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Profile XDM Specification
Approved Version 1.1 – 03 Apr 2012

Open Mobile Alliance
OMA-TS-XDM_Profile-V1_1-20120403-A

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1. Scope

This specification describes the data format and Application Usage for the User Profile Document, which can be used by all OMA Enablers.

The User Profile Document contains user information that is stored in the network. Typical ways to use it are through search queries to discover communication partners (e.g.chat) or through requests to obtain information about a specific user.

2. References

2.1 Normative References

OMA

[Dict]	"Dictionary for OMA Specifications", Version 2.7, Open Mobile Alliance™, OMA-ORG-Dictionary-V2_7, URL: http://www.openmobilealliance.org/
[SCRRULES]	"SCR Rules and Procedures", Version 1.0, Open Mobile Alliance™, OMA-ORG-SCR_Rules_and_Procedures-V1_0, URL: http://www.openmobilealliance.org/
[XDM_Core]	"XML Document Management (XDM) Specification", Version 2.1, Open Mobile Alliance™, OMA-TS-XDM_Core-V2_1, URL: http://www.openmobilealliance.org/
[XSD_userProfile]	"XML Schema Definition: XDM User Profile", Version 1.0, Open Mobile Alliance™, OMA-SUP-XSD_xdm_userProfile-V1_0, URL: http://www.openmobilealliance.org/

IETF

[RFC2119]	IETF RFC 2119 "Key words for use in RFCs to Indicate Requirement Levels", S. Bradner, March 1997, URL: http://www.ietf.org/rfc/rfc2119.txt
[RFC3261]	IETF RFC 3261 "SIP: Session Initiation Protocol", J. Rosenberg, H. Schulzrinne, G. Camarillo, A. Johnston, J. Peterson, R. Sparks, M. Handley, E. Schooler, June 2002, URL: http://www.ietf.org/rfc/rfc3261.txt
[RFC3966]	IETF RFC 3966 "The tel URI for Telephone Numbers", H. Schulzrinne, December 2004, URL: http://www.ietf.org/rfc/rfc3966.txt
[RFC4825]	IETF RFC 4825 "The Extensible Markup Language (XML) Configuration Access protocol (XCAP)", J. Rosenberg, May 2007, URL: http://www.ietf.org/rfc/rfc4825.txt

ISO

[ISO3166-1]	ISO 3166-1: Codes for the Representation of Names of Countries and their Subdivisions – Part 1: Country Codes, 2006, URL: http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=39719

2.2 Informative References

OMA

[XDM_AD]	"XML Document Management Architecture", Version 2.1, Open Mobile Alliance™, OMA-AD-XDM-V2_1, URL: http://www.openmobilealliance.org/

3. Terminology and Conventions

3.1 Conventions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except "Scope" and "Introduction", are normative, unless they are explicitly indicated to be informative.

3.2 Definitions

Access Permissions	Use definition from [XDM_RD].
Access Permissions Document	Use definition from [XDM_Core].
Application Server	Use definition from [XDM_Core].
Application Unique ID	Use definition from [XDM_Core].
Application Usage	Use definition from [XDM_Core].
Document Reference	Use definition from [XDM_AD].
Document URI	Use definition from [XDM_Core].
Enabler	Use definition from [Dict].
Global Document	Use definition from [XDM_Core].
Locked User Profile Document	Use definition from [XDM_AD].
Service Provider	Use definition from [Dict].
Tel URI	Use definition from [XDM_Core].
User	Use definition from [Dict].
User Address	Use definition from [XDM_Core].
User Profile Document	Use definition from [XDM_AD].
Users Tree	Use definition from [XDM_Core].
XCAP Resource	Use definition from [XDM_Core].
XCAP Root	Use definition from [XDM_Core].
XCAP Server	Use definition from [XDM_Core].
XCAP User Identifier	Use definition from [XDM_Core].
XDM Agent	Use definition from [XDM_AD].
XDMC	Use definition from [XDM_AD].
XDM Preferences	Use definition from [XDM_Core].
XDM Preferences Document	Use definition from [XDM_Core].
XDMS	Use definition from [XDM_AD].

3.3 Abbreviations

ABNF	Augmented Backus-Naur Form
AUID	Application Unique ID

HTTP	Hypertext Transfer Protocol
IETF	Internet Engineering Task Force
IM	Instant Messaging
MIME	Multipurpose Internet Mail Extensions
OMA	Open Mobile Alliance
SCR	Static Conformance Requirements
SIP	Session Initiation Protocol
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
XCAP	XML Configuration Access Protocol
XDM	XML Document Management
XDMC	XDM Client
XDMS	XDM Server
XML	Extensible Markup Language
XUI	XCAP User Identifier

4. Introduction

This specification provides the Application Usage for the User Profile Document, which can be searched by Users and Application Servers to find the User Address (and possibly other information) about Users matching a certain criteria.

The Profile XDMS (see [XDM_AD]) is the logical repository for User Profile documents. The common protocol specified in [XDM_Core] is used for access and manipulation of such documents by authorized principals.

4.1 Version 1.0

The version 1.0 is called "Shared Profile XDMS" and specifies:

- Application Usages for User Profile and locked User Profile;
- their naming conventions, data semantics, schema and validation constraints; and
- subscription to changes in XDM Documents.

4.2 Version 1.1

The version 1.1 is renamed to "Profile XDMS". It includes the functionality of version 1.0 and applies new features as described in [XDM_Core] section "V*ersion 2.1*" for its Application Usages.

