Immersive Social Centre XDM Specification

Candidate Version 1.0 – 01 Jul 2014

Open Mobile Alliance

OMA-TS-ISC_XDMS-V1_0-20140701-C

Contents

1. Scope

This specification describes the data formats and XDM Application Usages for the Immersive Social Centre (ISC) XML Documents.

2. References

2.1 Normative References

[ISC_AD] "Immersive Social Centre Architecture", Version 1.0, Open Mobile Alliance™, OMA-AD-ISC-V1.0, URL: http://www.openmobilealliance.org/

[ISC_RD] "Immersive Social Centre Requirement", Version 1.0, Open Mobile Alliance™, OMA-RD-ISC-V1.0, URL: http://www.openmobilealliance.org/

[ISC_TS] "Immersive Social Centre Specification", Version 1.0, Open Mobile Alliance™, OMA-TS-ISC-V1.0, URL: http://www.openmobilealliance.org/

[ISC_XSD_ContentList] "ISC Content List Document", Version 1.0, Open Mobile Alliance™, OMA-SUP-XSD_ISC_Contents_List-V1.0, URL: http://www.openmobilealliance.org/

[ISC_XSD_GroupExt] "ISC Group list document", Version 1.0, Open Mobile Alliance™, OMA-SUP-XSD_ISC_Group_Ext-V1.0, URL: http://www.openmobilealliance.org/

[ISC_XSD_UP] "ISC User Prefences document", Version 1.0, Open Mobile Alliance™, OMA-SUP-XSD_ISC_UP-V1.0, URL: http://www.openmobilealliance.org/

[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

[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_AD] "XML Document Management Architecture", Version 2.2, Open Mobile Alliance™, OMA-AD-XDM-V2_2, URL: http://www.openmobilealliance.org/

[XDM_Core] "XML Document Management (XDM) Specification", Version 2.2, Open Mobile Alliance™, OMA-TS-XDM_Core-V2_2, URL: http://www.openmobilealliance.org/

[XDM_Group] "Group XDM Specification", Version 1.1, Open Mobile Alliance™, OMA-TS-XDM_Group-V1_1, URL: http://www.openmobilealliance.org/

[XDM_RD] "XML Document Management Requirements", Version 2.2, Open Mobile Alliance™, OMA-RD-XDM-V2_2, URL: http://www.openmobilealliance.org/

[XDM_UPP] "UPP Directory XDM Specification"; Open Mobile Alliance™, OMA-TS-XDM_UPP_Directory-V1_0, URL: http://www.openmobilealliance.org/

[XDM_XSD_ext] "XML Schema Definition: XDM Extensions", Version 1.0, Open Mobile Alliance™, OMA-SUP-XSD_xdm_extensions-V1_0, URL: http://www.openmobilealliance.org/

[XDM_XSD_ext_2_1] "XML Schema Definition: XDM 2.1 - Extensions", Version 1.0, Open Mobile Alliance™, OMA-SUP-XSD_xdm_2_1_extensions-V1_0, URL: http://www.openmobilealliance.org/

IETF

OMA

2.2 Informative References

[OMADICT] "Dictionary for OMA Specifications", Version 2.9, Open Mobile Alliance™, OMA-ORG-Dictionary-V2_9,
URL: http://www.openmobilealliance.org/

OMA

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].
Access Permissions List	Use definition from [XDM_AD].
Access Permissions List Document	Use definition from [XDM_AD].
Admin Principal	Use definition from [XDM_RD].
Alias Principal	Use definition from [XDM_RD].
Alias Principals List Document	Use definition from [XDM_AD].
Application Unique ID	Use definition from [XDM_Core].
Application Usage	Use definition from [XDM_Core].
Document Reference	Use definition from [XDM_AD].
Document Selector	Use definition from [XDM_Core].
Enabler	Use definition from [OMADICT].
Entity Tag	Use definition from [XDM_Core].
Forwarding Notification List	Use definition from [XDM_AD].
Forwaring Notification List Document	Use definition from [XDM_AD].
Global Document	Use definition from [XDM_Core].
Global Tree	Use definition from [XDM_Core].
Group Usage List	Use definition from [XDM_RD].
Group Usage List Document	Use definition from [XDM_RD].
History Information	Use definition from [XDM_AD].
Modification History Information Document	Use definition from [XDM_Core].
Node Selector	Use definition from [XDM_Core].
Node Selector Separator	Use definition from [XDM_Core].
Node URI	Use definition from [XDM_Core].
Primary Principal	Use definition from [XDM_RD].
Principal	Use definition from [OMADICT].

