Simplified Converged Address Book XDM Specification

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Open Mobile Alliance

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2.2 Informative References

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OMA	Open Mobile Alliance

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	See [OMA XDM Core].
Application Usage	See [OMA XDM Core].
Confirmed Contact Card	See [S-CAB TS].
Contact Entry	See [S-CAB RD].
Contact Share	See [S-CAB RD].
Contact Subscription	See [S-CAB RD].
Contact View	See [S-CAB RD].
Document Reference	See [OMA XDM AD].
Document Selector	See [OMA XDM Core].
External Directories	See [S-CAB AD].
Forward XDCP Request	See [OMA XDM Core].
Forwarding Notification List Document	See [OMA XDM List].
History Information	See [OMA XDM AD].
Non-CAB Systems	See [S-CAB AD].
Non-CAB User	See [CAB AD].
S-AB Document	See [S-CAB AD].
S-CAB Client	See [S-CAB AD].
S-CAB Server	See [S-CAB AD].
S-CAB User	See [S-CAB RD].
S-CAB User Preferences	See [S-CAB AD].
S-CAB User Preferences Document	See [S-CAB AD].
Search Request	See [OMA XDM Core].
Simplified Address Book	See [S-CAB TS].
S-PCC Document	See [S-CAB AD].
Tracking Contact Card	See [S-CAB TS].
Tracking Contact Card Priority	See [S-CAB TS].
Update Object	See [S-CAB TS].
UPP Directory XDMS	UPP Directory XDMS.
URI	See [RFC3986].

XCAP User Identifier (XUI)	As defined and specified in [OMA XDM Core].
XDCP Document	See [OMA XDM Core].
XDCP Response	See [OMA XDM Core].
XDCP Response	See [OMA XDM Core].

3.3 Abbreviations

AB	Address Book
AUID	Application Unique ID
PCC	Personal Contact Card
SIP	Session Initiation Protocol
UPP	User Preferences Profile
XCAP	XML Configuration Access Protocol
XDM	XML Document Management
XDMC	XML Document Management Client
XDMS	XML Document Management Server
XML	eXtensible Markup Language
XQuery	XML Query
XUI	XCAP User Identifier

4. Introduction

This specification, which is a part of the S-CAB enabler, describes the following Application Usages:

- S-AB Application Usage;
- S-PCC Application Usage;
- S-CAB User Preferences Application Usage;
- S-CAB Indirect Update Object Application Usage;
- S-CAB S-PCC Interworking Application Usage;
- S-CAB S-AB Interworking Application Usage; and,
- S-CAB External Directories Search Application Usage.

and reuses the following Application Usages :

- Access Permissions List Application Usage, as defined in [OMA XDM List];
- Forwarding Notification List Application Usage as defined in [OMA XDM List];
- URI List Application Usage as defined in [OMA XDM List];
- XML Documents Directory Application Usage as defined in [OMA XDM Core]; and,
- XCAP Server Capabilities Application Usage as defined in [OMA XDM Core].

The S-CAB Application Usages MUST use the XDM architecture defined in [OMA XDM AD] and the [OMA XDM Core] procedures, with the clarifications and restrictions, with the clarifications and restrictions added in this specification.

4.1 Version 1.0

S-CAB XDM TS version 1.0 specifies the following S-CAB Application Usages:

- S-AB Application Usage
- S-PCC Application Usage
- S-CAB User Preferences Application Usage
- S-CAB Indirect Update Object Application Usage
- S-CAB S-PCC Interworking Application Usage
- S-CAB S-AB Interworking Application Usage
- S-CAB External Directories Search Application Usage

5. S-CAB XDM Application Usages

5.1 S-CAB Address Book

5.1.1 S-AB Application Usage

The S-AB Application Usage represents a network repository for an S-CAB User's address book. The S-AB Application Usage SHALL contain one Confirmed Contact Card per contact and zero or more Tracking Contacts Cards per contact. A Confirmed Contact Card and a Tracking Contact Card document are both of the type S-AB Document specified in the following sub sections.

5.1.1.1 Structure

An S-AB Document SHALL conform to the structure described in this section.

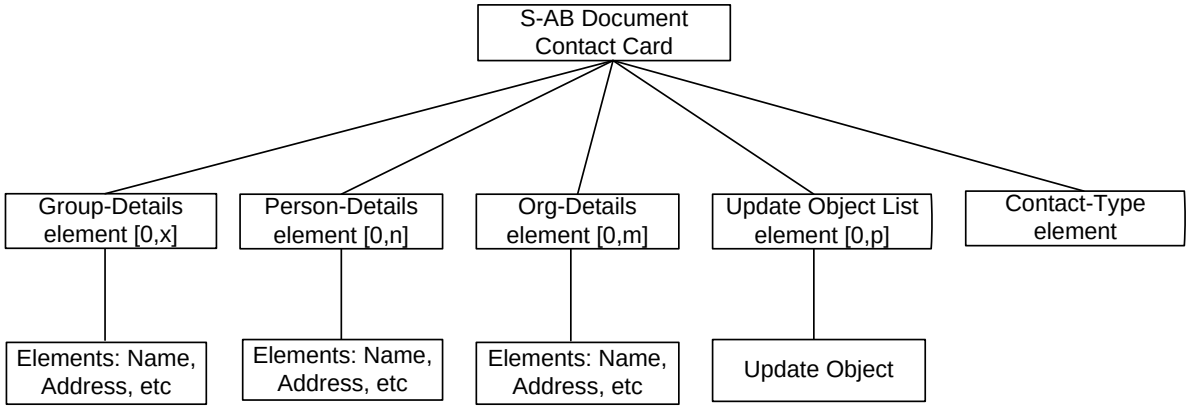

Figure 1 High Level S-AB Document Structure

The schema definition is provided in section 5.1.1.3 "*XML Schema*". The structure of the S-AB Document SHALL confirm to the structure of an S-PCC Document as defined in section 5.2.1.1 with the following clarifications and additions:

1) The <pcc> element MAY include one <update-object-list> element that MAY include one or more <update-object> elements that:
   a) SHALL include one "index" attribute;
   b) MAY include one "tcc-ref" attribute;
   c) MAY include one "iuo-ref" attribute;
   d) MAY include one "time-stamp" attribute;
   e) MAY include one "prio" attribute;
   f) MAY include one "approval" attribute;
   g) MAY include one "update-type" attribute;
   h) MAY include one "source-name" attribute;
   i) MAY include either one <contact-subscription-status> element, one <import-status> element, one <export-status> element; and,
   j) MAY include any other elements from another namespaces.

2) The <import-status> element:
   a) MAY include one “scheduled-interval” attribute; and,
   b) MAY include one “expiration-time” attribute.
3) The <export-status> element:
   a) MAY include one “scheduled-interval” attribute; and,
   b) MAY include one “expiration-time” attribute.
4) The <pcc> element MAY include a <contact-type> element that:
   a) SHALL include either one <s-cab> element, one <cab> element or any other element from another namespace;
   b) SHALL include one <contact-type-source> element; and;
   c) MAY include a <mutual-contact-status> element.

5.1.1.2 Application Unique ID

The AUID SHALL be “org.openmobilealliance.s-cab-address-book”.

5.1.1.3 XML Schema

The S-AB Document SHALL conform to the XML schema described in [XSD_cab_PCC] plus [XSD_**scab_extensions**].