5. Profile XDM Application Usages

5.1   User Profile

5.1.1   Structure

The User Profile Document SHALL conform to the structure described in this section. The schema definition is provided in section 5.1.3.

The <user-profile> element:

- a)   SHALL include a "uri" attribute that contains the XUI of the User for whom this User Profile is intended;

- b)   MAY include any other attribute for the purposes of extensibility;

- c)   MAY include a <communication-addresses> element, containing a list of elements representing the communication associated with the User. These elements MAY be of the following kind:

    - 1)   SIP URI as defined in [RFC3261];

    - 2)   Tel URI as defined in [RFC3966];

    - 3)   E.164 number;

    - 4)   email address.

- d)   MAY include a <display-name> element, containing a suggested name to display in user interfaces (e.g. in the IM buddy list) ;

- e)   MAY include a <birth-date> element, containing the birth date of the User;

- f)   MAY include a <name> element containing the human identity of the User. It MAY contain:

    - 5)   a <given-name> element;

    - 6)   a <family-name> element;

    - 7)   a <middle-name> element;

    - 8)   a <name-suffix> element;

    - 9)   a <name-prefix> element;

    - 10)   any other elements from any other namespaces for the purpose of extensibility.

- g)   MAY include an <address> element containing a postal address of the User. It MAY contain:

    - 1)   a <country> element, corresponding to the country in which this address is located;

    - 2)   a <region> element, corresponding to the region (e.g. state, province…) in which this address is located;

    - 3)   a <locality> element, which represents the locality in which this address is located (e.g. village, city, town…);

    - 4)   an <area> element, which represents the subdivision of the locality in which this address is located (e.g. neighbourhood, suburb, district…);

    - 5)   a <street-name> element, which represents the name of the street in which this address is located;

    - 6)   a <street-number> element, which represents the house number in the street in which this address is located;

7) a <postal-code> element, which represents the code for postal delivery (e.g. ZIP code) for this address; and

8) any other elements from any other namespaces for the purpose of extensibility.

h) MAY include a <gender> element, containing the gender of the User;

i) MAY include a <freetext> element containing a description of the User;

j) MAY include a <communication-types> element containing a list of the communication abilities of the User for human consumption;

k) MAY include a <hobbies> element listing the User's hobbies;

l) MAY include a <favourite-links> element listing the User's favourite links; and

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

5.1.2 Application Unique ID

The AUID SHALL be "org.openmobilealliance.user-profile".

5.1.3 XML Schema

The User Profile Document SHALL be composed according to the XML schema described in [XSD_userProfile].

5.1.4 Default Namespace

The default namespace used in expanding URIs SHALL be "urn:oma:xml:xdm:user-profile" defined in section 5.1.3.

5.1.5 MIME Type

The MIME type for the User Profile Document SHALL be "application/vnd.oma.user-profile+xml".

5.1.6 Validation Constraints

The User Profile Document SHALL conform to the XML Schema described in section 5.1.3 "*XML Schema*", with the clarifications given in this section.

The value of the "uri" attribute of the <user-profile> element SHALL be the same as the XUI value of the Document URI for the User Profile Document. If not, the XDMS SHALL return an HTTP "409 Conflict" response as described in [RFC4825], including the <constraint-failure> error element. If included, the "phrase" attribute SHOULD be set to "Wrong User Profile URI".

5.1.7 Data Semantics

The value of the "uri" attribute in the <user-profile> element SHALL represent a valid User Address for communication, as well as an XUI that can be used as a path segment to retrieve the User Profile Document.

The <country> element SHALL be used to indicate the country using a two-letter "Alpha-2" format, as specified in [ISO3166-1].

5.1.8 Naming Conventions

The name of User Profile Document SHALL be "user-profile".

5.1.9 Global Documents

Not applicable.

5.1.10   Resource Interdependencies

This Application Usage defines no additional resource interdependencies.

5.1.11   Authorization Policies

The authorization policies for manipulating a User Profile Document SHALL conform to those described in [XDM_Core] section 5.1.5 *"Authorization"* with the following exceptions:

   a) Principals SHALL have permission to perform retrieve operations of any User Profile Document in the Users Tree;

   b) Principals SHALL have permission to perform subscribing to changes operations of any User Profile Document in the Users Tree.

Principals SHALL have permission to perform seach operations of any collection of User Profile Documents in the Users Tree.

5.1.12   Subscription to Changes

The User Profile Application Usage SHALL support suscription to changes as specified in [XDM_Core] section "*Subscriptions to changes in the XDM Resources*".

5.1.13   Search Capabilities

The User Profile Application Usage MAY support searching User Profile Document. If the search feature is supported, it SHALL be possible to search for contacts based on the data stored in User Profiles, and the following rules apply:

The Profile XDMS SHALL support a collection "org.openmobilealliance.user-profile/users/", a collection "org.openmobilealliance.user-profile/users/[XUI]/" and a collection "org.openmobilealliance.user-profile/users/[XUI]/<document name>" as defined in [XDM_Core].

The basic XQuery expression [XDM_Core] supported by the Profile XDMS for this Application Usage SHALL be as follows:

> xquery version "1.0";
>
> declare default element namespace "urn:oma:xml:xdm:user-profile";
>
>
> for $g in collection(***[Data_Source]***)/user-profiles/user-profile
>
> where ***[Condition]***
>
> return <user-profile>{$g/@uri} {$g/display-name} </user-profile>

where:

[***Data_Source***] represents collection that SHALL be searched. In case that the value:

* "org.openmobilealliance.user-profile/users/" is used, the Search SHALL be executed over all User Profile Documents stored in the Profile XDMS.

