



IM XDM Specification

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Open Mobile Alliance
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1. Scope

The IM XDM specific data formats and Application Usages are described in this specification.

2. References

2.1 Normative References

- [COMMONPOL] “A Document Format for Expressing Privacy Preferences”, H. Schulzrinne, J. Morris, H. Tschofenig, J. Cuellar, J. Polk, J. Rosenberg, August 10 2006, URL: <http://www.ietf.org/internet-drafts/draft-ietf-geopriv-common-policy-11.txt>
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- [OMA-LIST_XDM-TS] “OMA Shared List XDM Specification”, Version 2.0, Open Mobile Alliance™, OMA-TS-XDM_Shared_List-V2_0, URL: <http://www.openmobilealliance.org/>
- [OMA_SCR] “SCR Rules and Procedures”, Approved Version 1.0, Open Mobile Alliance™, OMA-ORG-SCR_Rules_and_Procedures-V1_0-20060919-A, URL: <http://www.openmobilealliance.org/>
- [OMA-XDM-CORE-TS] “XML Document Management (XDM) Specification”, Version 2.0, Open Mobile Alliance™, OMA-TS-XDM_Core-V2_0, 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>
- [RFC2234] “Augmented BNF for Syntax Specifications: ABNF”. D. Crocker, Ed., P. Overell. November 1997, URL: <http://www.ietf.org/rfc/rfc2234.txt>
- [XCAP] “The Extensible Markup Language (XML) Configuration Access protocol (XCAP)”, J. Rosenberg, May 2007, URL: <http://www.ietf.org/rfc/rfc4825.txt>
- [XDM_RD] “XML Document Management Requirements”, Version 2,0, Open Mobile Alliance™, OMA-RD-XDM-V2_0, URL: <http://www.openmobilealliance.org/>
- [XSD_HIST-DEF-META] “XDM - IM Conversation History and Deferred Message Metadata”, Version 1.0, Open Mobile Alliance™, OMA-SUP-XSD_im_hist_def_metadata-V1_0, URL: <http://www.openmobilealliance.org/>
- [XSD_MEDIA-EXT] “XDM Media Extensions to Common Policy”, Version 1.0, Open Mobile Alliance™, OMA-SUP-XSD_xdm_mediaExtensions-V2_0, URL: <http://www.openmobilealliance.org/>
- [OMA-Shared-Policy-XDM-TS] “Shared Policy XDM Specification” Version 2.0, Open Mobile Alliance™, OMA-TS-XDM_Shared_Policy-V2_0, URL: <http://www.openmobilealliance.org/>

2.2 Informative References

- [OMA-IM-TS] “Instant Messaging using SIMPLE”, Version 1.0, Open Mobile Alliance™, OMA-TS-SIMPLE_IM-V1_0, URL: <http://www.openmobilealliance.org/>
- [OMA-PoC-CP] “Push to talk Over Cellular (PoC) - Control Plane Specification” Version 2.0, Open Mobile Alliance™, OMA-TS-PoC-ControlPlane-V2_0, URL: <http://www.openmobilealliance.org/>
- [OMA-XDM-AD] “XML Document Management Architecture”, Version 2.0, Open Mobile Alliance™, OMA-AD-XDM-V2_0, 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 Unique ID	A unique identifier within the namespace of Application Unique IDs created by this specification that differentiates XCAP Resources accessed by one application from XCAP Resources accessed by another application. (Source: [XCAP])
Application Usage	Detailed information on the interaction of an application with an XCAP Server. (Source: [XCAP])
IM Conversation History	A record of a user’s IM communication during IM sessions and pager mode messages. The IM Conversation History includes both the messages exchanged as well as supplementary descriptive information (e.g., topics and time of communication). (Source: [OMA-XDM-AD])
Deferred Message	A pager mode or large message mode message that has been stored by the network if not able to deliver them immediately to the recipient.
Document URI	The HTTP URI containing the XCAP Root and Document Selector, resulting in the selection of a specific document. As a result, performing a GET against the Document URI would retrieve the document. (Source: [XCAP])
Global Document	A document placed under the XCAP Global Tree that applies to all users of that Application Usage.
Global Tree	A URI that represents the parent for all Global Documents for a particular Application Usage within a particular XCAP Root. (Source: [XCAP])
Group	A Group is a predefined set of Users together with its policies and attributes. A Group is identified by a SIP URI.
IM Server	An Application Server which implements the 3GPP IMS and 3GPP2 MMD application level network functionality for the IM service.
Primary Principal	The Primary Principal is the user associated with the XCAP User Identity, which defines where the document resides. (Source: [XDM RD])
Shared List	A URI List by which a user is able to group together a number of URIs (e.g., as “Friends”, “Family” etc.) or other resources, and where such a list is expected to be reused for a number of different services.
URI List	A list of URIs
User	A User is any entity that uses the described features through the User Equipment.
User Address	A User Address identifies a User. The User Address can be used by one User to request communication with other Users. (Source: [OMA-PoC-CP])
Users Tree	A URI that represents the parent for all user documents for a particular Application Usage within a particular XCAP Root. (Source: [XDM RD])
XCAP Resource	An HTTP resource representing an XML document, an element within an XML document, or an attribute of an element within an XML document that follows the naming and validation constraints of XCAP. (Source: [XCAP])
XCAP Root	A context that includes all of the documents across all Application Usages and users that are managed by a server. (Source: [XCAP])
XCAP Server	An HTTP server that understands how to follow the naming and validation constraints defined in this specification. (Source: [XCAP])
XCAP User Identifier (XUI)	The XUI is a string, valid as a path element in an HTTP URI that is associated with each user served by the XCAP Server. (Source: [XCAP])

