



## **UPP Directory XDM Specification**

**Approved Version 1.0 – 03 Apr 2012**

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**Open Mobile Alliance**  
**OMA-TS-XDM\_UPP\_Directory-V1\_0-20120403-A**

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# Contents

1. SCOPE.....	4
2. REFERENCES .....	5
2.1 NORMATIVE REFERENCES.....	5
2.2 INFORMATIVE REFERENCES.....	5
3. TERMINOLOGY AND CONVENTIONS.....	6
3.1 CONVENTIONS.....	6
3.2 DEFINITIONS.....	6
3.3 ABBREVIATIONS.....	6
4. INTRODUCTION .....	8
4.1 VERSION 1.0 .....	8
5. UPP DIRECTORY XDM APPLICATION USAGES .....	9
5.1 UPP DIRECTORY.....	9
5.1.1 Structure.....	9
5.1.2 Application Unique ID.....	9
5.1.3 XML Schema.....	9
5.1.4 Default Namespace .....	10
5.1.5 MIME Type .....	10
5.1.6 Validation Constraints .....	10
5.1.7 Data Semantics .....	10
5.1.8 Naming Conventions .....	10
5.1.9 Global Documents .....	10
5.1.10 Resource Interdependencies.....	10
5.1.11 Authorization Policies.....	10
5.1.12 Subscription to Changes .....	11
5.1.13 Search Capabilities.....	11
5.1.14 XDM Preferences Document .....	11
5.1.15 History Information Documents .....	11
5.1.16 Forwarding.....	11
5.1.17 Restore .....	11
5.1.18 Document Reference.....	11
5.1.19 Differential Read and Write .....	11
6. SUBSCRIBING TO CHANGES IN THE XML DOCUMENTS.....	12
APPENDIX A. CHANGE HISTORY (INFORMATIVE).....	13
A.1 APPROVED VERSION 1.0 HISTORY .....	13
APPENDIX B. STATIC CONFORMANCE REQUIREMENTS (NORMATIVE).....	14
B.1 UPP DIRECTORY XDM APPLICATION USAGES (XDMS).....	14
B.2 UPP DIRECTORY XDM APPLICATION USAGES (XDMC) .....	15
B.3 UPP DIRECTORY XDM APPLICATION USAGES (XDM AGENT) .....	16
APPENDIX C. EXAMPLES (INFORMATIVE).....	17
C.1 UPP DIRECTORY DOCUMENT STRUCTURE.....	17

## 1. Scope

This specification describes the data format and Application Usage for the UPP Directory Document, which contains the meta-information about the User Preferences Profiles that can be used by other OMA Enablers (e.g. CPM).

## 2. References

### 2.1 Normative References

#### OMA

- [CPM\_RD] “Converged IP Messaging Requirements”, Version 1.0, Open Mobile Alliance™, OMA-RD-CPM-V1\_0, URL: <http://www.openmobilealliance.org/>
- [Dict] “Dictionary for OMA Specifications”, Version 2.4, Open Mobile Alliance™, OMA-ORG-Dictionary-V2\_4, 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/>
- [XDM\_RD] “XML Document Management Requirements”, Version 2.1, Open Mobile Alliance™, OMA-RD-XDM-V2\_1, URL: <http://www.openmobilealliance.org/>
- [XSD\_uppDirectory] “XML Schema Definition : UPP Directory Document”, Version 1.0, Open Mobile Alliance™, OMA-SUP-XSD\_xdm\_uppDirectory-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>

### 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

<b>Access Permissions</b>	Use definition from [XDM_RD].
<b>Access Permissions Document</b>	Use definition from [XDM_Core].
<b>Active User Preferences Profile</b>	Use definition from [XDM_RD].
<b>Application Unique ID</b>	Use definition from [XDM_Core].
<b>Application Usage</b>	Use definition from [XDM_Core].
<b>Default User Preferences Profile</b>	Use definition from [XDM_RD].
<b>Document Reference</b>	Use definition from [XDM_AD].
<b>Document URI</b>	Use definition from [XDM_Core].
<b>Enabler</b>	Use definition from [Dict].
<b>Global Document</b>	Use definition from [XDM_Core].
<b>Principal</b>	Use definition from [Dict].
<b>UPP Directory</b>	Use definition from [XDM_RD].
<b>UPP Directory Document</b>	Use definition from [XDM_RD].
<b>User</b>	A User is any entity that uses the described features through the User Equipment.
<b>User Preferences Profile</b>	Use definition from [CPM_RD].
<b>XCAP Resource</b>	Use definition from [XDM_Core].
<b>XCAP Root</b>	Use definition from [XDM_Core].
<b>XCAP Server</b>	Use definition from [XDM_Core].
<b>XCAP User Identifier</b>	Use definition from [XDM_Core].
<b>XDM Agent</b>	Use definition from [XDM_AD].
<b>XDMC</b>	Use definition from [XDM_AD].
<b>XDM Preferences</b>	Use definition from [XDM_Core].
<b>XDM Preferences Document</b>	Use definition from [XDM_Core].
<b>XDMS</b>	Use definition from [XDM_AD].

