Service User Profile Management Technical Specification

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Open Mobile Alliance
OMA-TS-Service_User_Profile_Management-V1_0-20120529-A

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1. Scope

The Service User Profile Management (SUPM) enabler provides a standardized interface to access and manage the data related to Service User Profile, with which Applications and/or enablers can create, read, update and delete those data in order to support contextualization and personalization of the User's services.

This document provides the core Technical Specification of the SUPM enabler.

This document specifies:

- The abstract definition of common SUPM Data Views and data elements of the Service User Profile for SUPM 1.0

- The detailed functional description of SUPM Component

- Abstract interface definitions: the message flows, and message exchange patterns used for message exchanges between SUPM Component and Data Consumer

2. References

2.1 Normative References

[CAB_XDMS]	"Converged Addess Book XML Specification", Version 1.0, Open Mobile Alliance™, OMA-TS-CAB_XDMS-V1_0, URL:http://www.openmobilealliance.org/
[CBCS_TS]	"Categorization Based Content Screening Technical Specification", Version 1.0, Open Mobile Alliance™, OMA-TS-CBCS-V1_0, URL:http://www.openmobilealliance.org/
[OMA_DDS_Presence_data_ext]	"OMA Data Description Specification for Presence Data Extension", Version 1.0, Open Mobile Alliance™, OMA-DDS-Presence_Data_Extension-V1_0, URL:http://www.openmobilealliance.org/
[Profile_XDMS]	"Profile XML Specification", Version 2.1, Open Mobile Alliance™, OMA-TS-XDM_Profile-V2_1, 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
[RFC2822]	"Internet Message Format", P. Resnick, April 2001, URL: http://www.ietf.org/rfc/rfc2822.txt
[RFC3261]	"SIP: Session Initiation Protocol", J. Rosenberg, et. al, June 2002, URL: http://www.ietf.org/rfc/rfc3261.txt
[RFC3966]	"The tel URI for Telephone Numbers", H. Schulzrinne, December 2004, URL: http://www.ietf.org/rfc/rfc3966.txt
[RFC4646]	"Tags for Identifying Languages", A. Phillips, M. Davis, September 2006, URL: http://www.ietf.org/rfc/rfc4646.txt
[SEC_CF]	"Enabler Release Package for Application Layer Security Common Functions", Version 1.0, Open Mobile Alliance™, OMA-ERP-SEC_CF-V1_0-A, URL:http://www.openmobilealliance.org/
[SUPM-AD]	"OMA Service User Profile Management Architecture", Open Mobile Alliance™, OMA-AD-Service_User_Profile_Management-V1_0, URL:http://www.openmobilealliance.org/
[SUPM-RD]	"OMA Service User Profile Management Requirements", Open Mobile Alliance™, OMA-RD-Service_User_Profile_Management-V1_0, URL:http://www.openmobilealliance.org/
[SUPM-TS-LDAP]	"Service User Profile Management Technical Specification LDAP binding for SUPM-1 interface", Open Mobile Alliance™, OMA-TS-Service_User_Profile_Management_LDAP_Binding-V1_0, URL:http://www.openmobilealliance.org/
[SUPM-TS-RESTful]	"Service User Profile Management Technical SpecificationRESTful binding for SUPM-1 interface", Open Mobile Alliance™, OMA-TS-Service_User_Profile_Management_RESTful_Binding-V1_0, URL:http://www.openmobilealliance.org/
[SUPM-TS-SOAP]	"Service User Profile Management Technical SpecificationSOAP binding for SUPM-1 interface", Open Mobile Alliance™, OMA-TS-Service_User_Profile_Management_SOAP_Binding-V1_0, URL:http://www.openmobilealliance.org/
[XDM_UPP]	"UPP Directory XML Specification", Version 1.0, Open Mobile Alliance™, OMA-TS-XDM_UPP_Directory-V1_0, URL:http://www.openmobilealliance.org/
[XML]	"Extensible Markup Language (XML) 1.0 (Second Edition)", W3C Recommendation 6-October-2000. T. Bray, et al, 6-October-2000. URL: http://www.w3.org/TR/REC-xml