* "org.openmobilealliance.user-profile/users/[XUI]/" is used, the Search SHALL be executed over the User Profile Document stored in the home directory of the User identified by XUI.

* "org.openmobilealliance.user-profile/users/[XUI]/<document name>" is used, the Search SHALL be executed over the User Profile Document identified by <document name>.

 [***Condition***] represents a logical expression defined by the XDMC or the XDM Agent. It MAY include any combination of elements/attributes from the User Profile Document.

Example of the Condition:

($g/user-information/hobbies/hobby="Football")and($g/user-information/address/country="JP")

All Search Requests that does not comply with the basic XQuery expression as defined in this section SHALL be responded with an HTTP "409 Conflict" error response as defined by [XDM_Core].

The User Profile Application Usage MAY support search capability for searching:

- The Modification History Information Document as described in [XDM_Core] section "*Modification History Information Document*"; and

- The Request History Information Document as described in [XDM_Core] section "*Request History Information Document*".

5.1.14   XDM Preferences Document

The User Profile Application Usage SHALL support an XDM Preferences Document as described in [XDM_Core] section "*XDM Preferences Document*" if it supports History Information Documents as described in section 5.1.14.

5.1.15   History Information Documents

The User Profile Application Usage MAY support a Modification History Information Document as described in [XDM_Core] section "*Modification History Information Document*" for a URI List Document.

The User Profile Application Usage MAY support a Request History Information Document as described in [XDM_Core] section "*Request History Information Document*".

5.1.16   Forwarding

Not applicable.

5.1.17   Restore

The User Profile Application Usage MAY support restore of a User Profile Document as described in [XDM_Core] section "*XDM Restore*".

5.1.18   Document Reference

The User Profile Application Usage MAY support Document Reference of a User Profile Document as described in [XDM_Core] section "*Document Reference*".

5.1.19   Differential Read and Write

The User Profile Application Usage MAY support Differential Write as described in [XDM_Core] section "*Differential Write*". A Differential Write request including a <filter-set> element is not supported.

The User Profile Application Usage MAY support Differential Read as described in [XDM_Core] section "*Differential Read*".

5.2   Locked User Profile

5.2.1   Structure

The Locked User Profile Document SHALL conform to the structure described in this section. The schema definition is provided in section 5.2.3.

The <user-profile> element:

    a)   SHALL include a <birth-date> element containing the birth date of the user;

    b)   MAY include any other elements from any other namespaces for the purposes of extensibility; and

    c)   MAY include any attribute for the purposes of extensibility.

5.2.2 Application Unique ID

The AUID SHALL be "org.openmobilealliance.locked-user-profile".

5.2.3 XML Schema

Locked User Profile Document SHALL be composed according to the XML schema described in [XSD_userProfile].

5.2.4 Default Namespace

The default namespace used in expanding URIs SHALL be "urn:oma:xml:xdm:user-profile" defined in section 5.2.3.

5.2.5 MIME Type

The MIME type for the Locked User Profile Document SHALL be "application/vnd.oma.user-profile+xml".

5.2.6 Validation Constraints

Not applicable.

5.2.7 Data Semantics

The <birth-date> element SHALL express the date of birth of the user as provisioned by the Service Provider.

5.2.8 Naming Conventions

The name of the Locked User Profile Document SHALL be "lockedprofile".

5.2.9 Global Documents

Not applicable.

5.2.10 Resource Interdependencies

Not applicable.

5.2.11 Authorization Policies

The Service Provider SHALL be the only entity allowed to create the Locked User Profile Document on behalf of the Primary Principal. The Service Provider SHALL have all permissions on this XDM Document. The Primary Principal SHALL only have the read permission to this XDM Document.

5.2.12 Subscription to Changes

Not applicable.

5.2.13 Search Capabilities

Not applicable.

5.2.14   XDM Preferences Document

Not applicable.

5.2.15   History Information Documents

Not applicable.

5.2.16   Forwarding

Not applicable.

5.2.17   Restore

Not applicable.

5.2.18   Document Reference

Not applicable.

5.2.19   Differential Read and Write

Not applicable.

6. Subscribing to changes in the XDM Resources

Refer to section "Subscription to Changes" in each Application Usage.

Appendix A.   Change History   (Informative)

A.1   Approved Version 1.1 History

Reference	Date	Description
OMA-TS-XDM_Profile-V1_1-20120403-A	03 Apr 2012	Status changed to Approved by TP: OMA-TP-2012-0136-INP_XDM_V2_1_ERP_for_Final_Approval

Appendix B.   Static Conformance Requirements   (Normative)

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

The SCR's defined in the following tables include SCR for:

- User Profile XDM Application Usages

B.1   Profile XDM Application Usages (XDMS)