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
XDMS	XDM Server
XDMC	XDM Client
XML	Extensible Markup Language
XUI	XCAP User Identifier

4. Introduction

This specification provides Application Usages for IM specific XML documents stored at IM XDMS. IM specific Application Usages include Conversation History metadata and deferred message metadata.

5. IM XDM Application Usages

5.1 IM Conversation History Metadata

5.1.1 Structure

The root element of the IM Conversation History Metadata document is <history-list> which contains zero or more <history> elements. The <history-list> MAY include any other attributes from any other namespaces for the purposes of extensibility.

Each <history> element contains supplementary descriptive information regarding the conversation in question. The <history> element:

1. SHALL include a "date" attribute representing the date at which the conversation history recording began. This attribute SHALL not exceed the precision of the day of the month;
2. SHALL include a "history-reference" attribute representing the complete path that uniquely identifies the the actual history content;
3. MAY include any other attributes from any other namespaces for the purposes of extensibility;
4. SHALL include a <size> element representing the size of the saved content;
5. MAY include an <expiry> element representing the date at which the history expires;
6. MAY include a <subject> element representing the subject header in SIP;
7. SHALL include <pager> element in the case of a pager mode message or a large message session, containing:
 - a) a mandatory <time-stamp> element representing the time when the message was recorded;
 - b) a mandatory <from> element taken from the "From" header field of the SIP request;
 - c) either
 1. the <to> element containing the "To" header field of the SIP request if the message is sent to one IM user; or
 2. the <recipient-list> element if the message is aimed to multiple users. This element contains a copy of intended recipients, e.g. the group session participants or the URIs listed in the URI-list case;
 - d) an optional <auth-id> element representing the Authenticated Originator's IM Address as defined in [OMA-IM-TS] if Privacy setting allows;
 - e) optionally any other elements from any other namespaces for the purposes of extensibility.
8. SHALL include <conference> element in the case of a conference history, containing:
 - a) a mandatory <time-start> element representing the start time of the history recording;
 - b) a mandatory <time-end> element representing the end time of the history recording;
 - c) an optional <recording-name> element representing the user given name for the recorded conference;
 - d) an optional <conf-list> element containing all the participants to the conference;
 - e) optionally any other elements from any other namespaces for the purposes of extensibility.
9. MAY include any other elements from any other namespaces for the purposes of extensibility.

Both the <recipient-list> and the <conf-list> elements SHALL contain one or more <entry> elements. Each <entry> element:

- SHALL include a "uri" attribute representing the URI representing a recipient for the message or a conference participant;
- MAY include a <display-name> element, containing a human-readable name corresponding to the message recipient's or conference participant's identity.