2.2 Informative References

[OMADICT]	"Dictionary for OMA Specifications", Version 2.8, Open Mobile Alliance™, OMA-ORG-Dictionary-V2_8, 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	See [OMADICT]
Resource	See [OMADICT]
Service	See [OMADICT]
Service Provider	See [OMADICT]
Service User Profile	See [SUPM-RD]
SUPM Data View	See [SUPM-AD].
SUPM Data View ID	A name that identifies a SUPM Data View.
User	See [OMADICT]
User Profile	See [OMADICT]

3.3 Abbreviations

AD	Architecture Document
LDAP	Lightweight Directory Access Protocol
HTTP	HyperText Transfer Protocol
OMA	Open Mobile Alliance
RD	Requirement Document
REST	Representational State Transfer
SUPM	Service User Profile Management
TS	Technical Specification
URI	Uniform Resource Identifier
XML	Extensible Mark-up Language

4. Introduction

This document defines the interfaces and functionalities of Service User Profile Management (SUPM) based on requirements defined by the SUPM requirement document [SUPM-RD] and in accordance with the architecture defined by the SUPM architecture document [SUPM-AD].

This document describes common features and behaviours of the SUPM-1 interface. The protocol bindings for the SUPM-1 interface are described in separate documents ([SUPM-TS-LDAP], [SUPM-TS-RESTful], [SUPM-TS-SOAP]).

Section 5 of this document contains the detailed functional description of the SUPM Component.

Section 6 of this document contains the description of the message exchange patterns, operations and parameters which are used over SUPM-1 interface.

Section 7 of this document contains details on security considerations between SUPM Component and Data Consumer.

Section 8 of this document contains abstract definition of common Data Views and data elements.

4.1 Version 1.0

The SUPM Technical Specification covers all requirements [SUPM-RD] of SUPM V1.0.

5. SUPM Component Functional Descriptions

This section contains the detailed description of the functions provided by the SUPM Component.

5.1 Data Request Analysis Function

The Data Request Analysis function is responsible for handling SUPM-1 Data requests which are initiated from Data Consumers, decoding the request, and then invoking corresponding analysis actions.

Upon receiving the request, the Data Request Analysis Function:

- SHALL decode the SUPM-1 request, extract the data elements from the request payload;
- SHALL interpret the semantic of the request, and then determine where the data that the request required is stored;
- SHALL determine which data elements indicated in the SUPM-1 request are accessed, according to the authorization rights of the Data Consumer.

5.2 Data Translation Function

The SUPM Enabler SHALL take the responsibility of translating data format from its original format to the data format used in SUPM-1 interface, because the data extracted from various data sources may be in different format.

Data Translation Function SHALL adapt the format of the data from the data source(s) where the required data is stored to the format required on the SUPM-1 interface.

5.3 SUPM Data View Function

The SUPM Enabler MAY support SUPM Data View function. SUPM Data Views are defined as a list of data elements. They are known to SUPM component by configuration. On the SUPM-1 interface, SUPM Data Views can be used to request all data elements of these views.

6. SUPM-1 Interface

This section contains the description of the message exchange, operations and parameters which are used over SUPM-1 interface.

In the SUPM-1 interface, data elements can be specified using any combination of individual data element names or pre-defined 'data-element-group' (that is, SUPM Data View) names that correspond to a list of data element names.

6.1 Operations/messages

6.1.1 Operation: createServiceUserProfileData

This operation allows the creation of a Service User Profile for a specific user. Initial attribute values are pre-populated as part of the profile creation.

6.1.1.1 Input message: createServiceUserProfileDataRequest

Part name	Optional	Description
Originator	No	The data consumer which requests the creation of a Service User Profile for a specific user.
UserId	No	Identification of the user for whom the profile is created.
AttributeValue Pairs	No	List of attribute names and attribute values.

Table 1: Input message createServiceUserProfileDataRequest

6.1.1.2 Output message: createServiceUserProfileDataResponse

Part name	Optional	Description
ResultCode	No	Success indication or error code
ErrorMessage	Yes	Optional error diagnostic description

Table 2: Output message createServiceUserProfileDataResponse

6.1.2 Operation: readServiceUserProfileData

This operation allows the access to Service User Profile data.

6.1.2.1 Input message: readServiceUserProfileDataRequest

Part name	Optional	Description
Originator	No	The data consumer who wants to read Service User Profile data about one user.
UserId	No	Identification of the Service User Profile that is used for the readServiceUserProfileData operation.
AttributeNames	No	List of attribute names that are requested. This list may consist of one or more DataViewId(s) only, of attribute names only or can be a composition of DataViewId(s) and attribute names.

