be "connected" to one or more networks, such as a GSM, CDMA, GPRS, 802.11x, IMS, etc. However, connectivity to a network cannot be defined in a generic manner, as different states may exist for different networks. As such, the <network-availability> element is defined in a generic, extensible way. Each network that needs to be supported needs to extend this specification in order to stipulate the details.

The <network-availability> element SHALL include one or more <network> child elements. Each <network> element SHALL contain an "id" attribute indicating the network type. This value is defined in section 8.1 such that it is unique for that type of network. Each <network> element MAY include information on whether a user's device is in the network for which the user maintains direct subscription (i.e. home network), or a network for which the user does not have direct subscription (i.e. visited network).

Additionally, each network type will need to define the meaning of "connected", "home" and "visited", as well any additional information that is relevant for that type of network. The OMNA network-availability registry is available from [OMNA]. For additional details refer to Appendix E.

7.10.1.2 Mapping to Presence Data Model

The "Network Availability" is part of the "device" component according to the presence data model.

7.10.1.3 Mapping to PIDF

The "Network Availability" building block SHALL be mapped to PIDF as follows:

<device>→ <network-availability>→ <network> → <active> or <terminated>

→ <home> or <visited>

The <network-availability>, <network>, <active>, <terminated>, <home> and <visited> elements are defined in section 7.10.2.1.

7.10.1.4 Watcher Processing

Watcher processing SHALL be performed as described in section 6.2.

7.10.1.5 Limitations

None.

7.10.2 PIDF Extension Elements

7.10.2.1 <network-availability>, <network>, <active>, <terminated>, <home>, <visited>

The <network-availability> element is an extension to PIDF that is used to describe the "Network Availability" building block. The <network-availability> element SHALL be used as a child element of the <device> element defined in [RFC4479].

Each <network-availability> element SHALL include one or more <network> child elements. Each <network> element SHALL contain an "id" attribute indicating the type of the network.

Each <network> element:

    a) MAY include exactly one of:

       1. the <active> element indicating that the device is connected to the specific network; or

       2. the <terminated> element indicating that the device is not connected to the specific network.

    b) MAY include either:

       1. the <home> element that is used to represent that the device of a user is in the user's home network; or

       2. the <visited> element that is used to represent that the device of a user is in a visiting network.

    c) MAY include other elements from other namespaces for the purposes of extensibility.

7.10.3 XML Schema

The XML schema for the PIDF extension elements is defined in [XSD_pidfOMA] and [XSD_pde_pidfExt].

7.11 Note

7.11.1 Presence Information Element Semantics

7.11.1.1 Description

The "Note" building block is a free text value used to provides any type of written information to a potential Watcher.

7.11.1.2 Mapping to Presence Data Model

The "Note" element is part of the "person" component according to the presence data model.

7.11.1.3 Mapping to PIDF

The "Note" building block SHALL be mapped to the <note> element defined in [RFC4479].

7.11.1.4 Watcher Processing

The default Watcher processing rules described in section 6.2 do not apply for this element.

Should more than one "Note" element be present in different <person> elements within a presence document, the Watcher SHALL consider the notes of the Presentity to be the aggregate of all <note> elements. Duplicates SHALL be ignored.

7.11.1.5 Limitations

None.

7.12 Overriding Willingness

7.12.1 Presence Information Element Semantics

7.12.1.1 Description

The "Overriding Willingness" provides an indication, set by the Presentity that takes precedence over "Application-specific willingness" settings. For example, when an "Overriding Willingness" element is present, a positive setting indicates that the

user is willing to accept communications for all available communications types, while a negative setting indicates that the user is not willing to accept any communications.

7.12.1.2 Mapping to Presence Data Model

The "Overriding Willingness" is part of the "person" component according to the presence data model.

7.12.1.3 Mapping to PIDF

The "Overriding Willingness" building block SHALL be mapped to PIDF as follows: <person>→ <overriding-willingness>→ <basic>→ open/closed.

The <overriding-willingness> element is defined is section 7.12.2.

7.12.1.4 Watcher Processing

Watcher processing SHALL be performed as described in section 6.2.

The semantics of the deduced "willingness" for a Watcher are the same, regardless if "application-specific" or "overriding" willingness was used by the Presentity.

7.12.1.5 Limitations

None.

7.12.2 PIDF Extension Elements

7.12.2.1 <overriding-willingness>

The <overriding-willingness> element is an extension to PIDF that is used to describe the "Overriding willingness" building block. The <overriding-willingness> element SHALL be used as a child element of the <person> element defined in [RFC4479].

The <overriding-willingness> element SHALL include the <basic> element which has two values "open" or "closed" indicating overriding willingness.

7.12.3 XML Schema

The XML schema for the PIDF extension elements is defined in [XSD_pidfOMA].

7.13 Per-service Device Identifier

7.13.1 Presence Information Element Semantics

7.13.1.1 Description

The "Per service device identifier" building block identifies the device or devices where a particular "service" component executes.

7.13.1.2 Mapping to Presence Data Model

The "Per service device identifier" is part of the "service" component according to the presence data model.

7.13.1.3 Mapping to PIDF

The "Per service device identifier" building block SHALL be mapped to the <deviceID> element defined in [RFC4479].

7.13.1.4   Watcher Processing

Watcher processing SHALL be performed as described in section 6.2.

7.13.1.5   Limitations

The value of the "Per service device identifier" SHALL be following the methodology and restrictions of section 6.1.3.

7.14   Referenced Presence Information Metadata

7.14.1   Presence Information Element semantics

7.14.1.1   Description

A Presence Source can publish a Presence Information Element as a reference to an external storage (e.g. a document stored in the Presence Content XDMS [PRS_ContXDM]).

The "Referenced Presence Information Metadata" indicates metadata associated with the Presence Information stored in an external storage. The following general metadata is defined for a file:

- The "Content file size" metadata indicates the file size of a Presence Information Element stored in an external storage. If the Presence Information Element is embedded in an XML document, the file size is the size of the Presence Information Element before it is embedded.

- The "Content type" metadata indicates the content type of a Presence Information Element stored in an external storage. If the Presence Information Element is embedded in an XML document, the content type is the content type of the Presence Information Element before it is embedded.

- The "Etag" metadata indicates the version of the XML document in an XDMS containing the Presence Information Element.

The following metadata for an image or video content is defined:

- The "Resolution" metadata indicates the resolution of a referenced image or video Presence Information Element.

7.14.1.2   Mapping to Presence Data Model

The "Referenced Presence Information Metadata" building block is part of a component that contains a reference to a Presence Information Element in an external storage according to the presence data model (e.g. the Icon component).