In case of predefined groups, both the <recipient-list> and the <conf-list> elements SHALL contain the “group-uri” and MAY contain the “group-display-name” attributes.

5.1.2 Application Unique ID

The AUID SHALL be “ org.openmobilealliance.conv-history”.

5.1.3 XML Schema

The IM Conversation History Metadata document SHALL be composed according to the XML Schema detailed in [XSD_HIST-DEF-META].

5.1.4 Default Namespace

The default namespace SHALL be "urn:oma:xml:im:history-list" defined in [XSD_HIST-DEF-META].

5.1.5 MIME Type

The MIME type for the IM Conversation History Metadata document SHALL be “ application/vnd.oma.im.history-list+xml”.

5.1.6 Validation Constraints

The IM Conversation History Metadata document SHALL conform to the XML Schema described in [XSD_HIST-DEF-META] with the clarifications given in this sub-clause.

The value of the “history-reference” attribute in the <history> element:

- SHALL be in the format of a URI;
- SHALL conform to the syntax specified in [OMA-IM-TS] section 13.2.3 “storage for History” for IM Conversation History database reference;
- SHALL be unique amongst the values of all other “history-reference” attributes in <history> elements under the same <history-list> element in an IM Conversation History Metadata document.

If the value of the “history-reference” attribute value does not conform to any local policy or the constraints described above, the IM XDMS SHALL respond with an HTTP “409 Conflict” response as described in [XCAP] including the XCAP error element <constraint-failure>. If included, the “phrase” attribute SHOULD be set to “History reference error”.

5.1.7 Data Semantics

Each <history> element contains descriptive information about one IM Conversation History stored at the storage. The IM Server creates the <history> element, and all the values of XML elements and attributes are set by the IM Server.

The “date” attribute of the <history> element defines the date when the recording of the conversation history began. The value of the “date” attribute SHALL NOT exceed the precision of the day of the month.

The value of the <subject> element corresponds either to the value of the <subject> element in the Group definition stored at the Shared Group XDMS or to other topic or description given by other means to the conversation depending on the conversation case and the IM Server local policy.

The value of the <size> element is set by the IM Server to the size of the stored conversation measured in kBytes.

5.1.8 Naming Conventions

There SHALL be only one IM Conversation History Metadata document per XUI in the Conversation History Application Usage, and its name SHALL be “conv-history”. To retrieve the IM Conversation History Metadata document the XDMC SHALL always use this name.

5.1.9 Global Documents

This Application Usage defines no Global Documents.

5.1.10 Resource Interdependencies

This Application Usage defines no additional resource interdependencies.

5.1.11 Authorization Policies

The Primary Principal SHALL have only read access right to the IM Conversation History Metadata document.

The IM Service SHALL have full access rights including create, read, modify, and delete any IM Conversation History Metadata documents in the Users Tree.

An HTTP “403 Forbidden” error response SHALL be sent to the XDMC if the HTTP request by the XDMC fails to get authorized by the XDMS.

5.1.12 Search Capabilities

The Conversation History Application Usage MAY support search. If the search feature is supported, it SHALL be possible to search for Conversation History and following rules apply:

The Conversation History Application Usage SHALL support a collection “org.openmobilealliance.conv-history/users/[XUI]/conv-history” as defined in [OMA-XDM-CORE-TS]. The other possible collections mentioned in [OMA-XDM-CORE-TS] (“org.openmobilealliance.conv-history/users/” and “org.openmobilealliance.conv-history/users/[XUI]/”) SHALL NOT be supported by the Conversation History Application Usage.

The basic XQuery expression [OMA-XDM-CORE-TS] supported by the IM XDMS for this Application Usage SHALL be as follows:

```
xquery version "1.0";
declare default element namespace "urn:oma:xml:im:history-list";
```

```
for $g in collection([Data_Source])/history-list/history
where [Condition]
return $g
```

where:

[Data_Source] represents collection that SHALL be searched. For the Conversation History Application Usage only the value “org.openmobilealliance.conv-history/users/[XUI]/conv-history” SHALL be used and the search SHALL be executed over the Conversation History document of the User identified by [XUI].

[Condition] represents a logical expression defined by an XDMC. It MAY include any combination of elements/attributes from the Conversation History document.