Table 3: Input message readServiceUserProfileDataRequest

6.1.2.2 Output message: readServiceUserProfileDataResponse

Part name	Optional	Description
ResultEntries	Yes	List of resultEntries including UserId and attribute list (which also includes DataViewId(s)).
ResultCode	No	Result code
ErrorMessage	Yes	Optional error diagnostic description

Table 4: Output message readServiceUserProfileDataResponse

6.1.3 Operation: updateServiceUserProfileData

This operation allows to update individual attributes of a Service User Profile for a specific user. It is required to use create (respectively delete) operation to create (respectively delete) a complete Service User Profile for a specific user.

6.1.3.1 Input message: updateServiceUserProfileDataRequest

Part name	Optional	Description
Originator	No	The data consumer who wants to operate on Service User Profile.
UserId	No	Identification of the user for whom the profile is updated.
AttributeValue Pairs	No	List of attribute names and attribute values

Table 5: Input message updateServiceUserProfileDataRequest

6.1.3.2 Output message: updateServiceUserProfileDataResponse

Part name	Optional	Description
ResultCode	No	Success indication or error code
ErrorMessage	Yes	Optional error diagnostic description

Table 6: Output message updateServiceUserProfileDataResponse

6.1.4 Operation: deleteServiceUserProfileData

This operation allows the deletion of the Service User Profile for a specific user. It is required to use the update operation to delete individual attributes of a Service User Profile.

6.1.4.1 Input message: deleteServiceUserProfileDataRequest

Part name	Optional	Description
Originator	No	The data consumer who wants to operate on Service User Profile.
UserId	No	Identification of the user for whom the Service User Profile is deleted.

Table 7: Input message deleteServiceUserProfileDataRequest

6.1.4.2 Output message: deleteServiceUserProfileDataResponse

Part name	Optional	Description
ResultCode	No	Success indication or error code
ErrorMessage	Yes	Optional error diagnostic description

Table 8: Output message deleteServiceUserProfileDataResponse

7. Security Considerations

SUPM Enabler SHALL allow Service Provider's deployment to perform the specific security features below:

- mutual authentication of the Data Consumer and SUPM Component

- integrity protection between Data Consumer and SUPM Component

- authorizing Data Consumer of operations on SUPM data, to ensure that different Data Consumers have different access control level to user data

Data Consumer and SUPM Enabler MAY support mechanisms for mutual authentication, integrity protection and authorization as specified by [SEC-CF]. When applicable, the recommended mechanisms are specified in the respective binding specifications (e.g. [SUPM-TS-LDAP]).

8. SUPM Data Views and Data Elements

8.1 Data definition principles

Following principle apply at the abstract level:

- Data element is also called attribute within this document and other SUPM Technical Specifications.

- Until a data element (for a user) is assigned a value, that data element does not actually exist – its value is "undefined". The data element (for a given user) comes into being (i.e., its value is no longer "undefined") when given a value via a CREATE or UPDATE operation. When the data element is deleted via a DELETE operation, it again becomes "undefined".

- User Profile is a set of data elements. There is exactly one User Profile per user identified by its user id.

- SUPM Data View is pre-defined arbitrary grouping of existing data elements, i.e. a subset of a User Profile.

8.2 SUPM Data Elements

The SUPM data elements are shown in the tables below.

Non optional Data Elements SHOULD be supported by any SUPM 1.0 deployment implementation. The list MAY be extended with new attributes defined outside of SUPM 1.0 Enabler.

