Service User Profile Management Technical Specification
RESTful binding for SUPM-1 interface

Candidate Version 1.0 – 11 Jan 2011

Open Mobile Alliance
OMA-TS-Service_User_Profile_Management-RESTful_Binding-V1_0-20110111-C

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1. Scope

The scope of this document is to specify an HTTP protocol binding for the set of operations defined in [SUPM-TS], using REST architectural style.

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2. References

2.1 Normative References

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[RFC2616] "Hypertext Transfer Protocol -- HTTP/1.1", R. Fielding et. al, January 1999, URL:http://www.ietf.org/rfc/rfc2616.txt

[RFC4627] "The application/json Media Type for JavaScript Object Notation (JSON)", D. Crockford, July 2006, URL: http://www.ietf.org/rfc/rfc4627.txt

[SCRRULES] "SCR Rules and Procedures", Open Mobile Alliance™, OMA-ORG-SCR_Rules_and_Procedures, URL:http://www.openmobilealliance.org/

[W3C-URLENC] W3C HTML 2.0 Specification, form-urlencoded Media Type, URL: http://www.w3.org/MarkUp/html-spec/html-spec_8.html#SEC8.2.1

[RFC4234] "Augmented BNF for Syntax Specifications: ABNF". D. Crocker, Ed., P. Overell. October 2005, URL:http://www.ietf.org/rfc/rfc4234.txt

[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-AD] "OMA Service User Profile Management Architecture", Open Mobile Alliance™, OMA-AD-Service_User_Profile_Management-V1_0, URL:http://www.openmobilealliance.org/

[SUPM-TS] "OMA Service User Profile Management Technical Specification", Open Mobile Alliance™, OMA-TS-Service_User_Profile_Management-V1_0, URL:http://www.openmobilealliance.org/

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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/

[REST_WP] "White Paper on Guidelines for ParlayREST API specifications", Open Mobile Alliance™, OMA-WP-Guidelines_for_ParlayREST_API_specifications, URL:http://www.openmobilealliance.org/

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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.

3.2 Definitions

For the purpose of this TS, all definitions from the OMA Dictionary apply [OMA-DICT].

Application	See [OMADICT]
Authorized Principal	See [OMADICT]
Principal	See [OMADICT]
Resource	See [OMADICT]
Service	See [OMADICT]
Service Provider	See [OMADICT]
Service User Profile	See [SUPM-RD]
User Profile	See [OMADICT]
User	See [OMADICT]
User’s Characteristic Description Information	See [SUPM-RD]
SUPM Data View	See [SUPM-AD]

3.3 Abbreviations

AD	Architecture Document
API	Application Programming Interface
HTTP	HyperText Transfer Protocol
JSON	JavaScript Object Notation
OMA	Open Mobile Alliance
PX	Parlay X
RD	Requirement Document
REST	REpresentational State Transfer
SCR	Static Conformance Requirements
SUPM	Service User Profile Management
TS	Technical Specification
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
XML	eXtensible Markup Language
XSD	XML Schema Definition

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4. Introduction

The Service User Profile Management (SUPM) enabler allows an authorized principal to manipulate Services User Profile Management data, i.e. any element or group of element belonging to a managed set of information related to a User that may be used to create personalized and contextualized services. The set of information may include both static and dynamic information. The SUPM enabler supports requests to read/update/create/delete Service User Profile data.

This Technical Specification contains the HTTP protocol binding for the Service User Profile Management abstract technical specification [SUPM-TS], using the REST architectural style. The specification provides resource definitions, the HTTP verbs applicable for each of these resources, and the element data structures, as well as support material including flow diagrams and examples using the two supported message body formats (i.e. XML and JSON).

4.1 Version 1.0

Version 1.0 of SUPM REST API specification supports the following operations:

- Manage (i.e. create, read, update and delete) data of single Service User Profiles
- Read Data Elements of predefined SUPM Data Views.

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5. SUPM API definition

This section is organized to support a comprehensive understanding of the SUPM API design. It specifies the definition of all resources, definition of all data structures, and definitions of all operations permitted on the specified resources.

The SUPM API allows data consumer to manage Service User Profile data and access these data using SUPM Data Views.

Common data types, naming conventions, fault definitions and namespaces are defined in [REST_TS_Common].