Example of the Condition:

```
$g/subject="Football"
```

All Search Requests that do not comply with the basic XQuery expression as defined in this chapter SHALL be responded with an HTTP “409 Conflict” error response as defined by [OMA-XDM-CORE-TS].

5.2 Deferred Messages Metadata

5.2.1 Structure

The root element of the Deferred Messages Metadata document is <history-list> which contains one or more <history> elements. The <history-list> MAY include any other attributes from any other namespaces for the purposes of extensibility.

Each <history> element contains supplementary descriptive information regarding the Deferred Message in question. The <history> element:

1. SHALL include a "date" attribute representing the date when the message was stored by the Deferred Function. This attribute SHALL not exceed the precision of the day of the month;
2. SHALL include a "history-reference" attribute representing the complete path that uniquely identifies the actual content of the message;
3. MAY include any other attributes from any other namespaces for the purposes of extensibility;
4. SHALL include a <size> element representing the size of the stored content;
5. MAY include an <expiry> element representing the date at which the message expires;
6. MAY include a <subject> element representing the Subject header field of the SIP request;
7. SHALL include a <pager> element, containing:
 - a) a mandatory <time-stamp> element representing the time when the message was saved;
 - b) a mandatory <from> element taken from the “From” header field of the SIP request;
 - c) either
 1. the <to> element containing the “To” header field of the SIP request if the message is sent to one IM user; or
 2. the <recipient-list> element if the message is aimed to multiple users. This element contains a copy of intended recipients, e.g. the group session participants or the URIs listed in the URI-list case;
 - d) an optional <auth-id> element representing the Authenticated Originator’s IM Address as defined in [OMA-IM-TS] if Privacy setting allows;
 - e) optionally any other attributes from any other namespaces for the purposes of extensibility.
8. MAY include any other elements from any other namespaces for the purposes of extensibility.

The <recipient-list> element SHALL contain one or more <entry> elements. Each <entry> element:

- SHALL include a "uri" attribute representing the URI of a recipient for the message;
- MAY include a <display-name> element, containing a human-readable name corresponding to the message recipient's.

In case of predefined groups, the <recipient-list> element SHALL contain the “group-uri” and MAY contain the “group-display-name” attributes.

5.2.2 Application Unique ID

The AUID SHALL be “org.openmobilealliance.deferred-list”.

5.2.3 XML Schema

The Deferred Messages Metadata document SHALL be composed according to the XML Schema defined in [XSD_HIST-DEF-META].

5.2.4 Default Namespace

The default namespace SHALL be "urn:oma:xml:im:history-list" defined in [XSD_HIST-DEF-META].

5.2.5 MIME Type

The MIME type for the Deferred Messages Metadata document SHALL be "application/vnd.oma.im.deferred-list+xml".

5.2.6 Validation Constraints

The XML document SHALL conform to the XML Schema defined in [XSD_HIST-DEF-META] with the clarifications given in the sub-clause 5.1.6 *Validation Constraints*.

5.2.7 Data Semantics

Each <history> element contains descriptive information about one Deferred Message stored at the storage. The IM Server creates the <history> element, and all the values of XML elements and attributes are set by the IM Server.

The "date" attribute of the <history> element defines the date when the User sent the message derived from the SIP request. The value of the <subject> element corresponds to the Subject header field of the SIP request.

The value of the <size> element is set by the IM Server to the size of the stored content measured in kBytes.

The <pager> element SHALL be used for the Deferred Messages. The <time-stamp> sub-element of the <pager> element is set to the time when the User sent the message derived from the request. Values of the <from> and <to> sub-elements are derived from the SIP request. The value of the <auth-id> sub-element is set according to Authenticated Originator's IM Address defined in [OMA-IM-TS] if the Privacy settings allow. The <pm-list> sub-element has to be always filled if the message is aimed to multiple users. The <pm-list> element contains a copy of the the intended recipients, e.g. group members.

5.2.8 Naming Conventions

There SHALL be only one Deferred Message Metadata document per XUI for the Deferred Message application usage and the document name SHALL be "deferred-list".

5.2.9 Global Documents

This Application Usage defines no Global Documents.

5.2.10 Resource Interdependencies

This Application Usage defines no additional resource interdependencies.