Item	Function	Reference	Requirement
XDM_UP-AU-S-001-M	Support User Profile Document structure (XDMv2.0)	5.1.1	XDM_Core-XOP-S-001-M
XDM_UP-AU-S-002-M	Support Application Unique ID in User Profile Application Usage (XDMv2.0)	5.1.2	
XDM_UP-AU-S-003-M	Support XML schema of User Profile Document (XDMv2.0)	5.1.3	
XDM_UP-AU-S-004-M	Support MIME type of User Profile Document (XDMv2.0)	5.1.5	
XDM_UP-AU-S-005-M	Support validation constraints (XDMv2.0)	5.1.6	
XDM_UP-AU-S-006-M	Support data semantics of User Profile Document (XDMv2.0)	5.1.7	
XDM_UP-AU-S-007-M	Support naming conventions for User Profile Document (XDMv2.0)	5.1.8	
XDM_UP-SEC-S-001-M	Support the default Authorization policy for accessing a User Profile Document (XDMv2.0)	5.1.11	XDM_Core-SEC-S-001-M
XDM_UP-SEC-S-002-O	Support Authorization policies defined in an Access Permissions Document governing access to a User Profile Document (XDMv2.1)		XDM_Core-SEC-S-002-M
XDM_UP-SUB-S-001-O	Support Subscribing to changes in User Profile Document (XDMv2.1)	5.1.12	XDM_Core-SUB-S-001-O AND XDM_Core-SUB-S-002-O
XDM_UP-SRC-S-001-O	Support Search in Modification History Document (XDMv2.1)	5.1.13	XDM_Core-SRC-S-004-O AND XDM_UP-MHI-S-001-O
XDM_UP-SRC-S-002-O	Support Search in Request History Information Document (XDMv2.1)	5.1.13	XDM_Core-SRC-S-005-O AND XDM_UP-RHI-S-001-O
XDM_UP-PRF-S-001-O	Support XDM Preferences Document (XDMv2.1)	5.1.14	XDM_Core-PRF-S-001-O AND (XDM_UP-MHI-S-001-O OR XDM_UP-RHI-S-001-O)
XDM_UP-MHI-S-010-O	Support Modification History Information Document (XDMv2.1)	5.1.15	XDM_Core-MHI-S-001-O AND XDM_UP-PRF-S-001-O
XDM_UP-RHI-S-001-O	Support Request History Information Document (XDMv2.1)	5.1.15	XDM_Core-RHI-S-001-O
XDM_UP-RES-S-001-O	Support Restore of User Profile Document (XDMv2.1)	5.1.17	XDM_Core-RES-S-001-O
XDM_UP-REF-S-001-O	Support Document Reference of User Profile Document (XDMv2.1)	5.1.18	XDM_Core-REF-S-001-O

Item	Function	Reference	Requirement
XDM_UP-DIFF-S-001-O	Support Differential Read of User Profile Document (XDMv2.1)	5.1.19	XDM_Core-DIFF-S-003-O
XDM_UP-DIFF-S-002-O	Support Differential Write of User Profile Document (XDMv2.1)	5.1.19	XDM_Core-DIFF-S-002-O
XDM_LUP-AU-S-001-M	Support Locked User Profile Document structure (XDMv2.0)	5.2.1	XDM_Core-AU-S-001-M
XDM_LUP-AU-S-002-M	Support Application Unique ID in Locked User Profile Application Usage (XDMv2.0)	5.2.2	
XDM_LUP-AU-S-003-M	Support XML schema of Locked User Profile Document (XDMv2.0)	5.2.3	
XDM_LUP-AU-S-004-M	Support MIME type of Locked User Profile Document (XDMv2.0)	5.2.5	
XDM_LUP-AU-S-005-M	Support validation constraints (XDMv2.0)	5.2.6	
XDM_LUP-AU-S-006-M	Support data semantics of Locked User Profile Document (XDMv2.0)	5.2.7	
XDM_LUP-AU-S-007-M	Support naming conventions for Locked User Profile Document (XDMv2.0)	5.2.8	
XDM_LUP-SEC-S-001-M	Support authorization policies of Locked User Profile Document (XDMv2.0)	5.2.11	XDM_Core-SEC-S-001-M

B.2 Profile XDM Application Usages (XDMC)

Item	Function	Reference	Requirement
XDM_UP-AU-C-001-O	Support User Profile Application Usage (XDMv2.0)	5.1	XDM_UP-AU-C-002-O AND XDM_UP-AU-C-003-O AND XDM_UP-AU-C-004-O AND XDM_UP-AU-C-005-O AND XDM_UP-AU-C-006-O AND XDM_UP-AU-C-007-O AND XDM_UP-AU-C-008-O
XDM_UP-AU-C-002-O	Support User Profile Document structure (XDMv2.0)	5.1.1	XDM_Core-XOP-C-003-M AND XDM_UP-AU-C-001-O
XDM_UP-AU-C-003-O	Support Application Unique ID in User Profile Application Usage (XDMv2.0)	5.1.2	XDM_UP-AU-C-001-O
XDM_UP-AU-C-004-O	Support XML schema of User Profile Document (XDMv2.0)	5.1.3	XDM_UP-AU-C-001-O
XDM_UP-AU-C-005-O	Support MIME type of User Profile Document (XDMv2.0)	5.1.5	XDM_UP-AU-C-001-O
XDM_UP-AU-C-006-O	Support validation constraints (XDMv2.0)	5.1.6	XDM_UP-AU-C-001-O
XDM_UP-AU-C-007-O	Support data semantics of User Profile Document (XDMv2.0)	5.1.7	XDM_UP-AU-C-001-O
XDM_UP-AU-C-008-O	Support naming conventions for User Profile Document (XDMv2.0)	5.1.8	XDM_UP-AU-C-001-O
XDM_UP-SUB-C-001-O	Support Subscribing to changes in User Profile Document (XDMv2.1)	5.1.12	XDM_UP-XOP-C-001-O AND XDM_Core-SUB-C-001-O AND XDM_Core-SUB-C-002-O
XDM_UP-SRC-C-001-O	Support search procedures for User Profile Document (XDMv2.0)	5.1.13	XDM_Core-SRC-C-001-O AND XDM_Core-SRC-C-002-O