### 3.3 Abbreviations

<b>ABNF</b>	Augmented Backus-Naur Form
<b>AUID</b>	Application Unique ID

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

## 4. Introduction

This specification provides the Application Usage for the UPP Directory Document.

The UPP Directory XDMS (see [XDM\_AD]) is the logical repository for UPP Directory Documents. The common protocol specified in [XDM\_Core] is used for access and manipulation of UPP Directory Documents by authorized Principals.

### 4.1 Version 1.0

The version 1.0 is called “UPP Directory XDMS” and specifies the Application Usage for UPP Directory Document.

## 5. UPP Directory XDM Application Usages

### 5.1 UPP Directory

#### 5.1.1 Structure

The UPP Directory Document SHALL conform to the structure of the “upp-directory” described in this section. The schema definition is provided in section **Error! Reference source not found.** “*XML Schema*”.

The <upp-directory> element:

- a) SHALL include <upp-set> element which contains the list of UPPs available to the user. The <upp-set> element:
  - 1) MAY include one or more <upp> elements which contain the details of each UPP available to the user. The <upp> element:
    - i. SHALL include a “upp-id” attribute that uniquely identifies the UPP;
    - ii. MAY include any other attribute for the purpose of extensibility;
    - iii. MAY include <display-name> element, containing a suggested name to display in user interfaces (e.g. Home); and
    - iv. MAY include any other elements for the purpose of extensibility.
- b) SHALL include <active-upp> which contains the details of Active UPP selected by the user for its devices. The <active-upp> element:
  - 1) SHALL include <default-upp> element which identifies a Default UPP. The <default-upp> element:
    - i. SHALL include a <upp-reference> element which uniquely identifies a UPP which is selected as Default UPP by the user. The <upp-reference> element:
      - 1. SHALL include the “ref-id” attribute which carries the identifier of a UPP as value.
  - 2) MAY include one or more <active-device-upp> elements that identify a UPP which is selected as Active UPP by a particular device. The <active-device-upp> element:
    - i. SHALL include a “device-id” attribute which uniquely identifies a particular device of the user; and
    - ii. SHALL include a <upp-reference> element which uniquely identifies a UPP which is selected as Active UPP by a particular device. The <upp-reference> element:
      - 1. SHALL include the “ref-id” attribute which carries the identifier of a UPP as value.
- c) MAY include any other attribute for the purposes of extensibility.

#### 5.1.2 Application Unique ID

The AUID SHALL be “org.openmobilealliance.upp-directory”.

#### 5.1.3 XML Schema

The UPP Directory Document SHALL be composed according to the XML schema described in [XSD\_uppDirectory].

## 5.1.4 Default Namespace

The default namespace used in expanding URIs SHALL be “urn:oma:xml:xdm:upp-directory” defined in section **Error! Reference source not found.**

## 5.1.5 MIME Type

The MIME type for the UPP Directory Document SHALL be “application/upp-directory+xml”.

## 5.1.6 Validation Constraints

The UPP Directory Document SHALL conform to the XML Schema described in section 5.1.3 “*XML Schema*”, with the clarifications given below.

The value of the “ref-id” of the <upp-reference> element SHALL match with one of the “upp-id” attribute values of the <upp> element listed under <upp-set> element.

The value of the “device-id” attribute proposed by the XDMC in the <active-device-upp> SHALL be unique amongst the values of all <active-device-upp> elements present in the UPP Directory Document of a particular user.

If the XDMC deletes a <upp> element and if it’s “upp-id” attribute value matches with any of the “ref-id” attribute value of the <upp-reference> element the UPP Directory XDMS SHALL return an HTTP “409 Conflict” response including the XCAP error element <constraint-failure>. If included, the “phrase” attribute SHOULD be set to “The UPP is in use”.

If the XDMC adds an <active-device-upp> element whose “device-id” attribute value matches with that of another <active-device-upp> already present, the UPP Directory XDMS SHALL return HTTP “409 Conflict” including the error element <constraint-failure>. If included, the “phrase” attribute SHOULD be set to “Duplicate entry”.