Request History Document	Use definition from [XDM_Core].
URI List	Use definition from [XDM_RD].
URI List Document	Use definition from [XDM_RD].
XCAP Root	Use definition from [XDM_Core].
XCAP Server	Use definition from [XDM_Core].
XDCP Request	Use definition from [XDM_Core].
XDM Agent	Use definition from [XDM_AD].
XDM Document	Use definition from [XDM_RD].
XDM Document Part	Use definition from [XDM_RD].
XDM Preferences Document	Use definition from [XDM_Core].
XDM Resource	Use definition from [XDM_RD].
XDMC	Use definition from [XDM_AD].
XDMS	Use definition from [XDM_AD].

3.3 Abbreviations

ABNF	Augmented Backus-Naur Form
AUID	Application Unique ID
E-Tag	Entity Tag
HTTP	Hypertext Transfer Protocol
IETF	Internet Engineering Task Force
ISC	Immersive Social Centre
MIME	Multipurpose Internet Mail Extensions
OMA	Open Mobile Alliance
OMNA	Open Mobile Naming Authority
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

4. Introduction

The ISC XDMS Technical Specification provides the Application Usages for ISC XDM Documents.

4.1 Version 1.0

ISC XDMS TS version 1.0 supports the following Application Usages:

- ISC Contents List Application Usage, and
- ISC Group Application Usage, and
- ISC User Preferenes Application Usage.

5. ISC XDM Application Usages

5.1 ISC Contents List Application Usage

The ISC Contents List Application Usage contains all data about the list of contents (including metadata, Associated Contents) organized in the structure below. The ISC Contents List is managed (read/write/update) by the ISC Server Contents Guide Function and interpreted (read) by the ISC Clients for their respective ISC Users.

5.1.1 Structure

The ISC Contents List Application Usage SHALL conform to the structure described in this section. The Schema definition is provided in section 5.1.3 "*XML Schema*".

The following is the structure of the ISC Contents List Document for retrieving the Full and Personalized Contents List Document from the ISC XDMS. This ISC Contents List structure is not exhaustive. It can also include more information provided either by ISC Server or Content Provider.

The ISC Contents List Document SHALL include one root element <Contents_list>.

The <Contents_list> element SHALL include one or more <ContentRef> element containing the unique Identifier of the content among the Service Providers. SIP URI MAY be set as the value of <ContentRef> for the VOD content and channel number MAY be set as the value for the LIVE Content;

The <ContentRef> element SHALL include one <Source> element to identify the content is generated by the user/content provider/service provider. The value of the element <Source> SHALL be set as "Non-user", if the content is generated by the content/service provider, otherwise the value of the element <Source> SHALL be set as "User", if the content is generated by the user;

The <Source> element SHALL include one or more <Content_Metadata> element containing the metadata of the content if the value of the element <Source> is "Non-user".

The <Content_Metadata> element SHALL include the below elements containing:

a) one <ContentName> element to containing the name of the content;

b) one <Keywords> element containing the keywords associated with the content. The Keywords MAY be created by the server or user;

c) one <MediaType> element to identify the media type of the content. The media type MAY be audio or video;

d) one <Genre> element to identify the genre of the content. The value of the element <Genre> MAY either be set as action/drama/adventure/comedy etc.;

e) one <Rating> element containing the rating of the content which MAY provided by the content/service provider or by the user;

f) one <URL> element containing the Uniform Resource Locator of the content. URL SHALL either be generated by the server/user;

g) one <AspectRatio> element containing the aspect ratio (standard/high definition resolution) of the content;

h) one <AudioStreamType> element containing the audio stream type of the content. The value of the element <AudioStreamType > SHALL be either set as AC3, AAC, MPEG1 etc.,

i) one <VideoStreamType> element containing the video stream type of the content. The value of the element <VideoStreamType > SHALL be either set as MPEG2, MPEG4 etc.,

j) one <UserChoice> element refers to the type of content list document required by the ISC User.