Item	Function	Reference	Requirement
XDM_UP-SRC-C-002-O	Support search capabilities (XDMv2.0)	5.1.13	XDM_UP-SRC-C-001-O
XDM_UP-SRC-C-003-O	Support Search in Modification History Information (XDMv2.1)	5.1.13	XDM_UP-XOP-C-001-O AND XDM_Core-SRC-C-004-O
XDM_UP-SRC-C-004-O	Support Search in Request History Information (XDMv2.1)	5.1.13	XDM_UP-XOP-C-001-O AND XDM_Core-SRC-C-005-O
XDM_UP-PRF-C-001-O	Support XDM Preferences Document (XDMv2.1)	5.1.14	XDM_UP-AU-C-001-O AND XDM_Core-PRF-C-001-O
XDM_UP-MHI-C-001-O	Support Modification History Information Document (XDMv2.1)	5.1.15	XDM_UP-AU-C-001-O AND XDM_Core-MHI-C-001-O
XDM_UP-RHI-C-001-O	Support Request History Information Document (XDMv2.1)	5.1.15	XDM_UP-AU-C-001-O AND XDM_Core-RHI-C-001-O
XDM_UP-RES-C-001-O	Support Restore of User Profile Document (XDMv2.1)	5.1.17	XDM_UP-AU-C-001-O AND XDM_Core-RES-C-001-O
XDM_UP-REF-C-001-O	Support Document Reference of User Profile Document (XDMv2.1)	5.1.18	XDM_UP-AU-C-001-O AND XDM_Core-REF-C-001-O
XDM_UP-DIFF-C-001-O	Support Differential Read of User Profile Document (XDMv2.1)	5.1.19	XDM_UP-XOP-C-001-O AND XDM_Core-DIFF-C-001-O
XDM_UP-DIFF-C-002-O	Support Differential Write of User Profile Document (XDMv2.1)	5.1.19	XDM_UP-XOP-C-001-O AND XDM_Core-DIFF-C-003-O
XDM_LUP-AU-C-001-O	Support Locked User Profile Application Usage (XDMv2.0)	5.2	XDM_LUP-AU-C-002-O AND XDM_LUP-AU-C-003-O AND XDM_LUP-AU-C-004-O AND XDM_LUP-AU-C-005-O AND XDM_LUP-AU-C-006-O AND XDM_LUP-AU-C-007-O AND XDM_LUP-AU-C-008-O
XDM_LUP-AU-C-002-O	Support Locked User Profile Document structure (XDMv2.0)	5.2.1	XDM_Core-XOP-C-003-M AND XDM_LUP-AU-C-001-O
XDM_LUP-AU-C-003-O	Support Application Unique ID in Locked User Profile Application Usage (XDMv2.0)	5.2.2	XDM_LUP-AU-C-001-O
XDM_LUP-AU-C-004-O	Support XML schema of Locked User Profile Document (XDMv2.0)	5.2.3	XDM_LUP-AU-C-001-O
XDM_LUP-AU-C-005-O	Supports MIME type of Locked User Profile Document (XDMv2.0)	5.2.5	XDM_LUP-AU-C-001-O
XDM_LUP-AU-C-006-O	Support validation constraints (XDMv2.0)	5.2.6	XDM_LUP-AU-C-001-O
XDM_LUP-AU-C-007-O	Support data semantics of Locked User Profile Document (XDMv2.0)	5.2.7	XDM_LUP-AU-C-001-O
XDM_LUP-AU-C-008-O	Support naming conventions for Locked User Profile Document (XDMv2.0)	5.2.8	XDM_LUP-AU-C-001-O

B.3   Profile XDM Application Usages (XDM Agent)

Item	Function	Reference	Requirement
XDM_UP-AU-A-001-O	Support User Profile Application Usage (XDMv2.0)	5.1	XDM_UP-AU-A-002-O AND XDM_UP-AU-A-003-O AND XDM_UP-AU-A-004-O AND XDM_UP-AU-A-005-O AND XDM_UP-AU-A-006-O AND XDM_UP-AU-A-007-O AND XDM_UP-AU-A-008-O