The remainder of this document is structured as follows:

Section 5 starts with a table listing all the resources (and their URL) used by this API, along with the data structure and the supported HTTP verbs (section 5.1). What follows are the data structures (section 5.2). A sample of typical use cases is included in section 5.3, described as high level flow diagrams.

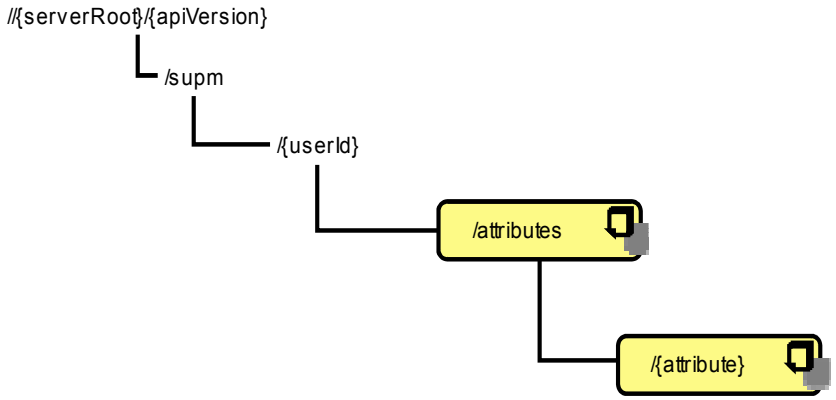
The remaining subsections in section 5 contain the detailed specification for each of the resources. Each such subsection defines the resource, the request URI variables that are common for all HTTP commands, the possible HTTP response codes, and the supported HTTP verbs. For each supported HTTP verb, a description of the functionality is provided, along with an example of a request and an example of a response. For each unsupported HTTP verb, the returned HTTP error status is specified, as well as what should be returned in the Allow header.

All examples in section 5 use XML as the format for the message body. JSON examples are provided in Appendix C. Appendix B provides the Static Conformance Requirements (SCR).

5.1 Resources Summary

This section summarizes all the resources used by the SUPM API.

The figure below visualizes the resource structure defined by this specification. Note that those nodes in the resource tree which have associated HTTP methods defined in this specification are depicted by solid boxes.



The following tables give a detailed overview of the resources defined in this specification, the data type of their representation and the allowed HTTP methods.

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Purpose: Service User Profile data Management

Resource	URL Base URL: http://{serverRoot}/{apiVersion}/supm	Data Structures	HTTP verbs			
			GET	POST	PUT	DELETE
Manage attributes for a Service User Profile	/{userId}/attributes	AttributeList (used in response to GET and in the PUT request)	Returns all attributes for a user or Data View content	No	Creates or Updates the whole user profile with the given list of attributes	Deletes the whole user profile
Manage individual attribute for a Service User Profile	/{userId}/attributes/{attribute}	Attribute (used for PUT)	Returns the user profile attribute	No	Creates or updates an attribute	No

5.2 SUPM RESTful API Data Structures

The namespace for the SUPM data types is:

urn:oma:xml:rest:supm:1

The 'xsd' namespace is used in the present document to refer to the XML Schema data types defined in XML Schema [XMLSchema1, XMLSchema2]. The 'common' namespace is used in the present document to refer to the data types defined in [REST_TS_Common]. The use of the names 'xsd' and ‘common’ is not semantically significant.

5.2.1 Type: AttributeList

Element	Type	Optional	Description
attribute	**Attribute [0..unbounded]**	**Yes**	**Contains a list of attributes.**
resourceURL	**xsd:anyURI**	**Yes**	**Self referring URL**

A root element named attributeList of type AttributeList is allowed in request and/or response bodies.

5.2.2 Type: Attribute

Element	Type	Optional	Description
attributeName	xsd:string	No	Name of the attribute or DataViewId
attributeValue	xsd:anyType	Yes	The value(s) of the attribute. Empty in case the attribute name is a DataViewId. Complex types SHALL NOT be supported.
resourceURL	xsd:anyURI	Yes	Self referring URL

A root element named attribute of type Attribute is allowed in request and response bodies.

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5.2.3 Values of the Link "rel" attribute

The "rel" attribute of the Link element is a free string set by the server implementation, to indicate a relationship between the current resource and an external resource. The following are possible strings (list is non-exhaustive, and can be extended):

- Attribute
- AttributeList

These values indicate the kind of resource that the link points to.