The <UserChoice> element SHALL include three <RefName> elements whose value SHALL be set as "FullContentsList", "ReferPredefinedPref" and "ReferOnDemandPref" respectively;

a) To receive the full Contents List the value of the <UserChoice> sub-element <RefName> SHALL be set as "FullContentsList".

b) To receive the personalized Contents List according to the stored preferences, the value of the <UserChoice> sub-element <RefName> SHALL be set as "ReferPredefinedPref".

c) To receive the personalized Contents List according to the dynamic list of user preferences and/or user's context information (e.g., list of other contents related to the content being watched) set as filters, the value of the <UserChoice> sub-element <RefName> SHALL be set as "ReferOnDemandPref".

This Contents List structure doesn't include elements for the user generated contents (that is, the value of the element <Source> is "User').

5.1.2 Application Unique ID

The AUID MUST be "org.openmobilealliance.isc.contentslist".

5.1.3 XML Schema

The schema is described in [ISC_XSD_ContentList].

5.1.4 Default Namespace

The default element namsespace MUST be "urn:oma:xml:isc:contentslist".

5.1.5 MIME Type

The MIME type MUST be "application/vnd.oma.isc.contents-list+xml".

5.1.6 Validation Constraints

See description in section 5.1.1.

5.1.7 Data Semantics

The data semantics are organized into basic types, elementary types and composite types. The definitions use ABNF notation [RFC5234] to define the data semantics of the elements and the attributes.

5.1.8 Naming Conventions

The filename MUST be "isc-contents-list".

5.1.9 Global Documents

Not applicable.

5.1.10 Resource Interdependencies

Not applicable.

5.1.11 Authorization Policies

The authorization policies are defined as follows:

- The ISC user MUST have permission to perform all operations defined in section "Document Management" of [XDM_Core].
- The ISC Server MUST have permissions that permit all read operation and forbid all writing/updating operations defined in section "Document Management" of [XDM_Core].
- The ISC User and the ISC Server MUST have permission to perform all operations defined in section "Subscribing to changes in the XDM Resources" of [XDM_Core].

5.1.12 Subscription to Changes

Subscription to changes MUST be supported as specified in [XDM_Core] section "*Subscriptions to changes in the XDM Resources*".

5.1.13 Search Capabilities

Not applicable.

5.1.14 XDM Preferences Document

If History Information Document (section 5.1.15) is supported, the XDM Preferences Document MUST be supported, as described in section "*XDM Preference Document*" of [XDM_Core].

5.1.15 History Information Documents

Modification History Information Document MAY be supported, as described in section "*Modification History Information Document*" of [XDM_Core].

Request History Information Document MAY be supported, as described in section "*Request History Information Document*" of [XDM_Core].

5.1.16 Forwarding

Not applicable.

5.1.17 Restore

Not applicable.

5.1.18 Document Reference

Document Reference MAY be supported, as described in section "Document Reference" of [XDM_Core].

5.1.19 Differential Read and Write

Not applicable.

5.1.20 Contents List Document Management

The Contents List document stored in ISC XDMS (via XDM-4i interface) contains list of contents from one or more Content Providers.

5.2 ISC Group Application Usage

The ISC Group Application Usage contains all data about the list of Content Viewing Groups, and it SHALL re-use and expand the "Group XDM Application Usages" as defined in [XDM_Core] and [XDM_Group].

5.2.1 Structure

The ISC Group Document SHALL conform to the structure described in this section. The sechma definition is provided in section 5.2.3 "XML Schema".