5.1.1.4 Default Namespace

The S-AB Document default element namespace SHALL be "urn:oma:xml:cab:pcc" defined in [CAB XDM] section “*PCC Application Usage*”.

5.1.1.5 MIME Type

The MIME type for the S-AB Document SHALL be “application/vnd.oma.cab-pcc+xml” defined in [CAB XDM].

5.1.1.6 Validation Constraints

The validation constraints of the S-AB Document SHALL conform to those specified for the S-PCC Application Usage in section 5.2.1.6 “*Validation Constraints.*

5.1.1.7 Data Semantics

The data semantics constraints of the S-AB Document SHALL conform to those specified for the S-PCC Application Usage in section 5.2.1.7 “*Data Semantics*” with the following clarifications and additions:

1) The <contact-type> element SHALL be used to indicate which type of contact the Confirmed Contact Card is associated with.
   a) The <s-cab> child element SHALL be used to indicate that the contact is an S-CAB User and the <cab> child element that it is a CAB User.
   b) The <contact-type-source> element SHALL be used to indicate how the information was obtained and SHALL have one of the following string values:
      i) “presence” indicating that the contact type information was obtained by means of the Presence Enabler;
      ii) “pcc-subscription” indicating that the contact type information was obtained by means of a subscription of the contact’s PCC document;
      iii) “search” indicating that the contact type information was obtained by a search; or,

iv) "other" indicates that the contact type information was obtained by other means than the three above.

c) The <mutual-contact-status> element SHALL be used to indicate if the contact associated with a Confirmed Contact Card has included contact information about the S-CAB User in his S-AB Application Usage and vice versa. The element SHALL have one of the following string values:

i) "mutual" indicated that both the S-CAB User and the contact have included personal information about each other in their S-AB Application Usages;

ii) "added-by-contact" indicating that the contact has included information about the S-CAB User in his S-AB Application Usage, but the S-CAB User has not confirmed the contact in his/her Address Book. This value is used when the Confirmed Contact Card has been created due to a notification about that the contact has added personal information about the S-CAB User to his S-AB Application Usage; or,

iii) "unknown" indicating that the S-CAB User has included information about the contact in his S-AB Application Usage but information about if the contact has included personal information about S-CAB User in his S-AB Application Usage is not known.

2) The<contact-subscription-status> element SHALL be used to indicate the status of an ongoing contact subscription to an S-CAB User's or a CAB User's contact information. The value of the elements SHALL be one of the following:

a) "active" indicating that the value of the "Subscription-State" header of the SIP NOTIFY contains the value "active", meaning that the subscription has been accepted and has been authorized by the contact;

b) "pending" indicating that the value of the "Subscription-State" header of the SIP NOTIFY contains the value "pending", meaning that the subscription has been received, but that the information in the contact's S-PCC or PCC Access Permissions is insufficient to accept or deny the subscription;

c) "denied" indicating that the value of the "Subscription-State" header of the SIP NOTIFY contains the value "terminated" and the reason code is "rejected", or when the Contact Subscription Function receives a SIP "403 Forbidden" or "603 Decline" response, meaning that the subscription is not allowed by the S-CAB User's access permission or service provider policy and the subscription is not active;

d) "not-found" indicating that the value of the "Subscription-State" header of the SIP NOTIFY contains the value "terminated" and the reason code is "noresource", or when the Contact Subscription Function receives a "404 Not Found" error code, meaning that the contact could not be identified as an S-CAB User and the subscription is not active; or,

e) "other-error" indicating that the subscription is not active and the Contact Subscription Function determines that the non-availability is not transient, so the Contact Subscription Function does not retry.

Note: If the Contact Subscription Function receives a SIP NOTIFY request with the "Subscription-State" header value of "terminated", but determines the non-availability is of a transient nature (e.g., a reason code is equal to "deactivated" or "probation"), the Contact Subscription Function retries the subscription and updates <contact-subscription-status>, as appropriate.

5.1.1.8 Naming conventions

An S-AB Document of the type Confirmed Contact Card SHALL have a name with a suffix ".xml" e.g., "john-doe".xml.

An S-AB Document of the type Tracking Contact Card SHALL use the name of the associated S-AB Confirmed Contact Card and SHALL append the timestamp of the creation of the Tracking Contact Card. A Tracking Contact Card document SHALL have a name with the suffix ".tcc" e.g., "john-doe-20120829001243.tcc".

The S-AB Documents of type Confirmed Contact Cards SHOULD be named as follows:

A. Each contact's Confirmed Contact Card SHOUD use data value from the <display-name> element from a chosen <name-entry> element (e.g. first one), of one of the <name> elements (e.g. first one). Any special characters that are present in the <display-name> that are not allowed within a file name SHOULD be escaped;

B. In case of collisions, i.e. the same <display-name> value is already used for an existing contact's Confirmed Contact Card file name, the naming MAY be composed by concatenating the <display-name> value with several, or all, of the following elements under one of the <name-entry> element, separated by a "-":

   1. The first <given> element occurrence in the Contact Card as the given (first) name, and
   2. The first <middle> element occurrence in the Contact Card as the middle name, if one is present, and
   3. The first <family> element occurrence in the Contact Card as the family (last) name, and
   4. If needed, the first <gen-id> element occurrence in the Contact Card as the generation id, if one is present.

5.1.1.9 Global Documents

This Application Usage defines no Global Document.

5.1.1.10 Resource interdependencies

This Application Usage defines no resource interdependencies.

5.1.1.11 Authorization Policies

The authorization policies for an S-AB Document SHALL conform to the default authorization policy as described in [OMA XDM Core] section *"Authorization"*.

The S-AB Application Usage SHALL support an Access Permissions Document as described in [OMA XDM Core] sections "*Authorization*" and "*Access Permissions Document*" with the following clarifications:

1) Access to Tracking Contact Cards SHALL only be given to Principals that are allowed to perform any operation in the User Directory;
2) An <all-except> element included in a <doc-list> element included in a <conditions> element included in <directory-rule> element as described in[OMA XDM Core] section "*Access Permissions Document*" SHALL only grant permissions to S-AB Documents of the type Confirmed Contact Cards;
3) Access to the <update-object-list> element SHALL only be given to Principals that are allowed to modify a Confirmed Contact Card. I.e. the <update-object-list> element SHALL be removed by the XDMS from the Confirmed Contact Card document before it is sent to a Principal that only has access to retrieve the S-AB Document;
4) An <allow-any-operation-own-data> element included in an <actions> element as described in [OMA XDM Core] section "*Access Permissions Document*" SHALL give an authenticated Principal permissions to perform any operation on a Confirmed Contact Card containing an <addr-uri> element or a <tel-uri> element with a value that matches the identity of the authenticated Principal. Note: The <allow-any-operation-own-data> element can in this way be used to give all contacts permissions to handle their own contact information in another S-CAB User's address book;
5) An <external-list> element included in a <conditions> element as defined in [OMA XDM Core] section "*Access Permissions Document*" MAY contain a Node URI that selects a <list> element in the URI List Application Usage defined in [OMA XDM List]; and,
6) An <external-list> element included in a <conditions> element as defined in [OMA XDM Core] section "*Access Permissions Document*" MAY contain a URI that selects a User Directory in the S-AB Application Usage. The <external-list> element SHALL be considered TRUE if the value of any <addr-uri> element or any <tel-uri> element of the Confirmed Contact Cards in the User Directory matches the identity of the authenticated Principal.