7.14.1.3   Mapping to PIDF

The "Referenced Presence Information Metadata" building block SHALL be mapped to PIDF as follows:

- referencing element → 'metadata attribute m', 'meta data attribute n'

The <status-icon> element defined in section 7.8 is an example of a referencing element of this type.

The following metadata attributes exist:

- "Content type";
- "Etag";
- "File size"; and
- "Resolution".

7.14.1.4 Watcher Processing

Watcher processing SHALL be performed as described in section 6.2.

7.14.1.5 Limitations

None.

7.14.2 PIDF Extension Attributes

7.14.2.1 "contenttype"

The "contenttype" attribute is an extension to PIDF that is used to describe the "Content type" metadata attribute. The value of the attribute is a MIME Content type (e.g. image/jpg).

7.14.2.2 "etag"

The "etag" attribute is an extension to PIDF that is used to describe the "Etag" metadata attribute. The value of the attribute is an arbitrary string.

7.14.2.3 "fsize"

The "fsize" attribute is an extension to PIDF that is used to describe the "File size" metadata attribute. The value of the attribute is the file size in bytes (e.g. 102400).

7.14.2.4 "resolution"

The "resolution" attribute is an extension to PIDF that is used to describe the "Resolution" metadata attribute. The value of the attribute is of the type "width x height" (e.g. 640x480) where width and height are specified in number of pixels.

7.14.3 XML Schema

The XML schema for the PIDF extension attributes is defined in [XSD_pde_pidfExt].

7.15 Relative Service Preference

7.15.1 Presence Information Element Semantics

7.15.1.1 Description

The "Relative Service Preference" building block provides the information on the user's relative preference of a service over the other services (e.g. preference of OMA SIMPLE IM over SIP-based VoIP).

The "Relative Service Preference" building block corresponds to the description provided in section 3.3.3 of [RFC4479].

7.15.1.2 Mapping to Presence Data Model

The "Relative Service Preference" building block is part of the "service" component according to the presence data model.

7.15.1.3 Mapping to PIDF

The "Relative Service Preference" building block SHALL be mapped to <tuple> → <contact> → 'priority' attribute, as defined in [RFC3863].

7.15.1.4 Watcher Processing

Watcher processing SHALL be performed as described in section 6.2 and [RFC3863].

If two or more services share the same contact address but with different 'priority' attribute values, each 'priroity' attribute value SHOULD be regarded as the Presentity's relative service preference for the respective service.

7.15.1.5   Limitations

None.

7.16   Session Answer Mode

7.16.1   Presence Information Element Semantics

7.16.1.1   Description

The "Session Answer Mode" building block is an indication of whether a user will accept an incoming session for a given service in automatic or manual manner. The indicator allows the user to specify whether the answer mode of the inbound session is automatic (i.e. no user interaction is required to accept the inbound session) or whether the inbound session requires the user to manually accept/reject the invitation to communicate for the given service. Further details regarding automatic or manual answer are described in [RFC4354]. Each enabler that needs to support this element needs to elaborate the semantics of this building block in further details.

7.16.1.2   Mapping to Presence Data Model

The "Session Answer Mode" building block is part of the "service" component according to the presence data model.

7.16.1.3   Mapping to PIDF

The "Session Answer Mode" building block SHALL be mapped to PIDF as follows:

- <tuple>→ <session-answermode>→ < automatic>/<manual>; and

- service identification, as specified in section 6.1.2.1.

The <session-answermode> elements is defined in section 7.16.2.1.

7.16.1.4   Watcher Processing

Watcher processing SHALL be performed as described in section 6.2.

7.16.1.5   Limitations

Any policies established by the specific enabler with respect to the use of the <session-answermode> element and their resultant effects on the actual value provided to a Watcher, are beyond the scope of this document.

7.16.2   PIDF Extension Elements

7.16.2.1   <session-answermode>

The <session-answermode> element SHALL be used as a child element of the <tuple> element defined in [RFC3863].

The <session-answermode> element SHALL include either:

- the <automatic> element indicating that the particular Presentity will automatically accept an incoming session for the given service; or

- the <manual> element indicating that the Presentity must make a decision, and manually accept/reject the incoming session for the given service.

7.16.3 XML Schema

The XML schema for the PIDF extension elements is defined in [XSD_pde_pidfExt].

7.17 Session Participation

7.17.1 Presence Information Element Semantics

7.17.1.1 Description

The "Session Participation" building block indicates that the user is involved in at least one session of a specific service (e.g. PoC session). However definition of a "session" cannot be described in a "generic" manner, as it depends on the semantics of the specific enabler. As such the "session-participation" element is defined in a generic, extensible way. Each enabler that needs to support this element needs to extend this specification in order to stipulate the details. The participation in a session indicates to the Watcher that the Presentity may not be able to communicate with him/her even though it is possible technically.

7.17.1.2 Mapping to Presence Data Model

The "Session Participation" is part of the "service" component according to the presence data model.

7.17.1.3 Mapping to PIDF

The "Session Participation" building block SHALL be mapped to PIDF as follows:

- <tuple>→ <session-participation>→ <basic>→ open/closed; and

- service identification, as specified in section 6.1.2.1.

The <session-participation> element is defined is section 7.17.2.1.

7.17.1.4 Watcher Processing

Watcher processing SHALL be performed as described in section 6.2.

7.17.1.5 Limitations

None.

7.17.2 PIDF Extension Elements

7.17.2.1 <session-participation>

The <session-participation> element is an extension to PIDF that is used to describe the "Session Participation" building block. The <session-participation> element SHALL be used as a child element of the <tuple> element defined in [RFC3863].

The <session-participation> element SHALL include the <basic> element and have two values "open" or "closed" indicating whether the Presentity is participating in at least one session of a specific service.

7.17.3 XML Schema

The XML schema for the PIDF extension elements is defined in [XSD_pidfOMA].

7.18 Textual Location

7.18.1 Presence Information Element Semantics

7.18.1.1 Description

The "Textual Location" building block indicates an enumerated or free text location value as provided by the Presentity. The value of this element indicates the type of location where the Presentity physically resides at that point in time.

7.18.1.2 Mapping to Presence Data Model

The "Textual Location" is part of the "person" component according to the presence data model.

7.18.1.3 Mapping to PIDF

The "Textual Location" building block SHALL be mapped to <place-type> element defined in [RFC4480].

7.18.1.4 Watcher Processing

Watcher processing SHALL be performed as described in section 6.2, except for the case when the <place-type> element has a "from" or "until" attribute. In that case, should more than one <place-type> element be present in different <person> elements within a presence document, the Watcher SHALL consider the location-type of the Presentity to be the aggregate of all <place-type> elements. Duplicates SHALL be ignored.

7.18.1.4.1 Limitations

None.