The ISC Group Document re-uses parts of the attributes and sub-elements of <list-service> element to contain the group information, and obeys the rules of the <list-service> element as defined in [XDM_Core] and [XDM_Group], including:

a) "usr" attribute to contain the group identity;

b) <display-name> element to contain a human readable name of the group;

c) <list> element to contain the list of the group members;

d) <invite-members> element to contain the list of the group members invited;

e) <max-participant-count> element to contain the maximum of participant count;

f) <ruleset> element to contain the authorization policy associated with this group;

g) <subject> element to contain a topic or description of the group;

h) one or more <age-restrictions> elements to contain the allowed age or age-range(s) of a participant;

i) <session-active-policy> element to describe the rules for determining whether a group session is allowed to become active or remain active;

j) <searchable> element to indicate that the group identity can be retrieved using a search request.

The ISC Group Document SHALL provide the <isc-group-ext> element to contain more group information, including:

a) one or more <content > element to describe the contents (will be viewed, or being viewed or viewed) by the group.

b) one <session> element to contain the content viewing session related information for the group;

c) one <active> element to contain the group status ("yes" means the group is active, other value means the group is not active).

Each of the new <content > element SHALL be composed of a sequence of zero or more elements, each of which is

a) one <content-identifier> element containing the identifier of the content;

b) one <content-name> element containing the name of the content;

c) one <content-description> element containing the description of the content.

Each of the new <content > element MAY contain any other attributes and elements to descript the content.

The new <session> element SHALL be composed of a sequence of zero or more elements, each of which is

a) one <ISCConvergenceID> element containing the identifier of the content viewing session if the session is active;

b) one <session-status> element containg the status of the content viewing session ("yes" means the session is ongoing, and other value means the session is closed).

Each of the new <session> element MAY contain any other attributes and elements to descript the content.

5.2.2 Application Unique ID

Same as the Group XDM Application Usage.

5.2.3 XML Schema

The schema is described in [ISC_XSD_GroupExt], [XDM_XSD_ext] and [XDM_XSD_ext_2_1].

5.2.4 Default Namespace

The default namespace SHALL be "urn:oma:xml:isc:group-ext".

5.2.5 MIME Type

The MIME type SHALL be "application/vnd.oma.isc.group+xml"

5.2.6 Validation Constraints

Same as the Group XDM Application Usage.

5.2.7 Data Semantics

Same as the Group XDM Application Usage.

5.2.8 Naming Conventions

The filename MUST be “isc-group-ext”.

5.2.9 Global Documents

Same as the Group XDM Application Usage.

5.2.10 Resource Interdependencies

Same as the Group XDM Application Usage.

5.2.11 Authorization Policies

The authorization policies SHALL obey the rules for the Group XDM Application Usages, and SHALL support the following rules:

- The ISC User MUST have permission to perform all operations defined in section “Document Management” of [XDM_Core].
- The ISC Server MUST have permissions that permit all read operation and forbid all writing/updating operations defined in section ”Document Management” of [XDM_Core].
- The ISC User and the ISC Server MUST have permission to perform all operations defined in section “Subscribing to changes in the XDM Resources” of [XDM_Core].

5.2.12 Subscription to Changes

Same as the Group XDM Application Usage.

5.2.13 Search Capabilities

The ISC Group Application Usage SHALL support the rules for search capabilities for the Group XDM Application Usage, and SHALL support the following searching rules:

- The searching operation MAY be based on the indentifiers of the conents viewed/being viewed by the Content Viewing Group, which is contained in <isc-group-ext/content /content-identifier>;
- The searching operation MAY be based on the names of the the conents viewed/being viewed by the Content Viewing Group, which is contained in <isc-group-ext/content /content-name>;
- The searching operation MAY be based on the pre-defined keywords about the conent viewed/being viewed by the Content Viewing Group, which is contained in <isc-group-ext/content /content-description>;
- If the XQuery expression does not contain Content Viewing Group related information, the ISC Group Application Usage SHOULD return whole of the ISC Group document according to the user preference and service policy.