5.1.1.12 Subscription to Changes

The S-AB Application Usage SHALL support subscription to changes as specified in [OMA XDM Core] section "*Subscriptions to changes in the XDM Resources*".

5.1.1.13 Search Capabilities

The S-AB Application Usage SHALL support Search Requests on the S-AB Documents and the following rules apply in addition to the procedures defined in [OMA XDM Core]:

1) support a collection "org.openmobilealliance.s-cab-address-book/users/[XUI]/" where [XUI] represents the XUI of an S-CAB User, subject to Access Permissions as specified in section 5.1.1.11 "*Authorization Policies*". The collection SHALL include all S-AB Documents of the type Confirmed Contact Cards in the User Directory; and,
2) The basic XQuery expression [OMA XDM Core] supported by the S-AB Application Usage SHALL be as follows:

```
xquery version "1.0";
declare default element namespace "urn:oma:xml:cab:pcc".
```

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].

Note: Searching for Tracking Contact Cards can be done by searching the collection of Confirmed Contact Cards with a "tcc-ref" attribute as search criteria and as search result, request the value of the attribute.

5.1.1.14 XDM Preferences Document

The AB Application Usage SHALL support XDM Preferences Document as described in [OMA XDM Core] section "*XDM Preferences Document*" if it supports History Information XDM Documents as described in section 5.1.1.15, or Forwarding as described in section 5.2.1.16.

5.1.1.15 History Information Document

The S-AB Application Usage MAY support a Modification History Documents is described in [OMA XDM Core], section "*Modification History Information Document*" for each S-AB Document of the type Confirmed Contact Card.

The S-AB Application Usage SHALL support a Request History Information Document as described in [OMA XDM Core], section "*Request History Information Document*".

5.1.1.16 Forwarding

The S-AB Application Usage SHALL support forwarding of S-AB Documents of the type Confirmed Contact Card as described, section 6.2.6.2 "*XDM Resource Forwarding Operations*"of [OMA XDM Core] with the following clarifications:

1) The XDMS SHALL send a Remote Forwarding XDCP requests targeting a non S-CAB User to the S-CAB Server instead of sending it to the XDM Aggregation Proxy;
2) The XDMS SHALL send a Forward Delivery Report XDCP request targeting a non S-CAB User to the S-CAB Server instead of sending it to the XDM Aggregation Proxy; and,
3) The XDMS SHALL on the receiving side, if the <note> element of an XDCP Forwarding request or an XDCP Remote Forwarding request contains the value "contact-suggestion", ignore the <actions> element in the <forward-pref> element in the XDM Preferences Document and always notify the S-CAB Client by applying the procedure described for a <confirmed> element of an <actions> element as defined in [OMA XDM Core] sections "*Forward-Prefs Elements*" and "*Notifying the Recipients about the Status of the Received Forward XDCP Request*".

Note: How the S-CAB XDMS determine how the remote User is a non S-CAB User is outside the scope of this specification.

The S-AB Application Usage SHALL support forwarding of one or more S-AB Documents.

5.1.1.17 Restore

The S-AB Application Usage SHALL support restore of an S-AB Document, as described in [OMA XDM Core] section 6.2.6.5 "*XDM Restore*" with the following clarifications:

1) Restore of a Tracking Contact Card SHALL NOT be supported; and,

2) At restore of a Confirmed Contact Card document, the XDMS SHALL remove the <update-object-list> element from the restored document and delete any associated Tracking Contact Card(s).

5.1.1.18 Document Reference

The AB Application Usage MAY support Document Reference of an S-AB document as described in [OMA XDM Core] section 6.2.6.1 "*Document Reference*".

5.1.1.19 Differential Read and Write

The S-AB Application Usage SHOULD support Differential Read as described in [OMA XDM Core] section "*Differential Read"*.

The S-AB Application Usage SHOULDsupport Differential Write as described in [OMA XDM Core] section "*Differential Write"*.

5.1.1.20 Multiple Document Deletion

The S-AB Application Usage SHALL support multiple document deletion of S-AB Documents, as described in [OMA XDM Core] section "*Handling of XDCP Operations"* subsection "*Delete*".

5.2 S-PCC

5.2.1 S-PCC Application Usage

The S-PCC Application Usage represents a network repository for an S-CAB User's personal contact card information. The S-PCC Application Usage SHALL contain one or more Confirmed Contact Cards and zero or more Tracking Contact Cards. A Confirmed Contact Card and a Tracking Contact Card both of the type S-PCC Document specified in the following sub sections.

5.2.1.1 Structure

An S- PCC Document SHALL conform to the structure described in this section. The schema definition is provided in section 5.2.1.3.

All elements of PCC Document MAY support an 'xml:lang' attribute as specified in [W3C-XML], sub-clause 2.12 "*Language Identification*" and [RFC5645], [RFC5646], unless specified otherwise in the structure below. The language associated by 'xml:lang' attribute to a parent element applies to all its child elements unless overridden with another 'xml:lang' attribute to a child elements.

Each detail element (<person-details>, <org-details>, <group-details>) represents the information pertinent to a known entity.

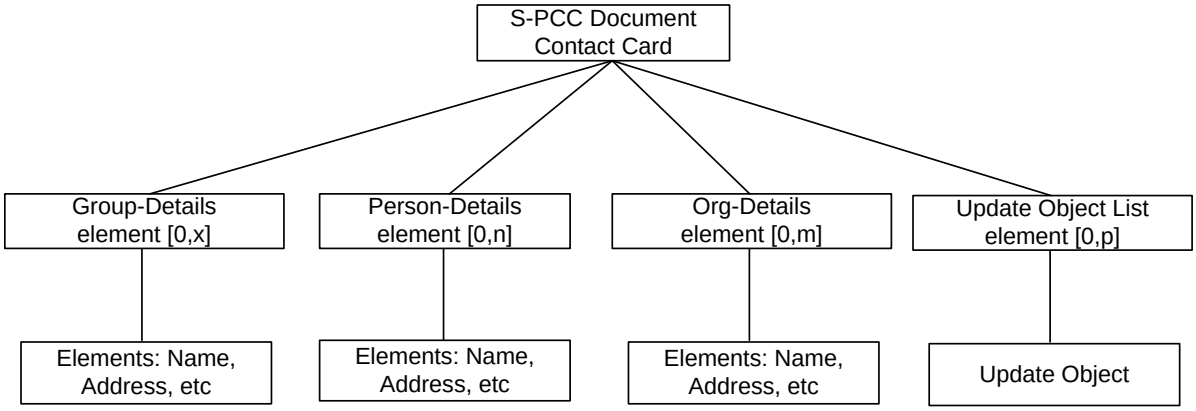

Figure 2 High Level S-PCC Document Structure

The S-PCC Document SHALL include one root element <pcc> which SHALL have a 'pcc-type' attribute. The <pcc> element:

A. SHALL be populated with <person-details>, <org-details>, and/or <group-details> elements in accordance with sub-clause 5.2.1.7 "*Data Semantics*" for the 'pcc-type' attribute; and

B. MAY include one <update-object-list> element, which MAY include one or more <update-object> elements that:

   a) SHALL include one "index" attribute;

   b) MAY include one "tcc-ref" attribute;

   c) MAY include one "iuo-ref" attribute;

   d) MAY include one "time-stamp" attribute;

   e) MAY one "prio" attribute;

   f) MAY include one "approval" attribute;

   g) MAY include one "update-type" attribute;

   h) MAY include one "source-name" attribute;

   i) MAY include either one <import-status> element, one <export-status> element or one <tracking-status> element; and,

   j) MAY any other elements from another namespace.