7.19 Timestamp

7.19.1 Presence Information Element Semantics

7.19.1.1 Description

The "Timestamp" building block provides a timestamp specifying the time when the PS received the most recent information pertaining to the data component instance that contributes to the data component instance's aggregation. The Watcher may use this information to compare information provided in data compont instances. A "Timestamp" building block supplied by a Presence Source on publication of Presence Information is ignored by the PS when composing a presence document.

7.19.1.2 Mapping to Presence Data Model

The "Timestamp" can be part of "service", "device" or "person" components according to the presence data model.

7.19.1.3 Mapping to PIDF

The "Timestamp" building block SHALL be mapped to <timestamp> element defined in [RFC3863] for "service" and [RFC4479] for "device" and "person".

7.19.1.4 Watcher Processing

Watcher processing SHALL be performed as described in section 6.2.

7.19.1.5 Limitations

The <timestamp> SHALL follow the limitations as defined in [RFC3863] for "service" and [RFC4479] for "device" and "person".

7.20 Time Zone

7.20.1 Presence Information Element Semantics

7.20.1.1 Description

The "Time zone" building block indicates the difference between the time at the current location of the Presentity and current UTC time in minutes. The value should be such that when added to UTC, the time at the current location of the Presentity is obtained.

7.20.1.2 Mapping to Presence Data Model

The "Time zone" is a part of "person" component according to the presence data model.

7.20.1.3 Mapping to PIDF

The "Time zone" building block SHALL be mapped to <time-offset> element defined in [RFC4480].

7.20.1.4 Watcher Processing

Watcher processing SHALL be performed as described in section 6.2, except for the case when the <time-offset> element has a "from" or "until" attribute. In that case, should more than one "Time-zone" element be present in different <person> elements within a presence document, the Watcher SHALL consider the time-zone of the Presentity to be the aggregate of all <time-offset> elements. Duplicates SHALL be ignored.

7.20.1.5 Limitations

The "Time zone" SHALL follow the limitations described in [RFC4480].

7.21 Validity

7.21.1 Presence Information Element Semantics

7.21.1.1 Description

The "Validity" indicates the absolute time until which a Presence Information Element is expected to be valid.

7.21.1.2 Mapping to Presence Data Model

The "Validity" building block is either part of the "service" or the "person" component according to the presence data model.

7.21.1.3 Mapping to PIDF

The "Validity" building block SHALL be mapped to PIDF as follows:

- <activities>→ 'until' defined in [RFC4480];

- <mood>→ 'until' defined in [RFC4480];

- <place-type>→ 'until' defined in [RFC4480];

- <status-icon>→ 'until' defined in [RFC4480];

- <time-offset>→ 'until' defined in [RFC4480];

- <willingness>→ 'until'; and

- <overriding-willingness>→ 'until'.

The <willingness> and <overriding-willingness> elements are defined in sections 7.4.2.2 and 7.12.2.1, respectively. The 'until' attribute for the <willingness> and <overriding-willingness> elements is defined in section 7.21.2.

7.21.1.4   Watcher Processing

Watcher processing SHALL be performed as described in section 6.2.

7.21.1.5   Limitations

None.

7.21.2   PIDF Extension Attributes

7.21.2.1   "until"

The "until" attribute is an extension to PIDF that is used to describe the "Validity" building block. The "until" attribute SHALL be used as an attribute of the <willingness> or the <overriding-willingness> elements.

7.21.3   XML Schema

The XML schema for the PIDF extension attributes is defined in [XSD_pde_pidfExt].

7.22   Labelled Link

7.22.1   Presence Information Element Semantics

7.22.1.1   Description

The "Labelled Link" building block provides a URI pointing to any kind of information that a Presentity wants to announce. There is no restriction on the nature of the URI, it may be some general information related to the Presentity (e.g. a homepage, a playlist) as well as any kind of online content (e.g. a streaming video, a game) or some general information about a service that the Presentity wants to announce (e.g. a homepage that gives additional information about the service).

Multiple "Labelled Link" building blocks may be published for one Presentity.

The "Labelled Link" provides the ability to associate a human-readable display label and a priority with the URI.

Presentities SHOULD associate a textual display label to the URI in order to allow a more user-friendly processing at the Watcher's side (i.e. the display label is more self explanatory than the URI itself).

If more than one "Labelled Link" are published, Presentities SHOULD associate a priority to each of the URIs in order to provide guidance to the Watchers. For additional details refer to 7.22.1.4.

NOTE 1: The PDE enabler does not provide any processing or guidance to prevent multiple links from sharing the same label.

NOTE 2: The PDE enabler does not provide any processing or guidance on the management of the priorities. The value of the priority is up to the Presence Source.

7.22.1.2   Mapping to Presence Data Model

The "Labelled Link" is either part of the "person" component or part of the "service" component according to the presence data model.

7.22.1.3   Mapping to PIDF

The "Labelled Link" building block SHALL be mapped to PIDF as follows:

<person>→ <link> or

<tuple>→ <link>

The <link> element is defined is section 7.22.2.1.

7.22.1.4   Watcher Processing

Watcher processing SHALL be performed as described in section 6.2.

Watchers SHALL process the "Labelled Link" in accordance with its priority. The "Labelled Link" with the highest priority SHALL be processed first (e.g. a Watcher's GUI will display in top position the "Labelled Link" with the highest priority). How they are actually treated is beyond the scope of this document. Also, how to handle "Labelled Link" building blocks with the same priority is up to implementation.

If the priority is omitted, Watchers SHALL assign the "Labelled Link"the lowest priority.

7.22.1.5   Limitations

None.

7.22.2   PIDF Extension Elements and Attributes

7.22.2.1   <link>

The <link> element is an extension to PIDF that is used to contain a URI pointing to some information that a Presentity wants to announce.

The <link> element:

    a)   SHOULD include a 'label' attribute. If present, it SHALL contain a string value providing a human-readable text.

    b)   MAY include a 'priority' attribute. If present, it SHALL contain a numerical value specifying the priority of the link. The value of the attribute SHALL be a decimal number between 0 and 1 inclusive with at most 3 digits after the decimal point. Higher values indicate higher priority.

7.22.3   XML Schema

The XML schema for the PIDF extension elements is defined in [XSD_pde_pidfExt_1.1].

8. Registry for Presence Information Element Values

This section includes mappings and values associated with Presence Information Elements defined in this specification. New mappings or values are created based on Input Contributions reviewed and agreed by the OMA PAG WG. A template for creating such Input Contributions is available from Appendix D.

8.1 Network Availability

This section includes registered values for the <network-availability> element defined in section 7.10.2.1. New values are created based on Input Contributions reviewed and agreed by the OMA PAG WG. A template for creating such Input Contributions is available from Appendix E.

8.1.1 Network IMS

8.1.1.1 "id" attribute

The "id" attribute has the value of "IMS".