5.2.11 Authorization Policies

The Primary Principal SHALL have only read access right to the Deferred Message Metadata document.

The IM Service SHALL have full access rights including create, read, modify, and delete any Deferred Message Metadata documents in the Users Tree.

An HTTP "403 Forbidden" error response SHALL be sent to the XDMS if the HTTP request by the XDMS fails to get authorized by the XDMS.

5.2.12 Search Capabilities

The Deferred Message Application Usage MAY support search. If the search feature is supported, it SHALL be possible to search for Deferred Messages Metadata and the following rules apply:

The Deferred Message Application Usage SHALL support a collection “org.openmobilealliance.deferred-list/users/[XUI]/deferred-list” as defined in [OMA-XDM-CORE-TS]. The other possible collections mentioned in [OMA-XDM-CORE-TS] (“org.openmobilealliance.deferred-list/users/” and “org.openmobilealliance.deferred-list/users/[XUI]/”) SHALL NOT be supported by the Deferred Message Application Usage.

The basic XQuery expression [OMA-XDM-CORE-TS] supported by the IM XDMS for this Application Usage SHALL be as follows:

```
xquery version "1.0";
declare default element namespace "urn:oma:xml:im:history-list";

for $g in collection([Data_Source])/history-list/history
where [Condition]
return $g
```

where:

[Data_Source] represents collection that SHALL be searched. For the Deferred Message Application Usage only the value “org.openmobilealliance.deferred-list/users/[XUI]/deferred-list” SHALL be used and the search SHALL be executed over the Deferred Message Metadata XML document of the User identified by [XUI].

[Condition] represents a logical expression defined by an XDMC. It MAY include any combination of elements/attributes from the Deferred Messages Metadata document.

Example of the Condition:

```
$g/subject="Football"
```

All Search Requests that do not comply with the basic XQuery expression as defined in this chapter SHALL be responded with an HTTP “409 Conflict” error response as defined by [OMA-XDM-CORE-TS].

6. Subscribing to Changes in the XML Documents

The IM XDMS SHALL support subscriptions to changes in the XML documents as defined by the procedures in section 6.2.2.1 step 2 to step 6 and 6.2.2.2 of the [OMA-XDM_CORE-TS].

Appendix A. Change History

(Informative)

A.1 Approved Version History

Reference	Date	Description
n/a	n/a	No prior version

A.2 Draft/Candidate Version 1.0 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-TS-IM_XDM-V1_0	09 Jan 2006	n/a 5.1 5.2	Initial version OMA-PAG-2005-0614 Incorporating changes OMA-PAG-2005-0619 Incorporating changes OMA-PAG-2005-0618
	12 Apr 2006	5.2.1 5.1.4 5.1.5 5.2.4 5.2.5 A.1, A.2	Incorporating changes OMA-PAG-2006-0044 Incorporating changes OMA-PAG-2006-0139 Incorporating changes OMA-PAG-2006-0141R01
	23 Jun 2006	Appendix B 5.1.8, C.1.1 5.1.1, 5.1.2 5.2.7, 5.2.1 5.2.7	Incorporated CRs: OMA-PAG-2006-0140R01 OMA-PAG-2006-0226R01 OMA-PAG-2006-0264 OMA-PAG-2006-0283 OMA-PAG-2006-0286 OMA-PAG-2006-0287R01 OMA-PAG-2006-0352R01
	31 Aug 2006	5.2, 2, 5.1.4, 5.1.6, B.1 B.2, 2.1, 2.2 5.1.1 5.1.11 5.1.3, 5.1.1	Incorporated CRs: OMA-PAG-2006-0402R01 OMA-PAG-2006-0463 OMA-PAG-2006-0464R01 OMA-PAG-2006-0424R02 OMA-PAG-2006-0467 OMA-PAG-2006-0425R01 OMA-PAG-2006-0426R02
	01 Sep 2006	C.2.1 5.1.6	Incorporated CRs: OMA-PAG-2006-0440R03 OMA-PAG-2006-0441R03
	05 Sep 2006	Header, 1, 2.1, 3.2	Editorial corrections
	09 Sep 2006	5.1.4, 5.1.5, 5.1.6, 5.1.7, 5.1.8, C.1.1	Incorporated CRs: OMA-PAG-2006-0519R01 OMA-PAG-2006-0545
	17 Oct 2006	5.3.1, 5.3.3, 5.3.7, 5.1.1 5.2.1, 2.1, 5.2.7, 5.2.2 5.2.3, 5.2.4 5.2.5, 5.2.6 5.2.8, C.1.1 C.2.1, 2.1, 5.3.1, 5.3.3 5.3.6, 5.3.7 4, B.1, B.2 5.1.1, 5.1.7, 5.2.1, 5.2.7	Incorporated CRs: OMA-PAG-2006-0517R02 OMA-PAG-2006-0539R01 OMA-PAG-2006-0568R01 OMA-PAG-2006-0571 OMA-PAG-2006-0570R01 OMA-PAG-2006-0569 OMA-PAG-2006-0587R02 OMA-PAG-2006-0596R01 OMA-PAG-2006-0598 OMA-PAG-2006-0599 OMA-PAG-2006-0603R01 OMA-PAG-2006-0623