5.3 Sequence Diagrams

5.3.1 Manage Service User Profile data

This figure below shows various ways for accessing Service User Profile data.

The resources:

- In order to create, read, update or delete the complete Service User Profile data set use the resource

  http://{serverRoot}/{apiVersion}/supm/{userId}/attributes

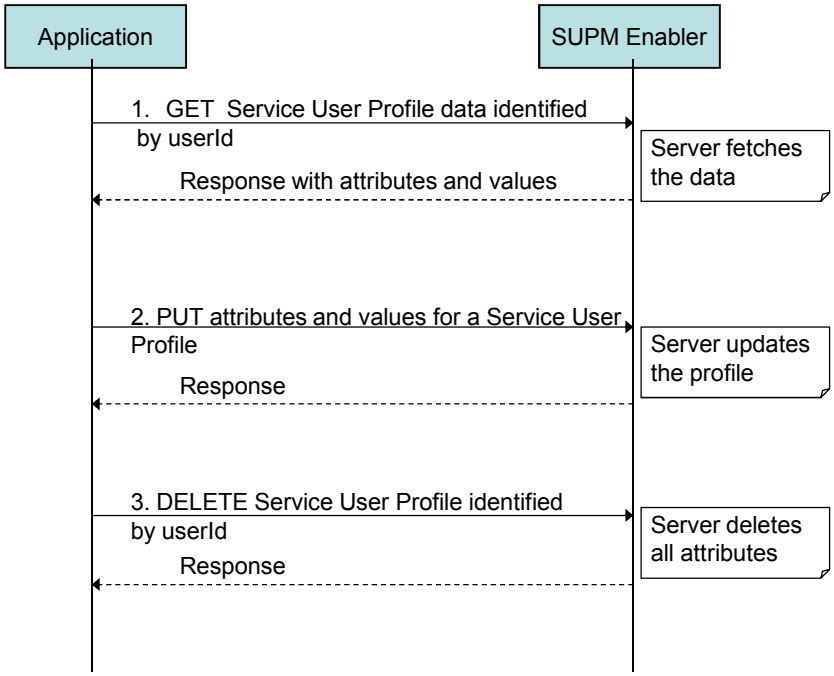

Figure 1 Manage all Service User Profile data

Outline of flow:

1. The application fetches the user profile by doing a GET on the following resource.
   http://{serverRoot}/{apiVersion}/supm/{userId}/attributes

   The result contains the list of attributes and values for the user profile.
2. The application updates the list of attributes and values of the user profile by doing a PUT on the following resource:

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http://{serverRoot}/{apiVersion}/supm/{userId}/attributes

The result was successful.

3. The application deletes the user profile by doing a DELETE on the following resource:
http://{serverRoot}/{apiVersion}/supm/{userId}/attributes

The result was successful.

5.3.2 Manage individual attributes or access attributes using SUPM Data Views for a Service User Profile

This figure below shows various ways for accessing single attributes or Data Views of a Service User Profile.

The resources:

- In order to create, read, update or delete single attributes of a Service User Profile use the resource

  http://{serverRoot}/{apiVersion}/supm/{userId}/attributes/{attribute}

- In order to read a Data View of a Service User Profile use the resource

  http://{serverRoot}/{apiVersion}/supm/{userId}/attributes/{attribute}

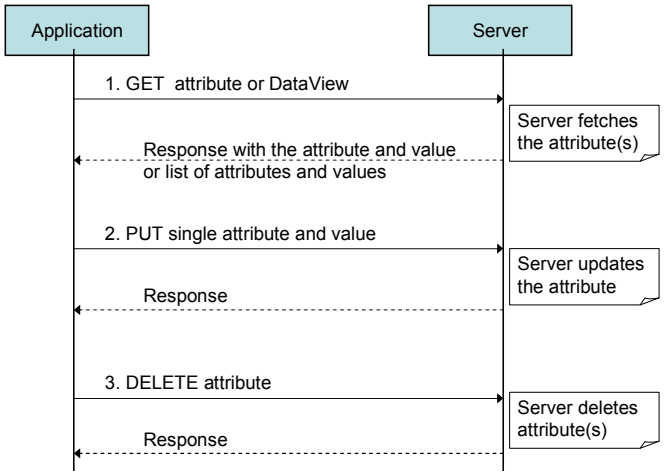

Figure 2 Accessing single attributes or Data Views of a Service User Profile

Outline of flow:

1. The application fetches a single attribute or Data View of a user profile by doing a GET on the following resource.
http://{serverRoot}/{apiVersion}/supm/{userId}/attributes/{attribute}

   The result contains either single attribute and its value or the list of attributes and values for the Data View.