1) The <import-status> element:
   a) MAY include one "scheduled-interval" attribute; and,

   b) MAY include one "expiration-time" attribute.

2) The <export-status> element:
   a) MAY include one "scheduled-interval" attribute; and

   b) MAY include one "expiration-time" attribute.

The structure of the <person-details>, <org-details>, and <group-details> elements are as follows:

1. The <person-details> element SHALL have an 'index' attribute. The structure of the element is as follows:

a) SHALL include one or more <name> element(s), each containing one or more <name-entry> elements and an "index" attribute. Each <name-entry> element contains a set of child elements, MAY include 'pref', and/or 'name-type' attribute(s) and SHALL have an 'index' attribute. The <name-entry> element contains one or more of the elements below as follows:

   i. zero or more <title> elements, indicating the title (e.g., Mr., Ms., Miss.). This element SHALL have a 'display-order' attribute, which provides the order of the title elements. Each <title> element MAY have:

      i. a <phonetic> element, indicating the phonetic spelling (e.g., pinyin) of the title. This element SHALL have an 'xml:lang' attribute, which SHALL identify the appropriate phonetic;

   ii. zero or more <given> elements, indicating the given name. This element SHALL have a 'display-order' attribute, which provides the order of the given elements. Each <given> element MAY have:

      i. a <phonetic> element, indicating the phonetic spelling (e.g., pinyin) of the given name. This element SHALL have an 'xml:lang' attribute, which SHALL identify the appropriate phonetic;

   iii. zero or more <middle> elements, indicating the middle name. This element SHALL have a 'display-order' attribute, which provides the order of the title elements. Each <middle> element MAY have:

i. a <phonetic> element, indicating the phonetic spelling (e.g., pinyin) of the middle name. This element SHALL have an 'xml:lang' attribute, which SHALL identify the appropriate phonetic;

iv. zero or more <family> elements, indicating the family name. This element SHALL have an 'display-order' attribute, which provides the order of the family elements. Each <family> element MAY have:

i. a <phonetic> element, indicating the phonetic spelling (e.g., pinyin) of the family name. This element SHALL have an 'xml:lang' attribute, which SHALL identify the appropriate phonetic;

v. zero or more or more <gen-id> elements, indicating the generation identifier (e.g., Jr., Sr., III). This element SHALL have a 'display-order' attribute, which provides the order of the generation identifiers. Each <gen-id> element MAY have:

i. a <phonetic> element, indicating the phonetic spelling (e.g., pinyin) of the generation identifier. This element SHALL have an 'xml:lang' attribute, which SHALL identify the appropriate phonetic;

vi. zero or more <degree> elements, indicating the degree/license (e.g., PhD, MD, RN, CPA). This element SHALL have an 'display-order' attribute, which provides the order of the degrees/licenses elements. Each <degree> element MAY have:

i. a <phonetic> element, indicating the phonetic spelling (e.g., pinyin) of the degree name. This element SHALL have an 'xml:lang' attribute, which SHALL identify the appropriate phonetic;

vii. one <display-name> element, indicating the display name associated with this name.

b) MAY include an <address> element containing one or more <address-entry> elements, each representing physical address. The <address-entry> element SHALL have an 'index', and MAY contain a 'pref' and an 'addr-type' attribute. Each <address-entry> element MAY contain:

i. a <location> element, indicating location information related to this address. For structure of <location> element, see structure of the <location> element (below);

ii. a <label> element, containing a free-text description of the address;

Each <address-entry> element SHALL also contain one of the following:

i. an <addr-string> element, containing a free-text representation of the address in one String;

ii. an <addr-details> structure, that MAY contain following elements:

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…) and sub-region in which the address is located. The <region> element:

(a) SHALL contain a <region-name> element which SHALL have a 'region-type' attribute; and

(b) MAY contain a <sub-region> element that SHALL have a 'sub-region-type' attribute.

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

(a) SHALL contain a <locality-name> element that SHALL have a 'locality-type' attribute that indicates the type of the locality (e.g. town, suburb) and

(b) MAY have a <sub-locality> element (e.g., municipality, village), if needed, that SHALL have a 'sub-locality-type' attribute.

4) a <street> element, which represents street name and additional detailed information. The <street> element :

(a) SHALL contain a <str-name> element, indicating the street name

(b) SHALL contain a <str-number> element, indicating the street number

(c) MAY contain an <intersection> element, indicating additional information related to the street and:

(i) SHALL contain an <int-name> element, indicating the intersecting street name

(ii) MAY contain an <int-number> element, indicating the intersecting street number.

5) a <post-code> element, which represents the code for postal delivery (e.g., ZIP code) for this address. The <post-code> element:

(a) SHALL contain a <post-code-main> element

(b) MAY contain a <sub-post-code> element

6) a <postal-delivery-point> element, which represents delivery point information for this address (e.g., PO Box). The <postal-delivery-point> element SHALL contain:

(a) one or more <postal-delivery-point-name> elements, each SHALL have an 'index' and MAY have a 'pref' attribute.

7) a <post-office> element, which represents delivery point and pickup information for this address (e.g., a post office containing post office boxes or personal mail boxes). The <post-office> element contains the following

(a) one or more <postal-office-name> elements, each SHALL have an 'index' and MAY have a 'pref' attribute.

8) a <rural-delivery-point> element that represents delivery point information for this address (e.g., name of a farm or rural area). The <rural-delivery-point> element contains the following

(a) one or more <rural-delivery-name> elements, each SHALL have an 'index' and MAY have a 'pref' attribute.

9) One or more <extended-address> elements, which represents additional addressing information, and SHALL have an 'index' attribute. The element contains the following:

(a) A <premises> element, which SHALL have a 'premises-type' attribute and indicates the subdivision of the locality in which this address is located (e.g. apartment number, floor, neighbourhood, …). The <premises> element SHALL contain at least one of the following elements:

(i) a <premises-name> element,

(ii) a <premises-number> element,

(iii) and it MAY contain a <sub-premises> element. The <sub-premises> element SHALL have a 'sub-premises-type' attribute and it MAY contain if needed a sequence of <sub-premises-name> and <sub-premises-number> elements.

c) MAY include a <location> element that MAY include:

i. a <location-label> element, describing the location information using free text.

ii. a <latitude> element, indicating the latitude. This element SHALL contain the following:

1) a <degrees-measure> element

2) a <minutes-measure> element

3) a <seconds-measure> element

4) a <lat-sign> element

iii. a <longitude> element, indicating the longitude. The element SHALL contain the following:

1) a <degrees-measure> element

2) a <minutes-measure> element

3) a <seconds-measure> element

4) a <long-sign> element

iv. an <altitude> element, indicating the altitude of the location. The element SHALL contain:

1) a <meters-measure> element

2) an <alt-sign>element

v. a <time-zone> element contains the time zone information associated with the location. This element MAY have the following child elements:

1) a <tz-label> element that contains the description of the time zone

2) a <utc-offset> element representing the time offset from UTC

3) a <tz-url> element pointing to the location where the detailed time zone information is stored

d) SHALL include a <comm-addr> element containing communication addresses, with at least one of the <addr-uri> or <tel> elements that corresponds to the CAB XUI.