Document Identifier	Date	Sections	Description
Draft Versions OMA-TS-IM_XDM-V1_0	19 Oct 2006	B.1, B.2, 5.1.1, 5.2.1, 5.2.7, 5.1.4, 5.1.4, 5.1.8, 5.2.2, 5.2.4, 5.2.5, 5.2.8, C.1.1	Incorporated CRs: OMA-PAG-2006-0633 OMA-PAG-2006-0649 OMA-PAG-2006-0651 OMA-PAG-2006-0653R01
	20 Oct 2006	2.1	Incorporated CR: OMA-PAG-2006-0656
	07 Nov 2006	All	Editorial clean-up of references and document styles.
	05 Jun 2007	All sections	Incorporated CRs : OMA-IM-2007-0038R03 OMA-IM-2007-0169R01 OMA-IM-2007-0170R01 OMA-IM-2007-0070 OMA-IM-2007-0076 OMA-IM-2007-0079 OMA-IM-2007-0075 OMA-IM-2007-0039
	11 Jun 2007	5.1.6 5.1.1, 5.2.1 5.1.1, 5.2.1 5.1.4,5.1.5, 5.2.4, 5.2.5 5.1.11, 5.2.11 5.1.12 5.2.12 Appendix C	Incorporated CRs: OMA-IM-2007-0240 OMA-IM-2007-0243 OMA-IM-2007-0244 OMA-IM-2007-0246 OMA-IM-2007-0247 OMA-IM-2007-0283 OMA-IM-2007-0284 OMA-IM-2007-0078R01
	16 Jul 2007	All	Editorial Clean-up
Candidate Versions: OMA-TS-IM_XDM-V1_0	16 Aug 2007	n/a	Status changed to Candidate TP doc #: OMA-TP-2007-0301R02- INP_SIMPLE_IM_ERP_for_Candidate_approval

Appendix B. Static Conformance Requirements (Normative)

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

- IM XDM Application Usages

Each SCR table MUST have a title and MUST have only the following columns:

- Item: Identifier for a feature. It MUST be of type ScrItem in the dependency grammar in Section 7.
- Function: Short description of the feature.
- Reference: Section(s) of the specification(s) with more details on the feature.
- Requirement: Other features required by this feature, independent of whether those other features are mandatory or optional. The notation in the dependency grammar in Section 7 MUST be used for this column when other features are required, else the column MUST be left empty.

This section describes the dependency grammar notation to be used in the Requirement column of the SCR and CCR tables using ABNF [RFC2234].

```

TerminalExpression =  ScrReference
                    / NOT TerminalExpression
                    / TerminalExpression LogicalOperator TerminalExpression
                    / "(" TerminalExpression ")"

ScrReference =      ScrItem
                    / ScrGroup

ScrItem =           SpecScrName "-" GroupType "-" DeviceType "-" NumericId "-"
                    Status
                    / SpecScrName "-" DeviceType "-" NumericId "-" Status

ScrGroup =          SpecScrName ":" FeatureType
                    / SpecScrName "-" GroupType "-" DeviceType "-" FeatureType

SpecScrName = 1*Character; See Section 8
GroupType = 1*Character; See Section 10
DeviceType = "C" / "S"; C - client, S - server
NumericId = Number Number Number
Status = "M" / "O"; M - Mandatory, O - Optional
LogicalOperator = "AND" / "OR"; AND has higher precedence than OR and OR is inclusive
FeatureType = "MCF" / "OCF" / "MSF" / "OSF"; See Section 9
Character = %x41-5A ; A-Z
Number = %x30-39 ; 0-9
    
```