2. The application updates a single attribute and its values of the user profile by doing a PUT on the following resource:
http://{serverRoot}/{apiVersion}/supm/{userId}/attributes/{attribute}

   The result was successful.

3. The application deletes a single attribute of a user profile by doing a DELETE on the following resource:
http://{serverRoot}/{apiVersion}/supm/{userId}/attributes/{attribute}

The result was successful.

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5.4 Resource: Service User Profile data Management

The resource used is:

http://{serverRoot}/{apiVersion}/supm/{userId}/attributes

The userId must be percent-encoded according to [RFC3986].

This resource is used to retrieve, update and delete all attributes belonging to a user.

5.4.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com:80/SUPMREST
apiVersion	version of the SUPMREST API clients want to use (e.g. 1 for version 1.x)
userId	Identifier of the targeted user profile. Example: tel:+4799887766 or mailto:bob@example.com

5.4.2 Response Codes

5.4.2.1 Response Codes

For HTTP response codes, see [REST_TS_Common].

5.4.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Common, see [3GPP 29.199-1].

5.4.3 GET

This operation is used for retrieval of all attributes for a given user identity.

5.4.3.1 Example: Get all attributes belonging to Bob's user profile (Informative)

Retrieve all attributes belonging to Bob's user profile, and return result in XML format.

5.4.3.1.1 Request

```
GET ../1/supm/mailto%3Abob%40example.com/attributes HTTP/1.1
Accept: application/xml
Host: example.com:80
```

5.4.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnn
Date: Thu, 09 Jun 2010 12:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
```

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```
<supm:attributeList xmlns:supm="urn:oma:xml:rest:supm:1">
  <supm:attribute>
    <supm:attributeName>Country</supm:attributeName>
    <supm:attributeValue>Austria</supm:attributeValue>
  </supm:attribute>
  <supm:attribute>
    <supm:attributeName> PreferredLang</supm:attributeName>
    <supm:attributeValue>German</supm:attributeValue>
  </supm:attribute>
  <supm:attribute>
    <supm:attributeName>Title</supm:attributeName>
    <supm:attributeValue>Mr</supm:attributeValue>
  </supm:attribute>
 <supm:resourceURL>http://example.com/1/supm/mailto%3Abob%40example.com/attributes</supm:resourceURL>
</supm:attributeList>
```

5.4.4 PUT

This operation is used for creation or update of all attributes of the Service User Profile.

5.4.4.1 Example: Create Service User Profile Data for Bob (Informative)

5.4.4.1.1 Request

```
PUT ../{apiVersion}/supm/mailto%3Abob%40example.com/attributes  HTTP/1.1
Content-Type: application/xml
Accept: application/xml
Host: example.com:80

<?xml version="1.0" encoding="UTF-8"?>
<supm:attributeList xmlns:supm="urn:oma:xml:rest:supm:1">
    <supm:attribute>
     <supm:attributeName>Country</supm:attributeName>
     <supm:attributeValue>Austria</supm:attributeValue>
  </supm:attribute>
  <supm:attribute>
     <supm:attributeName> PreferredLang</supm:attributeName>
     <supm:attributeValue>German</supm:attributeValue>
  </supm:attribute>
  <supm:attribute>
     <supm:attributeName>Title</supm:attributeName>
     <supm:attributeValue>Mr</supm:attributeValue>
  </supm:attribute>
<supm:resourceURL>http://example.com/1/supm/mailto%3Abob%40example.com/attributes</supm:resourceURL>
</supm:attributeList>
```

5.4.4.1.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location:http://example.com/1/supm/mailto%3Abob%40example.com/attributes
Date: Thu, 09 Jun 2010 12:51:59 GMT
```

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5.4.5 POST

Method not allowed by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: 'GET/PUT/DELETE' field in the response as per section 14.7 of [RFC 2616].

5.4.6 DELETE

This operation is used for deletion of a whole Service User Profile.

5.4.6.1 Example: Delete all attributes of a Service User Profile (Informative)

5.4.6.1.1 Request