8.1.1.2 Specification reference

The Stage-3 specification of the IP Multimedia Core Network Call Control Protocol is available in [3GPP-TS_24.229] and [3GPP2-X.S0013-004].

8.1.1.3 Network-specific description of the <active> element

The IMS registration procedures are defined in [3GPP-TS_24.229] and [3GPP2-X.S0013-004]. The Presentity's "active" IMS registration status indicates whether the Presentity has performed a successful registration procedure with the IMS network and that registration is not expired or otherwise deregistered. Otherwise, the Presentity's IMS registration status is set to "terminated".

8.1.1.4 Any additional information relevant for this type of network

N/A.

8.1.2 IP-CAN used to access IMS

8.1.2.1 "id" attribute

The "id" has the same value as the attribute "access-type" in the P-Access-Network-Info header defined in section 7.2A.4.2 *"Syntax"* in [3GPP-TS_24.229].

8.1.2.2 Specification reference

The specification how to specify an IP-CAN in an "access-type" attribute in a P-Access-Network-Info header is available in [3GPP-TS_24.229], [3GPP2-X.S0013-004] and [RFC3455].

8.1.2.3 Network-specific description of the <active> element

The Presentity's "active" IP-CAN status indicates that the Presentity's device is connected via the indicated IP-CAN.

8.1.2.4 Any additional information relevant for this type of network

N/A

9. Operational Considerations

Void.

Appendix A.   Change History   (Informative)

A.1   Approved Version History

Reference	Date	Description
OMA-DDS-Presence_Data_Ext-V2_1-20100720-A	20 Jul 2010	Status changed to Approved by TP: OMA-TP-2010-0286-INP_PDE_V1_1_RRP_for_Final_Approval

Appendix B.   Presence Document Overview   (Informative)

Information structured according to the OMA presence data model is exchanged in an XML document that conforms to the basic Presence Information Data Format as defined in [RFC3863], and extended in other documents for the purpose of interworking.

The scheme below provides a high level overview of the data elements that may comprise an OMA presence XML document (<presence>).

Column 1:   Presence Information (as defined in this specification)

Column 2:   document where the associated <element> schema is defined

Column 3:   location of the <element> within the <presence> document
-    data elements defined in [RFC3863] are written in *italic*

Column 4:   DDS version in which the building block is defined

Person	schema	<person> ([RFC4479]) [1]	DDS version
Activity	[RFC4480]	<activities>	1.0
Overriding Willingness	[XSD_pidfOMA]	<overriding-willingness>	
		→ <basic> open/closed	1.0
Geographical Location	[RFC4119] [2]	<geopriv>→ <location-info>	
	[RFC5139] [2]	→<civicAddress>	1.0
	[RFC4119] [2]	<geopriv>→ <usage-rules>	1.0
Class	[RFC4480]	<class>	1.0
Icon	[RFC4480]	<status-icon>	1.0
Textual Location	[RFC4480]	<place-type>	1.0
Mood	[RFC4480]	<mood>	1.0
Note	[RFC4479]	<note>	1.0
Referenced Presence			
Information Metadata	[XSD_pde_pidfExt]	<status-icon>→ 'contenttype'	2.0
		<status-icon>→ 'etag'	2.0
		<status-icon>→ 'fsize'	2.0
		<status-icon>→ 'resolution'	2.0
Timestamp	[RFC4479]	<timestamp>	1.0
Time-zone	[RFC4480]	<time-offset>	1.0
Validity	[RFC4480]	<activities>→ 'until'	2.0
		<mood>→ 'until'	2.0
		<place-type>→ 'until'	2.0
		<status-icon>→ 'until'	2.0
		<time-offset>→ 'until'	2.0
		<overriding-willingness>→ 'until'	2.0
Labelled Link	[XSD_pde_pidfExt_1.1]	<link>→ 'label'	2.1
		<link>→ 'priority'	2.1

(1) Note that according to the definition of the <person> element in [RFC4479], all child elements outside of [RFC4479] namespace must be placed before the <note> element.

(2) Note that [RFC5491] provides additional information about the usage of the schema for Geographical Location.

Service	schema	*<tuple>* ([RFC3863]) [1]	DDS version
Application-specific Availability	[RFC3863]	*<status>→ <basic> open/closed*	1.0
	[XSD_pidfOMA]	<registration-state>	1.0
	[XSD_pidfOMA]	<barring-state>	1.0
Application-specific Media Capabilites	[RFC5196]	<servcaps>	2.0
Application-specific Willingness	[XSD_ pidfOMA]	<willingness>	
		→ <basic> open/closed	1.0
Class	[RFC4480]	<class>	1.0
Communication Address	[RFC3863]	*<contact>*	1.0
Icon	[RFC4480]	<status-icon>	1.0
Per service device identifier	[RFC4479]	<deviceID>	1.0
Referenced Presence Information Metadata	[XSD_pde_pidfExt]	<status-icon>→ 'contenttype'	2.0
		<status-icon>→ 'etag'	2.0
		<status-icon>→ 'fsize'	2.0
		<status-icon>→ 'resolution'	2.0
Relative Service Preference	[RFC3863]	*<contact> → 'priority'*	1.0
Session Participation	[XSD_pidfOMA]	<session-participation>	
		→ <basic> open/closed	1.0
Service Description	[XSD_pidfOMA]	<service-description>	1.0
Session Answer Mode	[XSD_pde_pidfExt]	<session-answermode>	
		→ <automatic/> / <manual/>	2.0
Timestamp	[RFC3863]	*<timestamp>*	1.0
Validity	[RFC4480]	<status-icon>→ 'until'	2.0
		<willingness>→ 'until'	2.0
Labelled Link	[XSD_pde_pidfExt_1.1]	<link>→ 'label'	2.1
		<link>→ 'priority'	2.1

(1) Note that according to the definition of the <tuple> element in [RFC3863], all child elements outside of [RFC3863] namespace MUST be placed between the <status> and the <contact> element.

Device	schema	<device> ([RFC4479])[1]	DDS version
Class	[RFC4480]	<class>	1.0
Device identifier	[RFC4479]	<deviceID>	1.0
Geographical Location	[RFC4119][2]	<geopriv>→ <location-info>	
	[RFC5139][2]	→<civicAddress>	1.0
	[RFC4119][2]	<geopriv>→ <usage-rules>	1.0
Network Availability	[XSD_pidfOMA]	<network-availability>	
		→ <network>	
		→ <active/> / <terminated/>	1.0
	[XSD_pde_pidfExt]	→ <home/> / <visited/>	2.0
Timestamp	[RFC4479]	<timestamp>	1.0

(1) Note that according to the definition of the <device> element in [RFC4479], all child elements outside of [RFC4479] namespace MUST be placed before the <deviceID> element.
(2) Note that [RFC5491] provides additional information about the usage of the schema for Geographical Location.