B.1 IM XDM Application Usages of XDM Server

Item	Function	Reference	Requirement
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Item	Function	Reference	Requirement
IM_XDM-AUCM-S-001-M	IM Conversation History Metadata document structure and elements supported	5.1.1	
IM_XDM-AUCM-S-002-M	Application Unique ID of IM History Metadata documents	5.1.2	
IM_XDM-AUCM-S-003-M	XML schema and validation constraints of IM Conversation History Metadata	[XSD_HIST-DEF-META] 5.1.5	
IM_XDM-AUCM-S-004-M	MIME type of IM Conversation History Metadata, documents	5.1.4	
IM_XDM-AUCM-S-005-M	Data semantics of IM Conversation History Metadata document	5.1.6	
IM_XDM-AUCM-S-006-M	Naming conventions for IM Conversation documents	5.1.7	
IM_XDM-AUCM-S-007-M	Authorization policies for manipulating IM User Access Policy documents	5.1.10	
IM_XDM-AUDM-S-001-M	Deferred Message Metadata document structure and elements supported	5.2.1	
IM_XDM-AUDM-S-002-M	Application Unique ID of Deferred Message Metadata document	5.2.2	
IM_XDM-AUDM-S-003-M	MIME type of IM Deferred Message Metadata document	5.2.4	
IM_XDM-AUDM-S-004-M	XML schema and validation constraints of Deferred Message Metadata document	[XSD_HIST-DEF-META] 5.2.5	
IM_XDM-AUDM-S-005-M	Data semantics of Deferred Message Metadata document	5.2.6	
IM_XDM-AUDM-S-006-M	Naming conventions for Deferred Message Metadata document	5.2.7	
IM_XDM-AUDM-S-007-M	Authorization policies for manipulating Deferred Message Metadata document	5.2.10	
IM_XDM-SUBS-S-001-M	Subscribing to changes in XML documents	6	Core_XDM-SUB-S-001-O AND Core_XDM-SUB-S-002-O

B.2 IM Application Usages of XDMC

Item	Function	Reference	Requirement
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Item	Function	Reference	Requirement
IM_XDM-AUCM-C-001-O	IM Conversation History Metadata document structure and elements supported	5.1.1	IM_XDM-AUCM-C-002-O, -003-O, -004-O, -005-O, -006-O and -007-O.
IM_XDM-AUCM-C-002-O	Application Unique ID of IM Conversation History Metadata document	5.1.2	IM_XDM-AUCM-C-001-O
IM_XDM-AUCM-C-003-O	XML schema and validation constraints of IM Conversation History Metadata	[XSD_HIST-DEF-META] 5.1.5	IM_XDM-AUCM-C-001-O
IM_XDM-AUCM-C-004-O	MIME type of IM Conversation History Metadata document	5.1.4	IM_XDM-AUCM-C-001-O
IM_XDM-AUCM-C-005-O	Data semantics of IM Conversation History Metadata document	5.1.6	IM_XDM-AUCM-C-001-O
IM_XDM-AUCM-C-006-O	Naming convention for IM Conversation History Metadata document	5.1.7	IM_XDM-AUCM-C-001-O
IM_XDM-AUCM-C-007-O	Authorization policy for manipulating IM Conversation History Metadata document	5.1.10	IM_XDM-AUCM-C-001-O
IM_XDM-AUDM-C-001-O	Deferred Message Metadata document structure and elements supported	5.2.1	IM_XDM-AUDM-C-002-O, -003-O, -004-O, -005-O, -006-O and -007-O
IM_XDM-AUDM-C-002-O	Application Unique ID of Deferred Message Metadata document	5.2.2	IM_XDM-AUDM-C-001-O
IM_XDM-AUDM-C-003	XML schema and validation constraints of Deferred Message Metadata	[XSD_HIST-DEF-META] 5.2.5	IM_XDM-AUDM-C-001-O
IM_XDM-AUDM-C-004-O	MIME type of Deferred Message Metadata document	5.2.4	IM_XDM-AUDM-C-001-O
IM_XDM-AUDM-C-005-O	Data semantics of Deferred Message Metadata document	5.2.6	IM_XDM-AUDM-C-001-O
IM_XDM-AUDM-C-006-O	Naming convention for Deferred Message Metadata document	5.2.7	IM_XDM-AUDM-C-001-O
IM_XDM-AUDM-C-007-O	Authorization policy for manipulating Deferred Message Metadata document	5.2.10	IM_XDM-AUDM-C-001-O
IM_XDM-SUBS-C-001-O	Subscribing to changes in XML documents	6	Core_XDM-SUB-S-001-O AND Core_XDM-SUB-S-002-O