## 5.1.7 Data Semantics

See section 5.1.1 “Structure” and section 5.1.6 “Validation constraints”.

## 5.1.8 Naming Conventions

The name of the UPP Directory Document SHALL be “upp-directory”.

## 5.1.9 Global Documents

Not applicable.

## 5.1.10 Resource Interdependencies

Not applicable.

## 5.1.11 Authorization Policies

The authorization policies SHALL conform to the default authorization policy as described in [XDM\_Core] section “*Authorization*”.

The UPP Directory Application Usage MAY support an Access Permissions Document as described in [XDM\_Core] sections “*Authorization*” and “*Access Permissions Document*” with the following clarifications:

- a) An <allow-operaration-own-data> element SHALL NOT be included in an <actions> element; and
- b) An <external-list> element SHALL, if such element is included in a <conditions> element, reference a URI List in List XDMS.

## 5.1.12 Subscription to Changes

The UPP Directory Application Usage SHALL support subscription to changes as specified in [XDM\_Core] section “*Subscriptions to changes in the XDM Resources*”.

## 5.1.13 Search Capabilities

Not applicable for searching UPP Directory Document.

The UPP Directory 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 UPP Directory Application Usage SHALL support an XDM Preferences Document as described in [XDM\_Core] section “*XDM Preferences Document*” if it supports History Information XDM Documents as described in section 5.1.15.

## 5.1.15 History Information Documents

The UPP Directory Application Usage MAY support Modification History Information Document as described in [XDM\_Core] section “*Modification History Information Document*” for a UPP Directory Document.

The UPP Directory 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 UPP Directory Application Usage MAY support restore of a UPP Directory Document as described in [XDM\_Core] section “*XDM Restore*”.

## 5.1.18 Document Reference

The UPP Directory Application Usage MAY support Document Reference of a UPP Directory Document as described in [XDM\_Core] section “*Document Reference*”.

## 5.1.19 Differential Read and Write

Not applicable.

## 6. Subscribing to changes in the XML documents

Refer to section “Subscription to Changes” in each Application Usage.

## Appendix A. Change History (Informative)

### A.1 Approved Version 1.0 History

Reference	Date	Description
OMA-TS-XDM_UPP_Directory-V1_0-20120403-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:

- UPP Directory XDM Application Usages

### B.1 UPP Directory XDM Application Usages (XDMs)

Item	Function	Reference	Requirement
XDM_UPD-AU-S-001-M	Support UPP Directory Document Structure (XDMv2.1)	5.1.1	XDM_Core-XOP-S-001-M
XDM_UPD-AU-S-002-M	Support Application Unique ID of UPP Directory Document (XDMv2.1)	5.1.2	
XDM_UPD-AU-S-003-M	Support XML Schema of UPP Directory Document (XDMv2.1)	5.1.3	
XDM_UPD-AU-S-004-M	Support Default name space for UPP Directory Document (XDMv2.1)	5.1.4	
XDM_UPD-AU-S-005-M	Support MIME type of UPP Directory Document (XDMv2.1)	5.1.5	
XDM_UPD-AU-S-006-M	Support Validation constraints of UPP Directory Document (XDMv2.1)	5.1.6	
XDM_UPD-AU-S-007-M	Support Data semantics of UPP Directory Document (XDMv2.1)	5.1.7	
XDM_UPD-AU-S-008-M	Support Naming conventions for UPP Directory Document (XDMv2.1)	5.1.8	
XDM_UPD-SEC-S-001-M	Support default Authorization policy for accessing a UPP Directory Document (XDMv2.1)	5.1.11	XDM_Core-SEC-S-001-M
XDM_UPD-SEC-S-002-O	Support Authorization policies defined in an Access Permissions Document governing access to a UPP Directory Document (XDMv2.1)	5.1.11	XDM_Core-SEC-S-002-O
XDM_UPD-SUB-S-001-M	Support Subscribing to changes in UPP Directory Document (XDMv2.1)	5.1.12	XDM_Core-SUB-S-001-O AND XDM_Core-SUB-S-002-O
XDM_UPD-PRF-S-001-O	Support XDM Preferences Document (XDMv2.1)	5.1.14	XDM_Core-PRF-S-001-O AND (XDM_UPD-MHI-S-001-O OR XDM_UPD-RHI-S-001-O)
XDM_UPD-MHI-S-001-O	Support Modification History Information Document (XDMv2.1)	5.1.15	XDM_Core-MHI-S-001-O AND XDM_UPD-PRF-S-001-O
XDM_UPD-RHI-S-001-O	Support Request History Information Document (XDMv2.1)	5.1.15	XDM_Core-RHI-S-001-O AND XDM_UPD-PRF-S-001-O
XDM_UPD-RES-S-001-O	Support Restore of UPP Directory Document (XDMv2.1)	5.1.17	XDM_Core-RES-S-001-O
XDM_UPD-REF-S-001-O	Support Document Reference of UPP Directory Document (XDMv2.1)	5.1.18	XDM_Core-REF-S-001-O