Item	Function	Reference	Requirement
XDM_UP-AU-A-002-O	Support User Profile Document structure (XDMv2.0)	5.1.1	XDM_Core-AU-A-003-M AND XDM_UP-AU-A-001-O
XDM_UP-AU-A-003-O	Support Application Unique ID in User Profile Application Usage (XDMv2.0)	5.1.2	XDM_UP-AU-A-001-O
XDM_UP-AU-A-004-O	Support XML schema of User Profile Document (XDMv2.0)	5.1.3	XDM_UP-AU-A-001-O
XDM_UP-AU-A-005-O	Support MIME type of User Profile Document (XDMv2.0)	5.1.5	XDM_UP-AU-A-001-O
XDM_UP-AU-A-006-O	Support validation constraints (XDMv2.0)	5.1.6	XDM_UP-AU-A-001-O
XDM_UP-AU-A-007-O	Support data semantics of User Profile Document (XDMv2.0)	5.1.7	XDM_UP-AU-A-001-O
XDM_UP-AU-A-008-O	Support naming conventions for User Profile Document (XDMv2.0)	5.1.8	XDM_UP-AU-A-001-O
XDM_UP-SEC-A-001-O	Support Access Permissions Document (XDMv2.1)	5.1.11	XDM_UP-AU-A-001-O AND XDM_Core-SEC-A-006-O
XDM_ UP-SUB-A-001-O	Support Subscribing to changes in User Profile Document (XDMv2.1)	5.1.12	XDM_UP-AU-A-001-O AND XDM_Core-SUB-A-001-O AND XDM_Core-SUB-A-002-O
XDM_UP-SRC-A-001-O	Support search procedures for User Profile Document (XDMv2.0)	5.1.13	XDM_Core-SRC-A-001-O AND XDM_Core-SRC-A-002-O
XDM_UP-SRC-A-002-O	Support search capabilities (XDMv2.0)	5.1.13	XDM_UP-SRC-A-001-O
XDM_UP-SRC-A-003-O	Support Search in Modification History Information (XDMv2.1)	5.1.13	XDM_UP-AU-A-001-O AND XDM_Core-SRC-A-004-O
XDM_UP-SRC-A-004-O	Support Search in Request History Information (XDMv2.1)	5.1.13	XDM_UP-AU-A-001-O AND XDM_Core-SRC-A-005-O
XDM_UP-PRF-A-001-O	Support XDM Preferences Document (XDMv2.1)	5.1.14	XDM_UP-AU-A-001-O AND XDM_Core-PRF-A-001-O
XDM_UP-MHI-A-001-O	Support Modification History Information Document (XDMv2.1)	5.1.15	XDM_UP-AU-A-001-O AND XDM_Core-MHI-A-001-O
XDM_UP-RHI-A-001-O	Support Request History Information Document (XDMv2.1)	5.1.15	XDM_UP-AU-A-001-O AND XDM_Core-RHI-A-001-O
XDM_UP-RES-A-013-O	Support Restore of User Profile Document (XDMv2.1)	5.1.17	XDM_UP-AU-A-001-O AND XDM_Core-RES-A-001-O
XDM_UP-REF-A-014-O	Support Document Reference of User Profile Document (XDMv2.1)	5.1.18	XDM_UP-AU-A-001-O AND XDM_Core-REF-A-001-O
XDM_UP-DIFF-A-001-O	Support Differential Read of User Profile Document (XDMv2.1)	5.1.19	XDM_UP-AU-A-001-O AND XDM_Core-DIFF-A-001-O
XDM_UP-DIFF-A-002-O	Support Differential Write of User Profile Document (XDMv2.1)	5.1.19	XDM_UP-AU-A-001-O AND XDM_Core-DIFF-A-003-O
XDM_LUP-AU-A-001-O	Support Locked User Profile Application Usage (XDMv2.0)	5.2	XDM_LUP-AU-A-002-O AND XDM_LUP-AU-A-003-O AND XDM_LUP-AU-A-004-O AND XDM_LUP-AU-A-005-O AND XDM_LUP-AU-A-006-O AND XDM_LUP-AU-A-007-O AND XDM_LUP-AU-A-008-O
XDM_LUP-AU-A-002-O	Support Locked User Profile Document structure (XDMv2.0)	5.2.1	XDM_Core-AU-A-003-M AND XDM_LUP-AU-A-001-O

Item	Function	Reference	Requirement
XDM_LUP-AU-A-003-O	Support Application Unique ID in Locked User Profile Application Usage (XDMv2.0)	5.2.2	XDM_LUP-AU-A-001-O
XDM_LUP-AU-A-004-O	Support XML schema of Locked User Profile Document (XDMv2.0)	5.2.3	XDM_LUP-AU-A-001-O
XDM_LUP-AU-A-005-O	Support MIME type of Locked User Profile Document (XDMv2.0)	5.2.5	XDM_LUP-AU-A-001-O
XDM_LUP-AU-A-006-O	Support validation constraints (XDMv2.0)	5.2.6	XDM_LUP-AU-A-001-O
XDM_LUP-AU-A-007-O	Support data semantics of Locked User Profile Document (XDMv2.0)	5.2.7	XDM_LUP-AU-A-001-O
XDM_LUP-AU-A-008-O	Support naming conventions for Locked User Profile Document(XDMv2.0)	5.2.8	XDM_LUP-AU-A-001-O

Appendix C.   Examples   (Informative)

C.1   Structure of User Profile Document

This example provides the sample User Profile Document of the user "sip:alice@example.com". It contains the following information:

- Communication Address

- Residential Address

- Preferred Communication Types(PoC and IM)

- Favourites

- Hobbies

```xml
<?xml version="1.0" encoding="UTF-8"?>
<user-profiles xmlns="urn:oma:xml:xdm:user-profile">
  <user-profile uri="sip:alice@example.com">
      <communication-addresses>
         <comm-addr>+1 858 623 0743</comm-addr>
         <comm-addr>asmith@omaorg.org</comm-addr>
         <comm-addr>sip:alice@example.com</comm-addr>
      </communication-addresses>
      <display-name xml:lang="en">Alice</display-name>
      <birth-date>1995-05-20</birth-date>
      <name xml:lang="en">
        <given-name>Alice</given-name>
        <family-name>Smith</family-name>
        <middle-name>Pamela</middle-name>
        <name-suffix></name-suffix>
        <name-prefix></name-prefix>
        </name>
      <address xml:lang="en">
        <country>USA</country>
        <region>California</region>
        <locality>La Jolla</locality>
        <area></area>
        <street-name>Executive Square</street-name>
        <street-number>4275</street-number>
        <postal-code>Ca 92037</postal-code>
      </address>
      <gender>female</gender>

      <freetext xml:lang="en">I'm an OMA freak</freetext>
      <communication-types>
        <comm-type xml:lang="en">Push to talk</comm-type>
        <comm-type xml:lang="en">Instant messaging</comm-type>
      </communication-types>
      <hobbies>
        <hobby xml:lang="en">Butterfly collecting</hobby>
        <hobby xml:lang="en">Bird watching</hobby>
      </hobbies>
      <favourite-links>
         <link>http://www.openmobilealliance.org/</link>
         <link>http://ietf.org</link>
      </favourite-links>
  </user-profile>
```