The <comm-addr> element MAY include the following child elements:

i. zero or more <uri-entry> elements, each of which SHALL have an 'addr-uri-type' and 'index' attributes, MAY have 'pref' attributes. Each <uri-entry> element:

1) SHALL contain a <addr-uri> element containing a URI of a communication means of the CAB User. If the <addr-uri> element is a 'SIP URI' and it is used as an XUI, then the element SHALL have an 'xui-type' attribute.

2) MAY contain a <label> element that provides text based description of the communication address URI.

ii. zero or more <tel> elements, each indicating one telephone number associated with the CAB User. If one of the <tel> elements is used as an XUI, then that element SHALL have an 'xui-type' attribute. Each <tel> element SHALL have 'index' and 'tel-type' attributes, and MAY have a 'pref' attribute. The <tel> element:

1) SHALL contain a <tel-nb> element,

2) MAY contain an <extension> element that represents a PBX extension.

3) MAY have a <label> element that provides descriptive information of the communication address.

The <tel-nb> element SHALL contain one of the following structures:

1) a <tel-str> element, containing the telephone number in String format,

2) a <tel-uri> element containing a tel URI formatted telephone number,

3) a <E.164> element containing a parsed structure:

(a) MAY contain an <intl-prefix-symbols> element, indicating a string that is an international prefix symbol,

(b) MAY contain a <cc> element, indicating the country code,

(c) MAY contain a <ndc>, indicating the national destination code or area code,

(d) SHALL contain a <sn>, indicating the subscriber number,

e) MAY include one <birth> element. The element SHALL contain at least one of the following:

i. MAY have an <birth-date> element, indicating the date of birth. Each <birth-date> element contains:

1) zero or one <date> element representing Gregorian type calendar, and

2) zero or more <non-greg-date> element. The <non-greg-date> element represents any calendar type that is not Gregorian and SHALL contain a 'cal-type' attribute that indicates the calendar type applied to each <birth-date> element instance (e.g., Bengali, Chinese, etc) and an 'index' attribute.

ii. one or more <place> elements, each containing the user's birthplace in different languages or names. Each <place> element SHALL have an 'index' attribute.

f) MAY include an <anniversary-list> element containing one or more child <anniversary-entry> elements of dates related to the user, such as marriage, etc. Each <anniversary-entry> element SHALL have an 'index' attribute. Each <anniversary-entry> element:

   i. SHALL have an <anniversary-date> element, indicating the date of the anniversary. Each <anniversary-date> element contains

      1) zero or one <date> element representing Gregorian type calendar, and

      2) zero or more <non-greg-date> element. The <non-greg-date> element represents any calendar type that is not Gregorian and SHALL contain a 'cal-type' attribute that indicates the calendar type applied to each <anniversary-date> element instance (e.g., Bengali, Chinese, etc) and an 'index' attribute.

   ii. MAY have a <label> element, indicating the anniversary name.

g) MAY include one <gender> element, containing the gender of the CAB user.

h) MAY include a <language-list> element containing one or more <language-entry> elements.

   i. Each <language-entry> element MAY have a 'language-proficiency-type' and 'language-fluency-type' attributes, it SHALL have a 'index' attribute. Each <language-entry> element indicates a description of the language;

i) MAY include a <media-list> element containing one or more <media-entry> elements.

   i. Each <media-entry> element SHALL have a 'media-content' attribute, MAY have a 'media-type' attribute, SHALL have an 'index' attribute, MAY have a 'pref' attribute.

      Each <media-entry> element:

      1) SHALL contain a <media> element that contains either the media content, or a URI that references the media content.

      2) MAY contain a <label> element containing a description of the media.

j) MAY include a <category-list> element of one or more <category-entry> elements.

   i. Each <category-entry> element contains a description of the category, SHALL have an 'index' attribute.

k) MAY include a <web-resources> element that contains one or more <web-entry> elements.

   i. Each <web-entry> element SHALL have an 'index' attribute. This element:

      1) SHALL contain a <url> element with the Uniform Resource Locator associated to the user.

      2) MAY contain a <label> element, containing the name assigned to the uniform resource locator.

l) MAY include a <key-list> element that includes one or more <key-entry> elements. Each <key-entry> element SHALL have 'key-type' and 'index' attributes. Each <key-entry>:

   i. SHALL contain a <key> element with a public key or authentication certificate,

   ii. MAY contain a <label> element containing the name assigned to the specific public key or authentication certificate.

m) MAY include a <service-list> element, which includes:

   i. one or more <service-entry> elements which SHALL have a 'index' attribute. Each <service-entry> element MAY contain:

      1) a <label> element indicating a free-text description of the service,

      2) a <alias> element, indicating the alias identifier string used for a service,

      3) a <url> element, indicating the URL pointing to the service resource.

n) MAY include an <expertise-list> element containing a listing of the areas of expertise, which include :

   i. one or more <expertise-entry> elements and each element MAY have a 'e-level' attribute that ranks the multiple <expertise-entry> elements. The element SHALL have an 'index' attribute.

o) MAY include a <hobby-list> element containing one or more <hobby-entry> elements.

   i. Each <hobby-entry> element SHALL have an 'index' attribute, and MAY have a 'h-level' attribute. Each of these elements contains a string based text description of the hobby.

p) MAY include an <interests-list> element containing one or more <interest-entry> elements.

   i. Each <interest> element SHALL have an 'index' attribute, and MAY have an 'i-level' attribute. Each of these elements contains a string based text description of the current interests.

q) MAY include a <career-history> element, containing one or more <history-entry> elements that SHALL have an 'index' attribute. Each <history-entry> element MAY have a 'history-type' that in description of a qualification, school, certification, occupation, license, etc:

   i. SHALL include a <history-description> element indicating a free-text description of the career history

   ii. MAY contain a <start-date> element that MAY have a 'cal-type' attribute. This element describes the start of the history entry

   iii. MAY contain a <end-date> element that MAY have a 'cal-type' attribute. This element describes the end date of the history entry.

r) MAY include one < note> element, containing free-style information stored by the CAB.

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

t) MAY include a <service-provider-specific-list> element**s** containing free style information regarding to the CAB user defined by the operator. It SHALL contain one or more <sp-specific-entry> elements that SHALL have an 'index' attribute. Each <sp-specific-entry> element:

   i. SHALL include <sp-specific-label> element to describe the nature of this information.

   ii. SHALL include <sp-data> element that contains any information defined by the Service Provider.

u) MAY include a <organization-list> element describing the list of organizations associated with this <person-details>. It SHALL include one or more <organization-entry> elements that SHALL have an 'index' attribute, and MAY include a 'pref' attribute. Each <organization-entry> element:

   i. SHALL include a <display-name> element, containing the display name of the organization

   ii. MAY include an <entity> element, indicating the official company or an organization name.

   iii. MAY include a <unit> element, indicating a subdivision of the organization entity.

   iv. MAY include a <position> element, indicating a position within the organization entity.

   v. MAY include a <role> element, indicating a role of the member within the organization entity

   vi. MAY include a <url> element, indicating the URL representing the organization.

v) MAY include a <group-list> element describing the list of groups associated with this <person-details>. It SHALL include one or more <group-entry> elements that SHALL have an 'index' attribute, and MAY include a 'pref' attribute. Each <group-entry> element:

   i. SHALL include a <display-name> element, containing the display name of the group

   ii. MAY include an <entity> element, indicating the official group name.

   iii. MAY include a <url> element, indicating the URL representing the group.