```
DELETE ../{apiVersion}/supm/{userId}/attributes  HTTP/1.1
Accept: application/xml
Host: example.com:80
```

5.4.6.1.2 Response

```
HTTP/1.1 204 No Content
Date: Thu, 09 Jun 2010 12:53:23 GMT
```

5.5 Resource: Individual attribute or DataView of a Service User Profile

The resource used is:

http://{serverRoot}/{apiVersion}/supm/{userId}/attributes/{attribute}

The userId and attribute must be percent-encoded according to [RFC3986].

This resource is used to manage attributes of Service User Profile, which include creation, update, retrieval, and delete operations for the attributes.

5.5.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com:80/SUPMREST
apiVersion	version of the SUPMREST API clients want to use (e.g. 1 for version 1.x)
userId	identifier of the targeted user profile. Example: tel:+4799887766 or mailto:bob@example.com
Attribute	Name of the attribute. Example: Country

5.5.2 Response Codes

5.5.2.1 Response Codes

For HTTP response codes, see [REST_TS_Common].

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5.5.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Common, see [3GPP 29.199-1].

5.5.3 GET

This operation is used for retrieval of the value for a given attribute or for the retrieval of a Data View.

5.5.3.1 Example 1: Retrieve an attribute value (Informative)

5.5.3.1.1 Request

```
GET ../{apiVersion}/supm/{userId}/attributes/Country HTTP/1.1
Accept: application/xml
Host: example.com:80
```

5.5.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnn
Date: Thu, 09 Jun 2010 12:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<supm:attribute xmlns:supm="urn:oma:xml:rest:supm:1">
  <supm:attributeName>Country</supm:attributeName>
  <supm:attributeValue>Austria</supm:attributeValue>
</supm:attribute>
```

5.5.3.2 Example 2: Retrieve a non existing attribute (Informative)

5.5.3.2.1 Request

```
GET ../{apiVersion}/supm/{userId}/attributes/ServiceLevel HTTP/1.1
Accept: application/xml
Host: example.com:80
```

5.5.3.2.2 Response

```
HTTP/1.1 404 Not Found
Content-Type: application/xml
Content-Length: nnn
Date: Thu, 09 Jun 2010 12:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<common:requestError xmlns:common="urn:oma:xml:rest:common:1">

  <serviceException>
    <messageId>SVC0002</messageId>
    <text>Invalid input value for message part %1</text>
    <variables>ServiceLevel</variables>
  </serviceException>
</common:requestError>
```

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5.5.4 PUT

This operation is used for creation or update of an attribute.

5.5.4.1 Example: Create an attribute (Informative)

5.5.4.1.1 Request

```
PUT ../{apiVersion}/supm/{userId}/attributes/Country  HTTP/1.1
Content-Type: application/xml
Accept: application/xml
Host: example.com:80

<?xml version="1.0" encoding="UTF-8"?>
<supm:attribute xmlns:supm="urn:oma:xml:rest:supm:1">
  <supm:attributeName>Country</supm:attributeName>
  <supm:attributeValue>Austria</supm:attributeValue>
</supm:attribute>
```

5.5.4.1.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location:http://{serverRoot}/{apiVersion}/supm/{userId}/attributes/Country
Date: Thu, 09 Jun 2010 12:51:59 GMT
```

5.5.5 POST

Method not allowed by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: 'GET/PUT/DELETE' field in the response as per section 14.7 of [RFC 2616].

5.5.6 DELETE

This operation deletes an attribute.

5.5.6.1 Example: Delete an attribute (Informative)

5.5.6.1.1 Request

```
DELETE ../{apiVersion}/supm/{userId}/attributes/Country  HTTP/1.1
Accept: application/xml
Host: example.com:80
```

5.5.6.1.2 Response