## B.2 UPP Directory XDM Application Usages (XDMC)

Item	Function	Reference	Requirement
XDM_UPD-AU-C-001-O	Support UPP Directory Application Usage (XDMv2.1)	5.1	XDM_UPD-AU-C-002-O AND XDM_UPD-AU-C-003-O AND XDM_UPD-AU-C-004-O AND XDM_UPD-AU-C-005-O AND XDM_UPD-AU-C-006-O AND XDM_UPD-AU-C-007-O AND XDM_UPD-AU-C-008-O AND XDM_UPD-AU-C-009-O
XDM_UPD-AU-C-002-O	Support UPP Directory Document Structure (XDMv2.1)	5.1.1	XDM_Core-XOP-C-003-M AND XDM_UPD-AU-C-001
XDM_UPD-AU-C-002-O	Support Application Unique ID of UPP Directory Document (XDMv2.1)	5.1.2	XDM_UPD-AU-C-001
XDM_UPD-AU-C-004-O	Support XML Schema of UPP Directory Document (XDMv2.1)	5.1.3	XDM_UPD-AU-C-001
XDM_UPD-AU-C-005-O	Support Default name space for UPP Directory Document (XDMv2.1)	5.1.4	XDM_UPD-AU-C-001
XDM_UPD-AU-C-006-O	Support MIME type of UPP Directory Document (XDMv2.1)	5.1.5	XDM_UPD-AU-C-001
XDM_UPD-AU-C-007-O	Support Validation constraints of UPP Directory Document (XDMv2.1)	5.1.6	XDM_UPD-AU-C-001
XDM_UPD-AU-C-008-O	Support Data semantics of UPP Directory Document (XDMv2.1)	5.1.7	XDM_UPD-AU-C-001
XDM_UPD-AU-C-009-M	Support Naming conventions for UPP Directory Document (XDMv2.1)	5.1.8	XDM_UPD-AU-C-001
XDM_UPD-SEC-C-001-O	Support Access Permissions Document (XDMv2.1)	5.1.11	XDM_UPD-AU-C-001-O AND XDM_Core-SEC-C-006-O
XDM_UPD-SUB-C-001-O	Support Subscribing to changes in UPP Directory Document (XDMv2.1)	5.1.12	XDM_UPD-AU-C-001-O AND XDM_Core-SUB-C-001-O AND XDM_Core-SUB-C-002-O
XDM_UPD-PRF-C-001-O	Support XDM Preferences Document (XDMv2.1)	5.1.14	XDM_UPD-AU-C-001-O AND XDM_Core-PRF-C-001-O AND (XDM_UPD-MHI-C-001-O OR XDM_UPD-RHI-C-001-O)
XDM_UPD-MHI-C-001-O	Support Modification History Document (XDMv2.1)	5.1.15	XDM_UPD-AU-C-001-O AND XDM_Core-MHI-C-001-O
XDM_UPD-RHI-C-001-O	Support Request History Document (XDMv2.1)	5.1.15	XDM_UPD-AU-C-001-O AND XDM_Core-RHI-C-001-O
XDM_UPD-RES-C-001-O	Support Restore of UPP Directory Document (XDMv2.1)	5.1.17	XDM_UPD-AU-C-001-O AND XDM_Core-RES-C-001-O
XDM_UPD-REF-C-001-O	Support Document Reference of UPP Directory Document (XDMv2.1)	5.1.18	XDM_UPD-AU-C-001-O AND XDM_Core-REF-C-001-O