Element Name	Optional	Reference specification	Description
country	Yes	[Profile_XDMS]	the country in which this address is located
region	Yes	[Profile_XDMS]	corresponding to the region (e.g. state, province…) in which this address is located
locality	Yes	[Profile_XDMS]	represents the locality in which this address is located (e.g. village, city, town…)
area	Yes	[Profile_XDMS]	represents the subdivision of the locality in which this address is located (e.g. neighbourhood, suburb, district…)
street-name	Yes	[Profile_XDMS]	represents the name of the street in which this address is located
street-number	Yes	[Profile_XDMS]	represents the house number in the street in which this address is located
postal-code	Yes	[Profile_XDMS]	represents the code for postal delivery (e.g. ZIP code) for this address
communication-addresses	No	[Profile_XDMS]	these elements MAY be of the following kind: SIP URI; tel URI; E.164 number; email address.
display-name	Yes	[Profile_XDMS]	containing a suggested name to display in user interfaces (e.g. in the IM buddy list) ;
birth-date	Yes	[Profile_XDMS]	containing the birth date of the User;
gender	Yes	[Profile_XDMS]	containing the gender of the User
freetext	Yes	[Profile_XDMS]	containing a description of the User

communication-types	Yes	[Profile_XDMS]	containing a list of the communication abilities of the User for human consumption
hobbies	Yes	[Profile_XDMS]	element listing the User's hobbies
favourite-links	Yes	[Profile_XDMS]	listing the User's favourite links
activities	Yes	[OMA_DDS_Presence_data_ext]	list of current user activities in free text.
location-info	Yes	[OMA_DDS_Presence_data_ext]	geographical location
place-type	Yes	[OMA_DDS_Presence_data_ext]	textual location.
time-zone	Yes	[OMA_DDS_Presence_data_ext]	time zone at the location
mood	Yes	[OMA_DDS_Presence_data_ext]	mood in free text
note	Yes	[OMA_DDS_Presence_data_ext]	presence related free text information.
title	No	[CAB_XDMS]	title (e.g., Mr., Ms., Miss.).
given	No	[CAB_XDMS]	given name.
middle	Yes	[CAB_XDMS]	middle name
family	No	[CAB_XDMS]	family name.
gen_id	Yes	[CAB_XDMS]	the generation identifier (e.g., Jr., Sr., III)
display_name	No	[CAB_XDMS]	display name that is associated with the name
anniversary-date	Yes	[CAB_XDMS]	date of the anniversary
gender	Yes	[CAB_XDMS]	gender of the user
language-list	Yes	[CAB_XDMS]	langage list of the user
media-list	Yes	[CAB_XDMS]	Media list
category-list	Yes	[CAB_XDMS]	Categories associated to the user
web-resources	Yes	[CAB_XDMS]	Uniform Resource Locator associated to the user
expertise-list	Yes	[CAB_XDMS]	As in reference specification.
hobby-list	Yes	[CAB_XDMS]	string based text description of the hobby
interests-list	Yes	[CAB_XDMS]	string based text description of the current interests

8.3   SUPM Data Views

The SUPM Data Views are shown in the table below:

SUPM Data View ID	Optional	List of data elements
Address	Yes	country, region, locality, area, street-name, street-number, postal-code
Name	Yes	title, given, middle, family, gen_id, display_name
Presence	Yes	activities, location-info, place-type, note, time-zone

Table 9: SUPM Data Views

8.3.1   Examples

This is an example of Data View and data elements.

<Address>

   <country> China </country>

   <region> Shenzhen </region>

   <locality> Longgang </locality>

   <area> Bantian </area>

   <street-name> Huawei Industrial Base </street-name>

   <street-number> F1 </street-number>

   <postal-code> 518129 </postal-code>

 </Address>

Appendix A.   Change History   (Informative)

A.1   Approved Version History

Reference	Date	Description
OMA-TS-Service_User_Profile_Management-V1_0-20120529-A	29 May 2012	Status changed to Approved by TP 　　Ref TP Doc # OMA-TP-2012-0204-INP_SUPM_V1_0_for_Final_Approval

Appendix B.   Static Conformance Requirements   (Informative)

This Service User Profile Management Technical Specification provides the abstract definition of the SUPM-1 interface. Specific protocol bindings are specified in [SUPM-TS-LDAP], [SUPM-TS-RESTful], and [SUPM-TS-SOAP]. As such, this Technical Specification does not contain any Static Conformance Requirements.

Appendix C.   SUPM Data View Deployment

This diagram shows one of many potential implementations and deployments of a SUPM enabler. This diagram shows that the implementation handles multiple data elements and SUPM Data Views. SUPM Data Views can be composed of data. The actual data can be stored in databases, other types of repositories, or can be accessed through other Resources (e.g. OMA enablers, Applications, network capabilities).