```
HTTP/1.1 204 No Content
Date: Thu, 09 Jun 2010 12:53:23 GMT
```

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Appendix A. Change History (Informative)

A.1 Approved Version History

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

A.2 Draft/Candidate Version 1.0 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-TS-Service_User_Profile_Management_RESTful_Binding-V1_0	12 May 2010	All	Baseline document agreed in: OMA-ARC-SUPM-2010-0070R02-INP_draft_version_TSs_for_REST_and_SOAP_uses_on_SUPM_1
	30 Aug 2010	All	Incorporated: OMA-ARC-SUPM-2010-0134R01-CR_Scope_and_Intro_for_REST_TS OMA-ARC-SUPM-2010-0135R01-CR_Resources_and_data_structures_for_REST_TS OMA-ARC-SUPM-2010-0136R02-CR_Examples_for_REST_TS OMA-ARC-SUPM-2010-0137R01-CR_Flows_for_REST_TS OMA-ARC-SUPM-2010-0138R01-CR_SCR_tables_for_REST_TS
	16 Nov 2010	All	Incorporated: OMA-ARC-SUPM-2010-0161R02-CR_CONR_Resolution_F001toF008_F012toF013_F015toF017_F019toF020; OMA-ARC-SUPM-2010-0165R03-CR_CONR_Resolution_F009toF011_F014_F018_F021. OMA-ARC-SUPM-2010-0170R02-CR_CONR_Resolution_F018.
	19 Nov 2010	App B	Incorporated: OMA-ARC-SUPM-2010-0170R02-CR_CONR_Resolution_F018
	01 Dec 2010	All	OMA-ARC-SUPM-2010-0189R01-CR_REST_TS_URN_SUP_and_Resource_update OMA-ARC-SUPM-2010-0188-CR_REST_Examples_issues_from_INP_184
	03 Dec 2010	5.4.4.1.1	Added missing implementation of OMA-ARC-SUPM-2010-0188-CR_REST_Examples_issues_from_INP_184
	06 Dec 2010	All	Editorial fixes: cover page, styles
	15 Dec 2010	5.4.4.1.1	AI SUPM-2010-A061 to remove an extra space character.
Candidate Version: OMA-TS-Service_User_Profile_Management_RESTful_Binding-V1_0	11 Jan 2011	All	Status changed to Candidate by TP: OMA-TP-2010-0530-INP_SUPM_V1_0_ERP_for_Candidate_Approval

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Appendix B. Static Conformance Requirements (Normative)

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

B.1 SCR for SUPM.REST Server

Item	Function	Reference	Requirement
SUPM-REST-SUPPORT-S-001-M	Support for the RESTful binding of SUPM-1 interface	5	
SUPM-REST-SUPPORT-S-002-M	Support for the XML request & response format	5	

B.2 SCR for SUPM.REST.AttributesForUserProfile Server

Item	Function	Reference	Requirement
SUPM-REST-ATTRIB-S-001-M	Management support for all attributes for a given user profile.	5.4	
SUPM-REST-ATTRIB-S-002-M	This operation creates a Service User profile - PUT	5.4.4	
SUPM-REST-ATTRIB-S-003-M	This operation returns all attributes - GET	5.4.3	
SUPM-REST-ATTRIB-S-004-M	This operation updates all the attributes – PUT	5.4.4	
SUPM-REST-ATTRIB-S-005-M	This operation deletes a Service User Profile - DELETE	5.4.6	

B.3 SCR for SUPM.REST.IndividualAttributesOfUserProfile Server

Item	Function	Reference	Requirement
SUPM.REST-IND-ATTRIB-S-001-O	Support for management (create, update, retrieve and delete) of individual attributes for a user profile	5.5	
SUPM-REST-IND-ATTRIB-S-002-M	This operation returns the value of an user profile attribute -GET	5.5.3	
SUPM.REST-IND-ATTRIB-S-003-M	This operation creates or updates an attribute of an user profile - PUT	5.5.4	
SUPM.REST-IND-ATTRIB-S-004-O	This operation deletes an attribute of an user profile - DELETE	5.5.6	

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B.4 SCR for SUPM.REST.DataViewsOfUserProfile Server

Item	Function	Reference	Requirement
SUPM.REST-DV-S-001-O	Support for operations (retrieve) for a Data View of an user profile	5.5	SUPM.REST-DV-S-002-O
SUPM-REST-DV-S-002-O	This operation returns the list of attributes and values of a Data View of an user profile -GET	5.5.3	

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Appendix C. JSON examples (Informative)

JSON (JavaScript Object Notation) is a lightweight, text-based, language-independent data interchange format. It provides a simple means to represent basic name-value pairs, arrays and objects. JSON is relatively trivial to parse and evaluate using standard JavaScript libraries, and hence is suited for Parlay REST invocations from browsers or other processors with JavaScript engines. Further information on JSON can be found at [RFC 4627].

The following examples show the request or response for various operations using a JSON binding. The examples follow the XML to JSON serialization guidelines in [REST_WP]. A JSON response may be obtained by following the content negotiation guidelines section of [REST_WP].

C.1 Get all attributes of Service User profile

Retrieve all attributes of a Service User Profile and return result in JSON format.