Appendix C. Examples (Informative)

C.1 Manipulating IM Conversation History Metadata Documents

C.1.1 Obtaining an IM Conversation History Metadata Document

Figure A.1 describes how an XDMC obtains an IM Conversation History Metadata document.

It is assumed that the address of Aggregation Proxy is “xcap.example.com” and thus the XCAP Root URI is “xcap.example.com”.

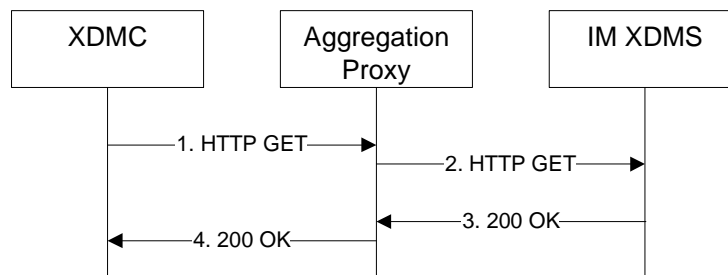


Figure A.1: XDMC obtains a particular IM Conversation History Metadata document

The details of the flows are as follows:

- 1) The user “sip:mimin.underwood@example.com” wants to obtain the document describing the metadata about her stored conversations. For this purpose the XDMC sends an HTTP GET request to the Aggregation Proxy.

```

GET /org.openmobilealliance.conv-history/users/
    sip:mimin.underwood@example.com/conv-history HTTP/1.1
Host: xcap.example.com
...
  
```

- 2) Based on the AUID the Aggregation Proxy forwards the request to IM XDMS.
- 3) After the IM XDMS has performed the necessary authorisation checks on the request originator, the IM XDMS sends an HTTP “200 OK” response including the requested document in the body.

```

HTTP/1.1 200 OK
Etag: "etul5"
...
Content-Type: application/vnd.oma.im.history-list+xml

<?xml version="1.0" encoding="UTF-8"?>
<history-list xmlns="urn:oma:xml:im:history-list" >
  <history date="2006-08-13" history-reference="sip:123456@historyserver1.example.com">
    <size>10</size>
    <expiry>2006-08-15T19:13:00.0Z</expiry>
    <subject>Soccer</subject>
    <pager>
      <time-stamp>2006-08-13T19:13:00.0Z</time-stamp>
      <from>sip:merlin@example.com</from >
      <to>sip:mimin.underwood@example.com</to>
      <auth-id>sip:medlin@example.com</auth-id>
    </pager>
  </history>

  <history date="2006-08-14" history-reference="sip:123457@historyserver1.example.com">
    <size>25</size>
    <expiry>2006-08-16T15:05:00.0Z</expiry>
    <subject>"friends"</subject>
  </history>
</history-list>
  
```

```
<conference>
  <time-start>2006-08-14T15:05:00.0Z </time-start>
  <time-end>2006-08-14T15:15:00.0Z </time-end>
  <recording-name>friends</recording-name>
  <conf-list>
    <entry uri="sip:mimin.underwood@example.com">
      <display-name>Mimin</display-name>
    </entry>
    <entry uri="sip:medlin@example.com" />
  </conf-list>
</conference>
</history>
</history-list>
```

The Aggregation Proxy routes the response to the XDMC.

NOTE: For information on how to get the actual content of the history, please refer to [OMA-IM-TS], section 13.2.1.