2. The <org-details> element represents organization details and SHALL have an 'index' attribute. The structure of the element is as follows:

a) SHALL include one or more <org-name> element(s), each containing child elements. The <org-name> element SHALL include an 'index' attribute and MAY include 'pref', and/or 'org-name-type' attribute(s). The <org-name> element SHALL include at least one of the following elements:

   i. a <display-name> element, containing the display name.

   ii. an <entity> element, indicating a company or an organization name.

   iii. a <unit> element, indicating a subdivision of the organization entity.

b) MAY include an <org-members-list> element that includes one or more <org-member> elements, each containing person related information. The <org-member> element SHALL have an 'index' attribute.

   Each <org-member> element:

   i. SHALL contain a <member-details-url> element, which is a URL identifying person related information. The < member-details-url> element MAY have an attribute "mime-type". If the reference is of type <person-details> element or of type <org-details> element, the attribute value SHALL be "application/vnd.oma.cab-pcc+xml".

   ii. MAY contain a <position> element, indicating a position of the member within the organization entity.

   iii. MAY contain a <role> element, indicating a role of the member within the organization entity.

c) MAY include an <org-directory> element that indicates the URI of the organization directory information.

d) MAY include a <comm-addr> element containing communication addresses of the organization (see <person-details> element as specified above for the attributes and internal structure of the <comm-addr> element).

e) MAY include a <media-list> element containing media that is related to the organization (see <person-details> element specified above for the attributes and internal structure of <media-list> element).

f) MAY include a <web-resources> element containing web information related to the organization (see <person-details> element specified above for the attributes and internal structure of the <web-resources> element).

g) MAY include a <key-list> element containing public key or authentication certificate information related to the organization (see <person-details> element as specified above for the attributes and internal structure of the <key-list> element).

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

3. The <group-details> element SHALL have an 'index' attribute. The structure of the element is as follows:

a) SHALL include one or more <group-name> elements, each containing child elements. The <group-name> element SHALL have an 'index' attribute and MAY include a 'pref' attribute.

   The <group-name> element SHALL include at least one of the following elements:

   i. a <display-name> element, containing the display name.

   ii. an <entity> element, indicating a description of the group

b) MAY include a <group-members-list> element containing one or more <group-member> elements, each of which identifies person or organization related information. The <group-member> SHALL have an 'index' attribute.

   Each <group-member> element:

   i. SHALL contain <member-details-url> element, which is a URL identifying person or organization related information. The <member-details-url> element MAY have an attribute "mime-type". If the reference is of type <person-details> element or of type <org-details> element, the attribute value SHALL be "application/vnd.oma.cab-pcc+xml".

c) MAY include a <group-uri> element that indicates the URI to the group data.

d) MAY include a <comm-addr> element containing communication addresses related to the group (see <person-details> element as specified above for the attributes and internal structure of the <comm-addr> element).

e) MAY include a <media-list> element related to the group (see <person-details> element as specified above for the attributes and internal structure of the <media-list> element).

f) MAY include a <web-resources> element related to the group (see <person-details> element as specified above for the attributes and internal structure of the <web-resources> element).

g) MAY include a <key-list> element related to the group (see <person-details> element as specified above for the attributes and internal structure of the <key-list> element).

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

Note: The group-details element can be used to implement a list of contacts.

4. Any other elements from any other namespaces for the purpose of extensibility.

The PCC document MAY include a 'view-type' attribute on any element under the root <pcc> element which is used to associate the corresponding element of the PCC to one or more Contact Views. The view type associated by 'view-type' attribute to a parent element applies to all its child elements (by inheritance) unless overridden explicitly with another 'view-type' attribute to a child element, in which case the 'view-type' attribute assigned to the child takes precedence. This association can further be used to filter a subset of PCC data to establish Contact Views. The resulting filtered document SHALL follow the PCC schema and semantics.

See Appendix B "Contact Views" for informative examples describing the realization of Contact Views using filters and 'view-type' attribute.

5.2.1.2 Application Unique ID

The AUID SHALL be "org.openmobilealliance.cab-pcc" (defined in [CAB XDM]).

5.2.1.3 XML Schema

The S-PCC Document SHALL conform to the XML schema described in [XSD_cab_PCC] and in [XSD_scab_extensions].

5.2.1.4 Default Namespace

The S-PCC Document default element namespace is "urn:oma:xml:cab:pcc" (defined in [CAB XDM]).

5.2.1.5 MIME Type

The MIME type for the S-PCC Document SHALL be "application/vnd.oma.cab-pcc+xml" (defined in [CAB XDM]).

5.2.1.6 Validation Constraints

The child elements of the <pcc> element are the person-details, organization-details, and group-details elements, and these can occur zero or an unbounded number of times.

The cardinality of the person-details, org-details, and group-details elements behave in highly similar ways, as follows:

- The <name> child elements of the person-details element SHALL occur one or more times. The <comm-addr> child elements of the person-details element SHALL occur one time The other child elements of the person-details elements occur zero or one time. If these constraints are violated, an HTTP "409 Conflict" response SHALL be returned with the error condition identified by the <constraint-failure> element. If included, the 'phrase' attribute of this element SHOULD be set to "Cardinality of this element is exceeded", and the name of the element SHALL be included, as well.
- The <org-name> and <comm.-addr> child elements of the org-details elements SHALL occur one time. The other child elements of the org-details elements occur zero or one time. If these constraints are violated, an HTTP "409 Conflict" response SHALL be returned with the error condition identified by the <constraint-failure> element. If included, the 'phrase' attribute of this element SHOULD be set to "Cardinality of this element is exceeded", and the name of the element SHALL be included, as well.
- The <group-name> and <comm.-addr> child elements of the group-details elements SHALL occur one time. The other child elements of the group-details elements occur zero or one time. If these constraints are violated, an HTTP "409 Conflict" response SHALL be returned with the error condition identified by the <constraint-

failure> element. If included, the 'phrase' attribute of this element SHOULD be set to "Cardinality of this element is exceeded", and the name of the element SHALL be included, as well.

In the <name> element, the <display-name> element occurs one times. The other elements can occur zero or an unbounded number of times. If this constraint is violated, an HTTP "409 Conflict" response SHALL be returned with the error condition identified by the <constraint-failure> element. If included, the 'phrase' attribute of this element SHOULD be set to "Cardinality of this element is exceeded".

In the <address-entry> element, the <label>, <location>, and <addr-details> elements can appear zero or one time. If this constraint is violated, an HTTP "409 Conflict" response SHALL be returned with the error condition identified by the <constraint-failure> element. If included, the 'phrase' attribute of this element SHOULD be set to "Cardinality of this element is exceeded", and the name of the element SHALL be included, as well.