C.2   Search in the home domain User Profile XDMS

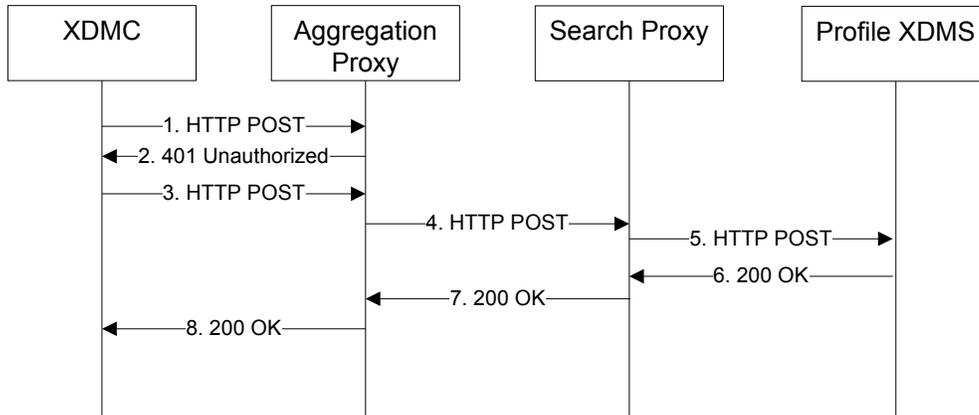Figure C.2 describes how an XDMC can do a search in the User Profile XDMS.

Figure C.1- XDMC performs a search in Profile XDMS in its home domain

The details of the flows are as follows:

1) The user "sip:joebloggs@example.com" wants to obtain user profile data about people from California and with the hobby "Bird watching". For this purpose the XDMC sends an HTTP POST request to the Aggregation Proxy.

```
POST /org.openmobilealliance.search?target=org.openmobilealliance.user-profile/users/ HTTP/1.1
Host: xcap.example.com
User-Agent: XDM-client/OMA2.0
Date: Thu, 10 Aug 2007 11:50:33 GMT
X-3GPP-Intended-Identity: "sip:joebloggs@example.com"
Accept-Encoding: gzip
Content-Type: application/vnd.oma.search+xml; charset="utf-8"
Content-Length: …

<?xml version="1.0" encoding="UTF-8"?>
<search-set   xmlns="urn:oma:xml:xdm:search">
 <search id="1234">
  <request>
    <query>
   <![CDATA[
      xquery version "1.0";
      declare default element namespace "urn:oma:xml:xdm:user-profile";
      for $u in collection("org.openmobilealliance.user-profile/users/")/user-profiles/user-
  profile
      where ($u/hobbies/hobby="Bird watching")and($u/address/region="California")
      return <user-profile>{$u/@uri}{$u/display-name}</user-profile>
  ]]>
    </query>
  </request>
 </search>
</search-set>
```

2) Upon receiving an unauthorized HTTP POST the Aggregation Proxy chooses to authenticate the XDMC.

```
HTTP/1.1 401 Unauthorized
Server: XDM-proxy/OMA2.0
Date: Thu, 10 Aug 2007 11:50:33 GMT
WWW-Authenticate: Digest realm="xcap.example.com", nonce="47364c23432d2e131a5fb210812c", qop=auth-
   int
Content-Length: 0
```

3) The XDMC sends a HTTP POST request including the Authorization header to the Aggregation Proxy.

```
POST /org.openmobilealliance.search?target=org.openmobilealliance.user-profile/users/ HTTP/1.1
Host: xcap.example.com
User-Agent: XDM-client/OMA2.0
Date: Thu, 10 Aug 2007 11:50:33 GMT
```

```
Authorization: Digest realm="xcap.example.com", nonce="47364c23432d2e131a5fb210812c",
    username="sip:joebloggs@example.com", qop=auth-int,
    uri="/org.openmobilealliance.search?target=org.openmobilealliance.user-profile/users/",
    response="2c8ee200cec7f6e966c932a9242554e4", cnonce="dcd99agsfgfsa8b7102dd2f0e8b1", nc=00000001
X-3GPP-Intended-Identity: "sip:joebloggs@example.com"
Accept-Encoding: gzip
Content-Type: application/vnd.oma.search+xml; charset="utf-8"
Content-Length: …

<?xml version="1.0" encoding="UTF-8"?>
<search-set   xmlns="urn:oma:xml:xdm:search">
 <search id="1234">
  <request>
   <query>
   <![CDATA[
      xquery version "1.0";
      declare default element namespace "urn:oma:xml:xdm:user-profile";
      for $u in collection("org.openmobilealliance.user-profile/users/")/user-profiles/user-
   profile
      where ($u/hobbies/hobby="Bird watching")and($u/address/region="California")
   return <user-profile>{$u/@uri}{$u/display-name}</user-profile>
   ]]>
   </query>
  </request>
 </search>
</search-set>
```