The following is an example of a raw OMA presence XML document:

```
<?xml version="1.0" encoding="UTF-8"?>
<presence xmlns="urn:ietf:params:xml:ns:pidf"
    xmlns:pdm=" urn:ietf:params:xml:ns:pidf:data-model"
    xmlns:rpid="urn:ietf:params:xml:ns:pidf:rpid"
    xmlns:op="urn:oma:xml:prs:pidf:oma-pres"
    xmlns:gp="urn:ietf:params:xml:ns:pidf:geopriv10"
    xmlns:cl="urn:ietf:params:xml:ns:pidf:geopriv10:civicAddr"
    xmlns:gml="http://www.opengis.net/gml"
    xmlns:lt="urn:ietf:params:xml:ns:location-type"
    xmlns:opd="urn:oma:xml:pde:pidf:ext"
    xmlns:opd1.1="urn:oma:xml:pde:pidf:ext:1.1"
    xmlns:caps="urn:ietf:params:xml:ns:pidf:caps"
    entity="sip:someone@example.com">

    <tuple id="a1231">
      <status>
        <basic>open</basic>
      </status>
      <op:willingness opd:until="2008-10-28T22:20:00Z">
        <op:basic>open</op:basic>
      </op:willingness>
      <op:session-participation>
        <op:basic>open</op:basic>
      </op:session-participation>
      <rpid:status-icon>http://example.com/~my-icons/PoC-Session</rpid:status-icon>
      <op:registration-state>active</op:registration-state>
      <op:barring-state>terminated</op:barring-state>
      <rpid:class>forfriends</rpid:class>
      <op:service-description>
        <op:service-id>org.openmobilealliance:PoC-session</op:service-id>
        <op:version>1.0</op:version>
        <op:description>This is the OMA PoC-Session service</op:description>
      </op:service-description>
      <pdm:deviceID>urn:uuid:d27459b7-8213-4395-aa77-ed859a3e5b3a</pdm:deviceID>
      <opd:session-answermode>
        <opd:manual/>
      </opd:session-answermode>
      <contact priority="0.8">sip:someone@example.com</contact>
      <timestamp>2008-10-28T20:07:07Z</timestamp>
    </tuple>
```

```
<tuple id="a1232">
  <status>
    <basic>closed</basic>
  </status>
  <op:willingness>
    <op:basic>closed</op:basic>
  </op:willingness>
  <rpid:status-icon>http://example.com/~my-icons/PoC-Alert</rpid:status-icon>
  <op:registration-state>active</op:registration-state>
  <op:barring-state>active</op:barring-state>
  <rpid:class>forfriends</rpid:class>
  <op:service-description>
    <op:service-id>org.openmobilealliance:PoC-alert</op:service-id>
    <op:version>1.0</op:version>
    <op:description>This is the OMA PoC-Alert service</op:description>
  </op:service-description>
  <contact priority="0.5">sip:someone@example.com</contact>
  <timestamp>2008-10-28T20:07:07Z</timestamp>
</tuple>

<tuple id="a1233">
  <status>
    <basic>open</basic>
  </status>
  <op:willingness>
    <op:basic>closed</op:basic>
  </op:willingness>
  <caps:servcaps>
    <caps:audio>true</caps:audio>
    <caps:description xml:lang="en">My SIP VoIP Service</caps:description>
    <caps:duplex>
      <caps:supported>
        <caps:full/>
     </caps:supported>
    </caps:duplex>
    <caps:methods>
      <caps:supported>
        <caps:ACK/>
        <caps:BYE/>
        <caps:CANCEL/>
        <caps:INVITE/>
      </caps:supported>
    </caps:methods>
    <caps:schemes>
      <caps:supported>
        <caps:s>sip</caps:s>
        <caps:s>tel</caps:s>
      </caps:supported>
    </caps:schemes>
    <caps:video>false</caps:video>
   </caps:servcaps>
  <contact>sip:someone@example.com</contact>
  <timestamp>2008-10-28T20:07:07Z</timestamp>
</tuple>

<pdm:person id="a1233">
  <op:overriding-willingness opd:until="2008-10-28T21:00:00Z">
```

```
        <op:basic>open</op:basic>
    </op:overriding-willingness>
    <opd1.1:link opd1.1:label="cool site"
opd1.1:priority="0.725">http://www.openmobilealliance.org</opd1.1:link>
    <rpid:activities>
        <rpid:meeting/>
    </rpid:activities>
    <rpid:place-type until="2008-10-28T23:59:00Z"> <lt:office/> </rpid:place-type>
    <rpid:mood> <rpid:happy/> </rpid:mood>
    <rpid:status-icon opd:etag="xvsdfx" opd:fsize="36147"
opd:contenttype="image/jpeg"
opd:resolution="240x320">http://xcap.example.com/org.openmobilealliance.pres-
content/users/sip:someone@example.com/oma_status-icon/my-icon</rpid:status-icon>
    <rpid:time-offset>120</rpid:time-offset>
    <gp:geopriv>
      <gp:location-info>
        <cl:civicAddress xml:lang="en-AU">
            <cl:country>AU</cl:country>
            <cl:A1>NSW</cl:A1>
            <cl:A3>Wollongong</cl:A3>
            <cl:A4>North Wollongong</cl:A4>
            <cl:RD>Flinders</cl:RD>
            <cl:STS>Street</cl:STS>
            <cl:RDBR>Campbell Street</cl:RDBR>
            <cl:LMK>Gilligan's Island</cl:LMK>
            <cl:LOC>Corner</cl:LOC>
            <cl:NAM>Video Rental Store</cl:NAM>
            <cl:PC>2500</cl:PC>
            <cl:ROOM>Westerns and Classics</cl:ROOM>
            <cl:PLC>store</cl:PLC>
            <cl:POBOX>Private Box 15</cl:POBOX>
        </cl:civicAddress>
      </gp:location-info>
    </gp:geopriv>
    <rpid:class>forfriends</rpid:class>
    <pdm:note xml:lang="en">I am in a boring meeting!!</pdm:note>
    <pdm:timestamp>2008-10-28T20:07:07Z</pdm:timestamp>
</pdm:person>

<pdm:device id="a1234">
  <op:network-availability>
    <op:network id="IMS">
        <op:active/>
        <opd:home/>
    </op:network>
  </op:network-availability>
  <gp:geopriv>
      <gp:location-info>
          <gml:Point srsName="urn:ogc:def:crs:EPSG::4326">
            <gml:pos>-34.407 150.883</gml:pos>
          </gml:Point>
      </gp:location-info>
      <gp:usage-rules>
        <gp:retransmission-allowed>no</gp:retransmission-allowed>
        <gp:retention-expiry>2008-10-29T04:07:07Z</gp:retention-expiry>
      </gp:usage-rules>
  </gp:geopriv>
  <pdm:deviceID>urn:uuid:d27459b7-8213-4395-aa77-ed859a3e5b3a</pdm:deviceID>
```

```
        <pdm:timestamp>2008-10-28T20:07:07Z</pdm:timestamp>
    </pdm:device>

</presence>
```