5.2.14 XDM Preferences Document

Same as the Group XDM Application Usage.

5.2.15 History Information Documents

Same as the Group XDM Application Usage.

5.2.16 Forwarding

Same as the Group XDM Application Usage.

5.2.17 Restore

Same as the Group XDM Application Usage.

5.2.18 Document Reference

Same as the Group XDM Application Usage.

5.2.19 Differential Read and Write

Same as the Group XDM Application Usage.

5.2.20 Document Management

The ISC Group list document stored in ISC XDMS (via XDM-4i interface) contains list of Content Viewing Groups.

5.3 ISC User Preferences Application Usage

5.3.1 Structure

The ISC User Preferences Document SHALL conform to the structure described in this sub-clause. If the UPP Directory XDMS is used to reference an ISC profile, then its uses in the context of ISC User Preferences profile SHALL conform to [XDM_UPP].

The document SHALL contain one root element <isc-upp> that SHALL include:

1. one <isc-upp-set> element:

    a) MAY include one or more <profile> elements which contain the details of each ISC User Preferences profile available to the user. The <profile> element

        a. SHALL include an ‘id’ attribute that uniquely identifies the ISC user preference profile. If the UPP Directory XDMS [XDM_UPP] is used, the ‘id’ attribute value MAY be used as value of the ‘upp-id’ attribute of the ISC profile referenced in the UPP Directory XDMS [XDM_UPP], to uniquely identify the ISC <profile> element among other <upp> elements of the UPP Directory;

        b. MAY include a <display-name> element, containing a suggested name to display for this specific profile (e.g. Home). If the UPP Directory XDMS [XDM_UPP] is used, the element can also be used to populate the corresponding <display-name> element of the ISC profile element referenced in the UPP Directory XDMS;

        c. MAY include a <receive-user-expression> element from indicating how to support the received user interaction request;

        d. MAY include a <create-social-group> element indicating whether or now the participants group is created;

        e. MAY include a <set-social-relation> element rom indicating whether or now the social relationship of participants group is set;

f. MAY include a <store-primary-contents> element indicating whether or not the each Primary Contents, Associate Contents and Content Viewing Information is stored;

g. MAY include a <store-specific-contents> element indicating whether or not the specific contents is stored;

h. MAY include a <share-contents> element indicating which ISC User is targeted to receive the contents;

i. MAY include any other attributes or elements from any other namespaces for the purpose of extensibility;

5.3.2 Application Unique ID

The AUID SHALL be “org.openmobilealliance.isc-user-prefs”.

5.3.3 XML Schema

ISC User Preferences Document(s) SHALL conform to the XML schema described in [ISC_XSD_UP].

5.3.4 Default Namespace

The default element namespace used in the ISC User Preferences Application Usage is "urn:oma:xml:isc:user-prefs".

5.3.5 MIME Type

The MIME type for the ISC User Preferences Document SHALL be “application/vnd.oma.isc-user-prefs+xml”.

5.3.6 Validation Constraints

Not applicable.

5.3.7 Data Semantics

The <profile> element SHALL indicate the details of each ISC User Preference profile. The ‘id’ attribute of <profile> element indicates the unique identifier of the ISC User Preference profile and is of type “token”.

The <display-name> element value is of type “string”.

The <receive-user-expression> element SHALL indicate how to support the received user interaction request (See ISC-SOC-002 in [ISC_RD]). The value is of type “Boolean”. The possible values are:

“false” indicates that ISC Server rejects the operation with a SIP “403 Forbidden” response to the ISC CPGateway.

“true” indicates that the ISC Server forwards SIP MESSAGE to the ISC Client..

The <create-social-group> element SHALL indicate whether or not the participants group is created (See ISC-SOC-005 in [ISC_RD]). The value is of type “Boolean”. The possible values are:

“false” indicates that the ISC Server forwards SIP MESSAGE to the ISC Client.

“true” indicates that the ISC Server creates the social-group based upon the contacts group which is fetched by CPM-MSG interface.