4) Based on the "org.openmobilealliance.search" part of the Request URI, the Aggregation Proxy forwards the Search Request to the Search Proxy.

```
POST /org.openmobilealliance.search?target=org.openmobilealliance.user-profile/users/ HTTP/1.1
Host: xcap.example.com
User-Agent: XDM-client/OMA2.0
Date: Thu, 10 Aug 2007 11:50:33 GMT
X-3GPP-Intended-Identity: "sip:joebloggs@example.com"
Accept-Encoding: gzip
Content-Type: application/vnd.oma.search+xml; charset="utf-8"
Content-Length: …

<?xml version="1.0" encoding="UTF-8"?>
<search-set   xmlns="urn:oma:xml:xdm:search">
 <search id="1234">
  <request>
   <query>
   <![CDATA[
      xquery version "1.0";
      declare default element namespace "urn:oma:xml:xdm:user-profile";
      for $u in collection("org.openmobilealliance.user-profile/users/")/user-profiles/user-
   profile
      where ($u/hobbies/hobby="Bird watching")and($u/address/region="California")
      return <user-profile>{$u/@uri}{$u/display-name}</user-profile>
   ]]>
   </query>
  </request>
 </search>
</search-set>
```

NOTE 1: If the "X-3GPP-Intended-Identity" is not included in the message (3), the Aggregation Proxy will include the "X-3GPP-Asserted-Identity" header.

5) Based on the target parameter "target=org.openmobilealliance.user-profile/users/" in the Request URI, the Search Proxy forwards the Search Request to the Profile XDMS. When forwarding, the Search Proxy removes the "target" query parameter from the HTTP URI.

```
POST /org.openmobilealliance.search HTTP/1.1
Host: xcap.example.com
User-Agent: XDM-client/OMA2.0
Date: Thu, 10 Aug 2007 11:50:33 GMT
X-3GPP-Intended-Identity: "sip:joebloggs@example.com"
Accept-Encoding: gzip
```

```
Content-Type: application/vnd.oma.search+xml; charset="utf-8"
Content-Length: …

<?xml version="1.0" encoding="UTF-8"?>
<search-set    xmlns="urn:oma:xml:xdm:search">
 <search id="1234">
  <request>
    <query>
    <![CDATA[
       xquery version "1.0";
       declare default element namespace "urn:oma:xml:xdm:user-profile";
       for $u in collection("org.openmobilealliance.user-profile/users/")/user-profiles/user-
   profile
       where ($u/hobbies/hobby="Bird watching")and($u/region/="California")
       return <user-profile>{$u/@uri}{$u/display-name}</user-profile>
   ]]>
     </query>
   </request>
  </search>
</search-set>
```

6) After the Profile XDMS has performed the search operation, the Profile XDMS sends an HTTP "200 OK" response including the requested results in the body.

```
HTTP/1.1 200 OK
Server: XDM-serv/OMA2.0
Date: Thu, 10 Aug 2007 11:50:39 GMT
Content-Type: application/vnd.oma.search+xml; charset="utf-8"
Content-Length: (...)

<?xml version="1.0" encoding="UTF-8"?>
<search-set xmlns="urn:oma:xml:xdm:search" xmlns:up="urn:oma:xml:xdm:user-profile">
 <search id="1234">
  <response>
   <up:user-profile uri="alice@example.com"><up:display-name>Alice</up:display-name></up:user-
   profile>
   <up:user-profile uri="seth@example.com"><up:display-name>Seth</up:display-name></up:user-
   profile>
  </response>
 </search>
</search-set>
```

7) The Search Proxy routes the response to the Aggregation Proxy.

```
HTTP/1.1 200 OK
Server: XDM-serv/OMA2.0
Date: Thu, 10 Aug 2006 10:50:39 GMT
Content-Type: application/vnd.oma.search+xml; charset="utf-8"
Content-Length: (...)

<?xml version="1.0" encoding="UTF-8"?>
<search-set xmlns="urn:oma:xml:xdm:search" xmlns:up="urn:oma:xml:xdm:user-profile">
 <search id="1234">
  <response>
   <response>
   <up:user-profile uri="alice@example.com"><up:display-name>Alice</up:display-name></up:user-
   profile>
   <up:user-profile uri="seth@example.com"><up:display-name>Seth</up:display-name></up:user-
   profile>
  </response>
 </search>
</search-set>
```

8) The Aggregation Proxy encodes (optionally) the content and routes the response back to the XDMC.

```
HTTP/1.1 200 OK
Server: XDM-serv/OMA2.0
Date: Thu, 10 Aug 2006 10:50:39 GMT
Content-Type: application/vnd.oma.search+xml; charset="utf-8"
Content-Length: (...)

<?xml version="1.0" encoding="UTF-8"?>
<search-set xmlns="urn:oma:xml:xdm:search" xmlns:up="urn:oma:xml:xdm:user-profile">
```

```
 <search id="1234">
  <response>
   <up:user-profile uri="alice@example.com"><up:display-name>Alice</up:display-name></up:user-
   profile>
   <up:user-profile uri="seth@example.com"><up:display-name>Seth</up:display-name></up:user-
   profile>
  </response>
 </search>
</search-set>
```