Appendix C.   Presence Document Examples   (Informative)

Examples of how the Presence Information semantics are described in a typical Presence Information XML schema are shown below:

Presence Document describing:

- **PoC-Session Specific Availability: Not Available/ Not Registered**

```
<?xml version="1.0" encoding="UTF-8"?>
<presence xmlns="urn:ietf:params:xml:ns:pidf"
    xmlns:op="urn:oma:xml:prs:pidf:oma-pres"
    entity="sip:someone@example.com">

    <tuple id="a1232">
      <status>
        <basic>closed</basic>
      </status>
      <op:registration-state>terminated</op:registration-state>
      <op:barring-state>terminated</op:barring-state>
      <op:service-description>
        <op:service-id>org.openmobilealliance:PoC-session</op:service-id>
        <op:version>1.0</op:version>
      </op:service-description>
      <contact priority="0.1">sip:someone@example.com</contact>
      <timestamp>2008-10-28T10:25:01Z</timestamp>
    </tuple>
</presence>
```

Presence Document describing:

- **PoC-Session Specific Availability: Available/Registered/ISB not activated**
- **PoC-Session Specific Willingness: Willing**
- **PoC-Session Specific AnswerMode: automatic**
- **Activity: Meal**
- **Geographical Location: Coord <X> and <Y>**

```
<?xml version="1.0" encoding="UTF-8"?>
<presence xmlns="urn:ietf:params:xml:ns:pidf"
    xmlns:pdm="urn:ietf:params:xml:ns:pidf:data-model"
    xmlns:rpid="urn:ietf:params:xml:ns:pidf:rpid"
    xmlns:op="urn:oma:xml:prs:pidf:oma-pres"
    xmlns:opd="urn:oma:xml:pde:pidf:ext"
    xmlns:gp="urn:ietf:params:xml:ns:pidf:geopriv10"
    xmlns:gml="http://www.opengis.net/gml"
    entity="sip:someone@example.com">

    <tuple id="a1232">
      <status>
        <basic>open</basic>
      </status>
      <op:willingness>
        <op:basic>open</op:basic>
      </op:willingness>
      <op:registration-state>active</op:registration-state>
```

```
        <op:barring-state>terminated</op:barring-state>
        <op:service-description>
          <op:service-id>org.openmobilealliance:PoC-session</op:service-id>
          <op:version>1.0</op:version>
        </op:service-description>
        <opd:session-answermode>
          <opd:automatic/>
        </opd:session-answermode>
        <contact priority="0.8">sip:someone@example.com</contact>
        <timestamp>2008-10-28T12:14:56Z</timestamp>
    </tuple>

    <pdm:person id="a1233">
        <rpid:activities>
          <rpid:meal/>
        </rpid:activities>
        <gp:geopriv>
          <gp:location-info>
            <gml:Point srsName="urn:ogc:def:crs:EPSG::4326">
              <gml:pos>-34.407 150.883</gml:pos>
            </gml:Point>
          </gp:location-info>
          <gp:usage-rules/>
        </gp:geopriv>
        <pdm:timestamp>2008-10-28T12:14:56Z</pdm:timestamp>
    </pdm:person>

</presence>
```

Presence Document describing:

- **PoC-Session Specific Availability: Available/Registered/ISB not activated**

- **PoC-Session Specific Willingness: Willing**

- **PoC Specific Session Participation: Not Engaging**

- **Device Identifier: urn:uuid: 48662e19-5fbf-43fc-a2fd-d23002787599**

```
<?xml version="1.0" encoding="UTF-8"?>
<presence xmlns="urn:ietf:params:xml:ns:pidf"
     xmlns:pdm="urn:ietf:params:xml:ns:pidf:data-model"
     xmlns:rpid="urn:ietf:params:xml:ns:pidf:rpid"
     xmlns:op="urn:oma:xml:prs:pidf:oma-pres"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     entity="sip:someone@example.com">

     <tuple id="a1232">
        <status>
          <basic>open</basic>
        </status>
        <op:willingness>
          <op:basic>open</op:basic>
        </op:willingness>
        <op:session-participation>
           <op:basic>closed</op:basic>
        </op:session-participation>
        <op:registration-state>active</op:registration-state>
        <op:barring-state>terminated</op:barring-state>
```

```
        <op:service-description>
          <op:service-id>org.openmobilealliance:PoC-Session</op:service-id>
          <op:version>1.0</op:version>
        </op:service-description>
         <pdm:deviceID>urn:uuid:48662e19-5fbf-43fc-a2fd-d23002787599</pdm:deviceID>
        <contact priority="0.7">sip:someone@example.com</contact>
        <timestamp>2005-02-21T16:25:56Z</timestamp>
      </tuple>

      <pdm:device id="a1233">
        <pdm:deviceID>urn:uuid:48662e19-5fbf-43fc-a2fd-d23002787599</pdm:deviceID>
        <pdm:timestamp>2008-10-28T16:25:56Z</pdm:timestamp>
      </pdm:device>

</presence>
```

Presence Document describing:

- **PoC-Alert Specific Availability: Not Available/Registered/ISB activated**

- **PoC-Alert Specific Willingness: Not Willing**

- **Network-Availability: IMS-registered**

- **Network-Availability: 3GPP-GERAN attached, which is visited network**

- **Mood: happy**

- **Location: mall public noisy**

- **Icon: http://example.com/~someone/myicon.gif**

- **the Device Identifier: urn:uuid:48662e19-5fbf-43fc-a2fd-d23002787599**

```
<?xml version="1.0" encoding="UTF-8"?>
<presence xmlns="urn:ietf:params:xml:ns:pidf"
    xmlns:pdm="urn:ietf:params:xml:ns:pidf:data-model"
    xmlns:rpid="urn:ietf:params:xml:ns:pidf:rpid"
    xmlns:op="urn:oma:xml:prs:pidf:oma-pres"
    xmlns:lt="urn:ietf:params:xml:ns:location-type"
    xmlns:opd="urn:oma:xml:pde:pidf:ext"
    entity="sip:someone@example.com">

    <tuple id="a1232">
      <status>
        <basic>closed</basic>
      </status>
      <op:willingness>
        <op:basic>closed</op:basic>
      </op:willingness>
      <op:registration-state>active</op:registration-state>
      <op:barring-state>active</op:barring-state>
      <op:service-description>
        <op:service-id>org.openmobilealliance:PoC-Alert</op:service-id>
        <op:version>1.0</op:version>
        <op:description>This is the OMA POC-Alert service</op:description>
      </op:service-description>
      <pdm:deviceID>urn:uuid:48662e19-5fbf-43fc-a2fd-d23002787599</pdm:deviceID>
      <contact priority="0.1">sip:someone@example.com</contact>
      <timestamp>2008-10-28T20:07:07Z</timestamp>
    </tuple>
```

```
        <pdm:person id="a1233">
             <rpid:place-type>
                  <lt:shopping-area/>
                  <lt:public/>
             </rpid:place-type>
             <rpid:mood>
                 <rpid:happy/>
             </rpid:mood>
             <rpid:status-icon>http://example.com/~someone/myicon.gif</rpid:status-
icon>
         <pdm:timestamp>2008-10-28T20:07:07Z</pdm:timestamp>
      </pdm:person>

      <pdm:device id="a1234">
          <op:network-availability>
            <op:network id="IMS">
              <op:active/>
            </op:network>
            <op:network id="3GPP-GERAN">
              <op:active/>
              <opd:visited/>
             </op:network>
         </op:network-availability>
          <pdm:deviceID>urn:uuid:48662e19-5fbf-43fc-a2fd-d23002787599</pdm:deviceID>
          <pdm:timestamp>2008-10-282T20:07:07Z</pdm:timestamp>
      </pdm:device>

</presence>
```

Presence Document describing:

- **PoC-Session Specific Availability: Available/Registered/ISB not activated**

- **PoC-Session Specific Willingness: Willing**

- **PoC-Session Specific AnswerMode: Automatic**

- **PoC Specific Session Participation: Not Engaging**

- **Device Identifier: urn:uuid: 48662e19-5fbf-43fc-a2fd-d23002787599**

```
<?xml version="1.0" encoding="UTF-8"?>
<presence xmlns="urn:ietf:params:xml:ns:pidf"
        xmlns:pdm="urn:ietf:params:xml:ns:pidf:data-model"
        xmlns:rpid="urn:ietf:params:xml:ns:pidf:rpid"
        xmlns:op="urn:oma:xml:prs:pidf:oma-pres"
        xmlns:opd="urn:oma:xml:pde:pidf:ext"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
          entity="sip:someone@example.com">

    <tuple id="a1232">
      <status>
        <basic>open</basic>
      </status>
      <op:willingness>
        <op:basic>open</op:basic>
      </op:willingness>
      <opd:session-answermode>
          <opd:automatic/>
```

```
      </opd:session-answermode>
      <op:session-participation>
         <op:basic>closed</op:basic>
      </op:session-participation>
      <op:registration-state>active</op:registration-state>
      <op:barring-state>terminated</op:barring-state>
      <op:service-description>
        <op:service-id>org.openmobilealliance:PoC-Session</op:service-id>
        <op:version>1.0</op:version>
      </op:service-description>
       <pdm:deviceID>urn:uuid:48662e19-5fbf-43fc-a2fd-d23002787599</pdm:deviceID>
      <contact priority="0.6">sip:someone@example.com</contact>
      <timestamp>2008-10-28T16:25:56Z</timestamp>
    </tuple>

    <pdm:device id="a1233">
       <pdm:deviceID>urn:uuid:48662e19-5fbf-43fc-a2fd-d23002787599</pdm:deviceID>
       <pdm:timestamp>2005-02-21T16:25:56Z</pdm:timestamp>
    </pdm:device>

</presence>
```

Appendix D. Template for Input Contributions defining a Presence Information Element   (Informative)

D.1 Presence Information Element semantics

D.1.1 Presence Information Element A

D.1.1.1 Description

D.1.1.2 Mapping to presence data model

D.1.1.3 Mapping to PIDF

D.1.1.4 Watcher Processing

D.1.1.5 Limitations

D.2 PIDF extension elements

D.2.1 <example>

D.3 PIDF extension attributes

D.3.1 "example"

D.4 Subscription Content Rules

D.5 Publication Content Rules

D.6 XML Schema

Appendix E.   Template for Input Contributions defining values for the <network-availability> element   (Informative)

E.1   Network XXX

E.1.1   "id" attribute

E.1.2   Specification reference

E.1.3   Network-specific description of the <active> element

E.1.4   Any additional information relevant for this type of network

Appendix F.   Presence information of some commonly known Communication Means or Services (Informative)

F.1   General

This appendix defines the Presence Information for a set of commonly known communication means or services.

The Presence Information described here belongs to the "service" component of the presence data model.

F.2   OMA PoC

F.2.1   Description

The OMA PoC Service Enabler is defined in [PoC_AD] and [PoC_CP].

F.2.2   Presence Information Elements

The PoC-specific Presence Information Elements are defined in Appendix C of [PoC_TS].

F.3   OMA SIMPLE IM

F.3.1   Description

The OMA SIMPLE IM Service Enabler is defined in [IM_AD] and [IM_TS].

F.3.2   Presence Information Elements

The IM-specific Presence Information Elements are defined in Appendix H of [IM_TS].

F.4   OMA IMPS IM

F.4.1   Description

The OMA IMPS IM Service Enabler is defined in [IMPS_AD].

F.4.2   Presence Information Elements

This section describes the typical IMPS Presence Information Elements:

- The availability for the IMPS IM Service Enabler is indicated with the Application-specific Availability Presence Information Element as defined in section 7.13.

- The user's willingness for receiving IMPS Instant Messages is indicated with the Application-specific Willingness Presence Information Element as defined in section 7.1.

- The information about an ongoing IMPS IM session is indicated using the Session Participation Presence Information Element as defined in section 7.17.

- The recipient address used to send an IMPS instant message to, is provided using the Communication Address Presence Information Element as defined in section 7.6.

The URI scheme of the <contact> address is used to identify the service. The syntax of the URI scheme is defined in [IMPS_CSP].

F.5   SMS

F.5.1   Description

The SMS service is defined in [3GPP-TS_03.40] / [3GPP2-X.S0004-641].

F.5.2   Presence Information Elements

This section describes the typical SMS Presence Information Elements.

- The availability for the SMS service is indicated with the Application-specific Availability Presence Information Element as defined in section 7.13.

- The user's willingness for the SMS service is indicated with the Application-specific Willingness Presence Information Element as defined in section 7.1.

- The recipient address used to send an SMS to, is provided using the Communication Address Presence Information Element as defined in section 7.6.

The URI scheme of the <contact> address is used to identify the service. The syntax of the URI scheme is defined in [RFC5724].

F.6   MMS

F.6.1   Description

The MMS application is defined in [3GPP-TS_23.140] / [3GPP2-X.S0016-000]

F.6.2   Presence Information Elements

This section describes the typical MMS Presence Information Elements.