In the <org-name> element, the <display-name>, <unit>, and <entity> child elements can appear zero or one time. If this constraint is violated, an HTTP "409 Conflict" response SHALL be returned with the error condition identified by the <constraint-failure> element. If included, the 'phrase' attribute of this element SHOULD be set to "Cardinality of this element is exceeded", and the name of the element SHALL be included, as well.

In the <group-name> element, the <display-name> and <entity> child elements can appear zero or one time. If this constraint is violated, an HTTP "409 Conflict" response SHALL be returned with the error condition identified by the <constraint-failure> element. If included, the 'phrase' attribute of this element SHOULD be set to "Cardinality of this element is exceeded", and the name of the element SHALL be included, as well.

The <group-uri> element is mutually exclusive with the <group-members-list> element.

The <org-directory> is mutually exclusive with the <org-members-list> element.

The PCC Application Usage in the CAB XDMS SHALL ensure the uniqueness of the 'index' attribute as defined in the sub-clase 5.2.1.7 "*Data Semantics*". In case of collisions, the CAB XDMS (PCC Application Usage) SHALL send back an error to the CAB Client as specified in [OMA XDM Core] sub-clause 6.2.1 "*Document Management*".

The <comm-addr> element SHALL contain only one element with the attribute 'xui-type' set to "CAB". The value of the 'xui-type' attribute to "CAB" SHALL only be set by the PCC Application Usage in the CAB XDMS.

The 'xui-type' attribute value SHALL be set to "CAB", if the <addr-uri> or the <tel> element value corresponds to the XUI used in the XCAP URI of the specific CAB User's PCC in the CAB Users Tree. The value "CAB" assigned to the 'xui-type' attribute SHALL appear only once within the <comm-addr>, whether it is assigned to an <addr-uri> or a <tel> element.

5.2.1.7 Data Semantics

The 'pcc type' attribute value is set to one of the following enumeration value: "individual", "organization" and "group".

If the 'pcc-type' attribute is set to:

a. "individual" then the PCC SHALL have at least one <person-details> element and MAY have zero or more <org-details> and/or <group-details>.

b. "organization" then the PCC SHALL have one <org-details> element and MAY have zero or more <person-details> elements and zero or more <group-details>.

c. "group" then the PCC SHALL have one <group-details> element and MAY have zero or more <person-details> elements and zero or more <org-details>.

The <title>, <given>, <family>, <middle>, <gen-id>, <degree>, <phonetic>, and <display-name> element values are of type "String".

The 'name-type' attribute is used to indicate the type of name, and SHALL include one of the following enumerations: "Alias", "LegalName", "KnownAs", "MaidenName", "FormerName", "NameAtBirth", "OfficialName" and "Other".

The 'display-order' attribute value is of type integer and MUST be unique. The value "1" is first.

The 'addr-type' attribute SHALL be one of the following enumerations: "Home", "Work", "Business", "Travel" and "Other".

The <addr-string> element value is of type “String”.

The <country> element SHALL be used to indicate the country using a two-letter “Alpha-2” format, as specified in [ISO3166-1], The <country> element value is of type “String”.

The <tz-label> element value is of type “String”;

The <degrees-measure>, <seconds-measure> and <minutes-measure> element values are of type integers;

The <lat-sign> and <long-sign> element values are of type “String” and values are restricted as follows:

1) <lat-sign> element SHALL take one of the following enumerations: “N”, “S”.
2) <long-sign> element SHALL take one of the following enumerations: “W”, “E”.
3) <alt-sign> element SHALL take one of the following enumerations: “+” indicating above sea level and “-” indicating under sea level.

The <meters-measure> element value is of type “Float” and is specified in meters.

The <utc-offset> element value is of type “Integer”;

The <tz-url> element value is of type “String”, its value is a single URL;

The <region-name> element is of type “String”.

The ‘region-type’ can take the values: "City", "State", "Territory", "Province" or “Other”.

The ‘sub-region-type’ can take the values: “County”, “District”, “Province”, “Region” and “Other”.

The <sub-region> element value is of type “String”.

The <locality> element value is of type “String”.

The ‘locality-type’ attribute SHALL be one of the following enumeration: “District”, “Municipality”, “PostTown”, “Place”, “Suburb”, “Town”, “City”, “Area”, “Zone” or “Other”;

The <sub-locality> element value is of type “String”.

The ‘sub-locality-type’ attribute which can take the values of : “District”, “Municipality”, “Suburb”, “Town”, “City”, “Village”, or “Other”;

The <str-name> element value is of type “String”.

The <str-number> element value is of type “String”.

The <int-name> element value is of type “String”.

The <int-number> element value is of type “String”.

The <post-code-main> element value is of type “String”.

The <sub-post-code> element value is of type “String”

The <postal-delivery-name> element value is of type “String”.

The <postal-office-name> element value is of type “String”.

The <rural-delivery-name> element value is of type “String”.

The <premises-name>, <premises-number>, <sub-premises-number> and <sub-premises-name> element values are of type “String”.

The ‘premises-type’ attribute SHALL take one of the following enumerations: “Building”, “Floor”, “Apartment-complex”, “Farm” and “Other”.

The "sub-premises-type" attribute SHALL be one of the following enumerations: “Room”, “Suite”, “Apartment”, “Apartment-building”, “Shop”, “Office”, “Unit” and “Other”;

The ‘addr-uri-type’ attribute is of type “String” and SHALL include one or more of the following enumerated values, separated by a white space: “Work”, “Home”, “Fax”, “Mobile”, “Fixed”, “Email”, “Pager”, “SIP-URI”, “IM”, “Pres-URI”, “Video” and “Other”.

The ‘tel-type’ attribute is of type “String” and SHALL include one or more of the following enumerated values, separated by a white space: “Work”, “Home”, “Fax”, “Mobile”, “Fixed”, “Email”, “Pager”, “Video” and “Other”.

The ‘xui-type’ attribute is of type “String” and it SHALL take the “CAB” value when it is associated with CAB.

The <addr-uri> element is of type “anyURI”. The syntax of the URI is based on a defining standard, as follows:

1) SIP URI as defined in [RFC3261];
2) IM URI as defined in [RFC3860];
3) Pres URI as defined in [RFC3859];
4) Mailto URI as defined in [RFC2368]
5) HTTP URI as defined in [RFC2616].

The <tel-str> element is of type “String”.

The <tel-uri> is of type “anyURI” and SHALL be defined as specified in [RFC3966];

The <E.164> element is a telephone number in the format defined in [ITU-E.164].

The <cc>, <ndc> and <sn> elements contain numeric string data.

The <intl-prefix-symbols> element contains string data.

The <extension> element value is of type “String”;

The <date> element value is of type dateTime.

The <non-greg-date> element value is of type “String”.

The <place> element value is of type “String”.

The <label> element value is of type “String”.