## B.3 UPP Directory XDM Application Usages (XDM Agent)

Item	Function	Reference	Requirement
XDM_UPD-AU-A-001-O	Support UPP Directory Application Usage (XDMv2.1)	5.1	XDM_UPD-AU-A-002-O AND XDM_UPD-AU-A-003-O AND XDM_UPD-AU-A-004-O AND XDM_UPD-AU-A-005-O AND XDM_UPD-AU-A-006-O AND XDM_UPD-AU-A-007-O AND XDM_UPD-AU-A-008-O AND XDM_UPD-AU-A-009-O
XDM_UPD-AU-A-002-O	Support UPP Directory Document Structure (XDMv2.1)	5.1.1	XDM_Core-XOP-A-003-M AND XDM_UPD-AU-A-001-O
XDM_UPD-AU-A-003-O	Support Application Unique ID of UPP Directory Document (XDMv2.1)	5.1.2	XDM_UPD-AU-A-001-O
XDM_UPD-AU-A-004-O	Support XML Schema of UPP Directory Document (XDMv2.1)	5.1.3	XDM_UPD-AU-A-001-O
XDM_UPD-AU-A-005-O	Support Default name space for UPP Directory Document (XDMv2.1)	5.1.4	XDM_UPD-AU-A-001-O
XDM_UPD-AU-A-006-O	Support MIME type of UPP Directory Document (XDMv2.1)	5.1.5	XDM_UPD-AU-A-001-O
XDM_UPD-AU-A-007-O	Support Validation constraints of UPP Directory Document (XDMv2.1)	5.1.6	XDM_UPD-AU-A-001-O
XDM_UPD-AU-A-008-O	Support Data semantics of UPP Directory Document (XDMv2.1)	5.1.7	XDM_UPD-AU-A-001-O
XDM_UPD-AU-A-009-O	Support Naming conventions for UPP Directory Document (XDMv2.1)	5.1.8	XDM_UPD-AU-A-001-O
XDM_UPD-SEC-A-001-O	Support Access Permissions Document (XDMv2.1)	5.1.11	XDM_Core-SEC-A-006-M AND XDM_UPD-AU-A-001-O
XDM_UPD-SUB-A-001-O	Support Subscribing to changes in UPP Directory Document (XDMv2.1)	5.1.12	XDM_Core-SUB-A-001-O AND XDM_Core-SUB-A-002-O AND XDM_UPD-AU-A-001-O
XDM_UPD-PRF-A-001-O	Support XDM Preferences Document (XDMv2.1)	5.1.14	XDM_Core_PRF-A-001-O AND XDM_UPD-AU-A-001-O AND (XDM_UPD-MHI-A-001-O OR XDM_UPD-RHI-A-001-O)
XDM_UPD-MHI-A-001-O	Support Modification History Document (XDMv2.1)	5.1.15	XDM_UPD-AU-A-001-O AND XDM_Core-MHI-A-001-O
XDM_UPD-RHI-A-001-O	Support Request History Document (XDMv2.1)	5.1.15	XDM_UPD-AU-A-001-O AND XDM_Core-RHI-A-001-O
XDM_UPD-RES-A-001-O	Support Restore of UPP Directory Document (XDMv2.1)	5.1.17	XDM_UPD-AU-A-001-O AND XDM_Core-RES-A-001-O
XDM_UPD-REF-A-001-O	Support Document Reference of UPP Directory Document (XDMv2.1)	5.1.18	XDM_UPD-AU-A-001-O AND XDM_Core-REF-A-001-O

## Appendix C. Examples

(Informative)

### C.1 UPP Directory Document Structure

Sample content of UPP Directory Document of a user for the following scenario:

- The User has 3 profiles named “Work”, “home” and “roaming”.
- The User has chosen “Work” profile as the Default UPP.
- The User has chosen “home” profile as Active UPP from his device whose id is “sip:ronald.underwood@example.com;gr=kjh29x97us97d”
- The User has chosen “Work” profile as Active UPP from his device whose id is “sip:ronald.underwood@example.com;gr=kdfdhjkurgh97d”

```
<?xml version="1.0" encoding="UTF-8"?>
<upp-directory xmlns="urn:oma:xml:xdm:upp-directory">
    <!--set of Profiles available to the user -->
    <upp-set>
        <upp upp-id="xyz8dh">
            <display-name> home </display-name>
        </upp>

        <upp upp-id="abc9i">
            <display-name> work </display-name>
        </upp>

        <upp upp-id="def7j">
            <display-name> roaming </display-name>
        </upp>
    </upp-set>

    <active-upp>
        <default-upp>
            <upp-reference ref-id="abc9i"/> <!--User has chosen "Work" profile as default profile -->
        </default-upp>

        <active-device-upp device-id="sip:ronald.underwood@example.com;gr=kjh29x97us97d">
            <upp-reference ref-id="xyz8dh"/>
        </active-device-upp>

        <active-device-upp device-id="sip:ronald.underwood@example.com;gr=kdfdhjkurgh97d">
            <upp-reference ref-id="abc9i"/>
        </active-device-upp>
    </active-upp>
</upp>
```