- The availability for the MMS service is indicated with the Application-specific Availability Presence Information Element as defined in section 7.13.

- The user's willingness for receiving an MMS is indicated with the Application-specific Willingness Presence Information Element as defined in section 7.1.

- The recipient address used to send an MMS to, is provided using the Communication Address Presence Information Element as defined in section 7.6.

The URI scheme of the <contact> address is used to identify the service. The syntax of the URI scheme is defined in [URISCHEME_TS].

F.7   E-mail

F.7.1   Description

Typical E-mail applications are defined in [MEM_AD] and [RFC5550].

F.7.2   Presence Information Elements

This section describes the typical E-mail Presence Information Elements.

- The availability for E-mail is indicated with the Application-specific Availability Presence Information Element as defined in section 7.13.

- The user's willingness for receiving E-mails is indicated with the Application-specific Willingness Presence Information Element as defined in section 7.1.

- The recipient address used to send an E-mail to is provided using the Communication Address Presence Information Element as defined in section 7.6.

The URI scheme of the <contact> address is used to identify the service. The syntax of the URI schemes is defined in [RFC2368].

F.8   SIP-based VoIP call

F.8.1   Description

The SIP-based VoIP call service is a one-to-one, full-duplex, real-time conversational audio service between two User Equipments. The audio session is established via SIP session setup procedures.

F.8.2   Presence Information Elements

This section describes the typical VoIP Presence Information Elements.

- The availability for SIP-based VoIP call service is indicated with the Application-specific Availability Presence Information Element as defined in section 7.13.

- The user's willingness for receiving incoming SIP-based VoIP call service invitations is indicated with the Application-specific Willingness Presence Information Element as defined in section 7.1.

- The information about an ongoing SIP-based VoIP session is indicated using the Session Participation Presence Information Element as defined in section 7.17.

- The contact address is provided using the Communication Address Presence Information Element as defined in section 7.6.

- The media capabilities of the SIP-based VoIP call service are indicated by the Application-specific Media Capabilities Presence Information Element as defined in section 7.3.

The URI scheme of the <contact> address and the <servcaps> element is used to identify the service. The syntax of the URI scheme is defined in [RFC3261].

It is recommended to use the Application-specific Media Capabilities Presence Information Element to indicate that this service supports audio as a streaming media type as defined in [RFC5196].

F.9   SIP-based Video call

F.8.1 Description

The SIP-based video call service is a one-to-one, full-duplex, real-time video service between two User Equipments. The video session is established via SIP session setup procedures.

F.8.2 Presence Information Elements

This section describes the typical video Presence Information Elements.

- The availability for SIP-based video call service is indicated with the Application-specific Availability Presence Information Element as defined in section 7.13.

- The user's willingness for receiving incoming SIP-based video call service invitations is indicated with the Application-specific Willingness Presence Information Element as defined in section 7.1.

- The information about an ongoing SIP-based video session is indicated using the Session Participation Presence Information Element as defined in section 7.17.

- The contact address is provided using the Communication Address Presence Information Element as defined in section 7.6.

- The media capabilities of the SIP-based video call service are indicated by the Application-specific Media Capabilities Presence Information Element as defined in section 7.3.

The URI scheme of the <contact> address and the <servcaps> element is used to identify the service. The syntax of the URI scheme is defined in [RFC3261].

It is recommended to use the Application-specific Media Capabilities Presence Information Element to indicate that this service supports video audio as a streaming media type as defined in [RFC5196].

F.10 Circuit-switched Speech

F.10.1 Description

The circuit-switched (CS) speech service is a one-to-one, full-duplex, real-time conversational speech telephony service between two User Equipments provided by a CS network. Typical CS speech service is defined in [3GPP-TS_22.003].

F.10.2 Presence Information Elements

This section describes the typical CS speech service Presence Information Elements.

- The availability for CS speech service is indicated with the Application-specific Availability Presence Information Element as defined in section 7.13.

- The user's willingness for CS speech service is indicated with the Application-specific Willingness Presence Information Element as defined in section 7.1.

- The information about an ongoing CS speech service is indicated using the Session Participation Presence Information Element as defined in section 7.17.

- The contact address is provided using the Communication Address Presence Information Element as defined in section 7.6. The URI scheme of the <contact> address SHALL be limited to tel URIs as defined in [RFC3966].

The value of the <service-id> element for CS speech service Presence Information SHALL be "org.3gpp.cs-speech" as registered in [OMNA_pidfSvcDesc].

F.11 Circuit-switched Videotelephony

F.11.1 Description

The circuit-switched (CS) videotelephony service is a one-to-one, real-time conversational video and speech service between two User Equipments provided by a CS network. The details of the typical CS videotelephony are available from [3GPP-TS_26.111].

F.11.2 Presence Information Elements

This section describes the typical CS videotelephony service Presence Information Elements.

- The availability for CS videotelephony service is indicated with the Application-specific Availability Presence Information Element as defined in section 7.13.

- The user's willingness for CS videotelephony service is indicated with the Application-specific Willingness Presence Information Element as defined in section 7.1.

- The information about an ongoing CS videotelephony service is indicated using the Session Participation Presence Information Element as defined in section 7.17.

- The contact address is provided using the Communication Address Presence Information Element as defined in section 7.6. The URI scheme of the <contact> address SHALL be limited to tel URIs as defined in [RFC3966].

The value of the <service-id> element for CS videotelephony service presence information SHALL be "org.3gpp.cs-videotelephony" as registered in [OMNA_pidfSvcDesc].

F.12 Multimedia Telephony

F.12.1 Description

The Multimedia Telephony service is a one-to-one, full-duplex, real-time communication service between two User Equipments. The communication session is established via SIP session setup procedures. The Multimedia Telephony Service is defined in [3GPP-TS_24.173].

F.12.2 Presence Information Elements

This section describes the typical Multimedia Telephony Presence Information Elements.

- The availability for Multimedia Telephony service is indicated with the Application-specific Availability Presence Information Element as defined in section 7.13.

- The user's willingness for receiving incoming Multimedia Telephony service invitations is indicated with the Application-specific Willingness Presence Information Element as defined in section 7.1.

- The information about an ongoing Multimedia Telephony session is indicated using the Session Participation Presence Information Element as defined in section 7.17.

- The contact address is provided using the Communication Address Presence Information Element as defined in section 7.6.

- The media capabilities of the Multimedia Telephony service are indicated by the Application-specific Media Capabilities Presence Information Element as defined in section 7.3.

The value of the <service-id> element for Multimedia Telephony service Presence Information SHALL be "org.3gpp.urn:urn-7:3gpp-service.ims.icsi.mmtel" as registered in [OMNA_pidfSvcDesc].

The <service-id> and <servcaps> elements are used collectively to describe the service.