The use <set-social-relation> element SHALL indicate whether or not the social relationship of participants group is set. The value is of type “Boolean”. The possible values are:

“false” indicates that ISC Server doesn’t set the social relationship for the contacts group which is fetched by CPM-MSG interface.

"true" indicates that the ISC Server sets the social relationship for the contacts group which is fetched by CPM-MSG interface

The <store-primary-contents> element SHALL indicate whether or not the each Primary Contents, Associate Contents and Content Viewing Information is stored (See ISC-SOC-013 in [ISC_RD]). The value is of type "Boolean". The possible values are:

"false" indicates that the ISC Server doesn't store the each Primary Contents, Associate Contents and Content Viewing Information in the ISC Server.

"true" indicates that the ISC Server store the each Primary Contents, Associate Contents and Content Viewing Information in the ISC Server.

The <store-specific-contents> element SHALL indicate whether or not the specific contents are stored. The value is of type "Boolean". The possible values are:

"false" indicates that the ISC Server doesn't store the ISC Contents based on user specific context.

"true" indicates that the ISC Server stores the ISC Contents based on user specific context in the ISC Server.

The <share-contents> element SHALL indicate which ISC User is targeted to receive the contents:

"false" indicates that the ISC Server doesn't send the newly created ISC Contents in the ISC Server to all of ISC User's subscriber list.

"true" indicates that the ISC Server sends the newly created ISC Contents in the ISC Server to all participants in ISC session

5.3.8 Naming Conventions

The filename MUST be "isc-user-prefs".

5.3.9 Global Documents

This Application Usage defines no Global Documents.

5.3.10 Resource Interdependencies

This application usage defines no additional resource interdependencies.

5.3.11 Access Permissions

The Access Permissions for manipulating ISC User Preferences Documents, i.e. create, delete, retrieve and modify, SHALL conform to [XDM_Core] sub-clause 5.6 "*Access Permissions Document*"

If the Access Permissions document is used, it SHALL conform to [XDM_Core] sub-clause 5.6 "*Access Permissions Document*" with the following restrictions:

1. The <document-rule> element SHALL include a "path" attribute specifying the ISC User Preferences Document Selector for which the rule applies
2. The <actions> child element of <rule> element SHALL only include the <allow-any-operation-own-data> element or/and the <allow-retrieve> element and/or the <allow-modify> element.

5.3.12 Subscription to Changes

This Application Usage MAY support subscription to changes as specified in [XDM_Core] section "*Subscriptions to changes in the XDM Resources*".

5.3.13 Search Capabilities

Not applicable.

5.3.14 XDM Preferences Document

Not applicable.

5.3.15 History Information Documents

Not applicable.

5.3.16 Forwarding

Not applicable.

5.3.17 Restore

Not applicable.

5.3.18 Document Reference

Not applicable.

5.3.19 Differential Read and Write

Not applicable.

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-ISC_XDMS-V1_0	21 Oct 2013	all	Baseline as agreed in: (INP#2013-0201)
	13 Mar 2014	5.1	Added description of ISC Content List application usage (CR#2014-0039R03)
	28 Apr 2014	5.2	Added description of ISC ISC Group application usage (CR#2014-0132R02)
		2.1, 2.2, 4, 5.3	Added description of ISC User Preference application usage (CR#2014-0136R02, CR#2014-0137, CR#2014-0138R01, and CR#2014-0139)
	29 Apr 2014		Updated to keep consistences.
	12 May 2014	5.1.1	Updated the description about structure for ISC content list application usage (CR#2014-0148).
	13 Jun 2014	2.1, 5.2.3, 5.3.1	Added two new references in section 2.1, and updated description about XML schema in section 5.2.3 (CR#2014-0152).
		5.1.7, 5.3.1	Editorial changes to keep consistences.
Candidate Version OMA-TS-ISC_XDMS-V1_0	01 Jul 2014	n/a	Status changed to Candidate by TP TP Ref # OMA-TP-2014-0151-INP_ISC_V1_0_ERP_and_ETR_for_Candidate_Approval