```
GET ../{apiVersion}/supm/{userId}/attributes HTTP/1.1
Accept: application/json
Host: example.com:80
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnn
Date: Thu, 09 Jun 2010 12:51:59 GMT

{
   attributelist:{
      resourceurl:'http://example.com/1/supm/{userId}/attributes',
      attribute:[
         {
            attributename:'Country',
            attributevalue:'Austria'
         },
         {
            attributename:' PreferredLang',
            attributevalue:'German'
         },
         {
            attributename:'Title',
            attributevalue:'Mr'
         }
      ]
   }
}
```

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C.2 Retrieve an attribute value

This operation is used for retrieval of the value for a given attribute or for the retrieval of a Data View.

```
GET ../{apiVersion}/supm/{userId}/attributes/Country HTTP/1.1
Accept: application/json
Host: example.com:80
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnn
Date: Thu, 09 Jun 2010 12:51:59 GMT

{  attribute:{
      attributename:'Country',
      attributevalue:'Austria'
   }
}
```

C.3 Retrieve a non existing attribute

This operation is used for retrieval of a non existing attribute or for the retrieval of a non existing Data View.

```
GET ../{apiVersion}/supm/{userId}/attributes/ServiceLevel HTTP/1.1
Accept: application/json
Host: example.com:80
```

Response:

```
HTTP/1.1 404 Not Found
Content-Type: application/json
Content-Length: nnn
Date: Thu, 09 Jun 2010 12:51:59 GMT

{
   requesterror:{
      serviceexception:{
         messageid:'SVC0002',
         text:'Invalid input value for message part %1',
         variables:'ServiceLevel'
      }
   }
}
```

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C.4 Create a Service User Profile

This operation is used for creation or update of all attributes of the Service User Profile.

```
PUT ../{apiVersion}/supm/{userId}/attributes  HTTP/1.1
Content-Type: application/json
Accept: application/json
Host: example.com:80

{
   attributelist:{
      resourceurl:'http://example.com/1/supm/{userId}/attributes',
      attribute:[
         {
            attributename:'Country',
            attributevalue:'Austria'
         },
         {
            attributename:' PreferredLang',
            attributevalue:'German'
         },
         {
            attributename:'Title',
            attributevalue:'Mr'
         }
      ]
   }
}
```

Response:

```
HTTP/1.1 201 Created
Content-Type: application/json
Location:http://example.com/1/supm/{userId}/attributes

Date: Thu, 09 Jun 2010 12:51:59 GMT
```

C.5 Create an attribute

This operation is used for creation or update of an attribute:

```
PUT ../{apiVersion}/supm/{userId}/attributes/Country  HTTP/1.1
Content-Type: application/json
Accept: application/json
Host: example.com:80

{   attribute:{
      attributename:'Country',
      attributevalue:'Austria'
   }
}
```

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Response:

```
HTTP/1.1 201 Created
Content-Type: application/json
Location:http://example.com/1/supm/{userId}/attributes
Date: Thu, 09 Jun 2010 12:51:59 GMT
```

C.6 Delete all attributes of a Service User Profile

This operation deletes all attributes of a Service User Profile:

```
DELETE ../{apiVersion}/supm/{userId}/attributes  HTTP/1.1
Accept: application/json
Host: example.com:80
```

Response:

```
HTTP/1.1 204 No Content
Date: Thu, 09 Jun 2010 12:53:23 GMT
```

C.7 Delete an attribute

This operation deletes an attribute.

```
DELETE ../{apiVersion}/supm/{userId}/attributes/Country  HTTP/1.1
Accept: application/json
Host: example.com:80
```

Response:

```
HTTP/1.1 204 No Content
Date: Thu, 09 Jun 2010 12:53:23 GMT
```

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