Read: User M, DE1, DE3
-> ValueM1, ValueM3

Read: User M, View1
-> ValueM1, ValueM2

Read: User N, View2, DE2
-> ValueN1, ValueN2, ValueN4

SUPM-1

SUPM

View1: DE1, DE2

View2: DE1, DE4

DE1   DE2   DE3   DE4

DB-A   Resource B   DB-C   Repository D

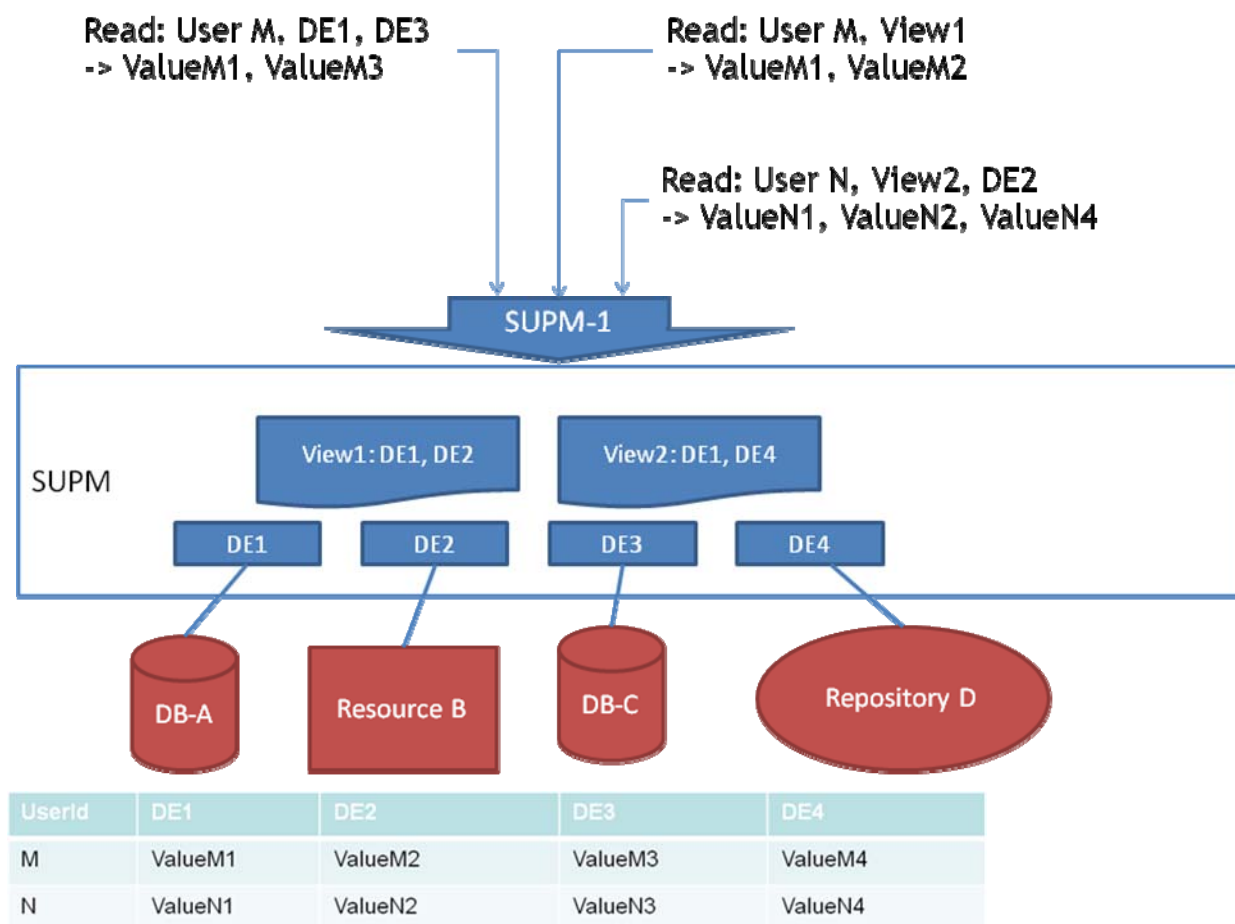| UserId	DE1	DE2	DE3	DE4
M	ValueM1	ValueM2	ValueM3	ValueM4
N	ValueN1	ValueN2	ValueN3	ValueN4

Figure 1: SUPM Data View Deployment