The ‘cal-type’ attribute is of type “String” and indicates the calendar type. In case the calendar type is included in the following list, the attribute SHOULD take a value from the following enumeration list: “Akan”, “Assyrian”, “Armenian”, “Aztec”, “Babylonian”, “Bahâ’î”, “Bengali”, “Berber”, “Bikram Savat”, “Buddhist”, “Burmese”, “Byzantine”, “Celtic”, “Chinese”, “Coptic”, “Egyptian”, “Ethiopian”, “French Republican”, “Germanic”, “Hebrew”, “Hellenic”, “Hindu”, “Igbo”, “Indian”, “Iranian”, “Irish”, “Islamic”, “Japanese”, “Javanese”, “Juche”, “Julian”, “Korean”, “Kurdish”, “Lithuanian”, “Malayalam”, “Maya”, “Nanakshahi”, “Nepal Sambat”, “Soviet”, “Tamil”, “Tibetan”, “Thai”, “Vietnamese”, “Xhosa”, “Yoruba” and “Other”.

Otherwise, the attribute value is set as the name of calendar type in a text form.

The <gender> element value is of type “integer”.

1) “0” indicates “not known”.
2) “1” indicates “male”

3) "2" indicates "female".
4) "3" indicates "other".
5) "9" indicates "not applicable"

The <language> element value is of type "String".

The 'language-proficiency-type' attribute SHALL be one of the following enumerations: "read-only" "speak" "read-write"

The 'language-fluency-type' attribute SHALL be one of the following enumerations: "beginner", "average", or "fluent".

The 'media-content' attribute SHALL be one of the following enumerations: "Video", "Photo", "Sound", "Logo" or "Other".

The <media> element contains either a media content of type "base64Binary" or a URI of type "anyURI".

The 'media-type' attribute is of type String and SHALL follow the types specified in [RFC4288], respectfully.

The <category-entry> element value is of type "String".

The <url> element value is of type "anyURI".

The <key> element value is of type either "base64Binary" or "anyURI".

The <alias> element value is of type "String".

The <expertise-entry> value is of type "String". The 'e-level' attribute rates the <expertise> level among multiple occurrences and SHALL be one of the following enumerations: "Beginner", "Average" or "Expert".

The <hobby-entry> element value is of type "String". The 'h-level' attribute value SHALL be one of the following enumerations: "High", "Medium" or "Low".

The <interest> element value is of type "String". The 'i-level' attribute value ranks the <interest> among multiple occurrences and SHALL be one of the following enumerations: "High", "Medium" or "Low".

The <history-description> element value is of type "String".

The 'history-type' attribute SHALL be of the following enumerations: "School", "Occupation", "Certification", "License", "Qualification", or "Other".

The <start-date> element value is of type "dateTime".

The <end-date> element value is of type "dateTime".

The <note> element value is of type "String".

The <sp-specific-label> element value is type of "String".

The <sp-data> element value is type of "base64Binary".

The 'org-name-type' attribute is used to indicate the type of organization name and SHALL include one of the following enumerations: "LegalName", "FormerName" and "OfficialName".

The <position> and <role> element values are of type "String".

The <org-directory> element value is of type "anyURI".

The <entity> element value is of type "String".

The <member-details-url> element value is of type "anyURI", and identifies a <person-details> type element, a <org-details> element or an "any" type element. Examples of <member-details-url> elements include: An XDM Shared Reference [OMA XDM Core], an XCAP URI [RFC4284], or a reference to a <person-details> or <org-details> element. If internal references within the same PCC document are used, then a relative URI to the XML node is recommended.

The <group-uri> element value is of type "anyURI".

The ‘pref’ attribute is assigned by the CAB User and it is used to indicate that the corresponding element associated with this attribute is preferred. Its value MUST be an integer between 1 and 100 and quantifies the ranking of elements with multiple occurrences, based on the order of preference. Different occurrences of the same element MUST NOT have the same ‘pref’ attribute value. Lower values correspond to a higher level of preference, “1” being most preferred.

The ‘index’ attribute is a “String” of a child element that must be unique within the parent element of that child element and SHALL be generated by the CAB Client. The CAB Client can use a unique identifier associated with a specific device (e.g. IMEI) in the ‘index’ generation procedure to ensure uniqueness in case of multiple devices.

The ‘view-type’ attribute is of type String and SHALL represent one or more view types with a comma-separated list e.g. “personal”, “personal, work”, “personal, friends, work”.

The<update-object-list> element SHALL be used to keep track of ordered update operations of the Confirmed Contact Card. Every update operation SHALL be described in an <update-object> element. The <update-object> element contains information about one Tracking Contact Card and includes a number of attributes and element with data semantics as follows:

a) The “index” attribute SHALL be used to address the <update-object> element and SHALL have a unique value across all <update-object> elements;

b) The “tcc-ref” attribute SHALL be used to store the User Directory Document Selector to the associated Tracking Contact Card if such exists. The reference to the associated Tracking Contact Card SHALL be created as soon as it exists contact information from a source;

c) The “iuo-ref” attribute SHALL be used to store the Document Selector to the associated Indirect Update Object Document if such exists. The reference to the associated Indirect Update Object Document SHALL be created when it exists new information from a source for manual approval. The reference SHALL be removed as soon as the procedure for manual approval has been applied by the S-CAB Client;

d) The “time-stamp” attribute SHALL be used to store a timestamp to indicate when the latest update information was made available for approval;

e) The “prio” attribute SHALL be used to indicate the Tracking Contact Card Priority of an update object in relation to other update objects. This information SHALL be used at composition of a new Confirmed Contact Card involving more than one Tracking Contact Card. The value SHALL be a decimal number between 0 and 1 with at most 3 digits after the decimal point. The value “1.00” indicates the highest priority and SHALL also be the default value of the attribute. If two Tracking Contact Cards have been given the same priority and it exists conflicting elements in the two Tracking Contact Cards, the information from the most recent updated Tracking Contact Card SHALL be used.

f) The “approval” attribute SHALL be used to indicate which type of update that shall be applied. The value of the attribute SHALL one of the following:

   i) “manual” indicating that the S-CAB User must first approve changes to the Confirmed Contact Card before they are applied by the S-CAB Enabler; or,

   ii) “automatic”indicating that the S-CAB Enabler SHALL apply the changes to the Confirmed Contact Card without any interaction with the S-CAB User;

g) The “update-type” attribute SHALL be used to indicate which type of update that has been requested. The values of the attribute SHALL be one of the following:

   i) “import” indicating that the type is import contact information from a external non-CAB system;

   ii) “export” indicating that the type is export contact information to a external non-CAB system;

   iii) “tracking” indicating that the type is tracking of external subscriptions to own contact information from a external non-CAB system; or,

   iv) “other” indicating that the type is not any of the types above.

h) The "source-name" attribute SHALL be used to indicate the name of the source used for the update if such exists. The attribute values are out of the scope of this specification and may be provided by e.g. a service provider policy.

i) The <import-status> element SHALL be used to indicate the status of an ongoing import of contact information from an external non CAB system. The "scheduled-interval" attribute of the <import-status> element SHALL be used to indicate if periodic import applies. The value of the attribute is an integer indicating the time between two imports in hours. The attribute SHALL not be present if one time import has been requested. The "expiration-time" attribute of the<import-status> element SHALL be used to indicate when a scheduled import shall be terminated. The value of the <import-status> element SHALL be one of the following:

   i) "active" indicating that the import request has been accepted and authorized by the contact;

   ii) "pending" indicating that the provided credentials in the XDCP Import Document request are insufficient to allow the import request at the 3rd Party System;

   iii) "denied" indicating that the import request is not allowed by the 3rd Party System;

   iv) "not-found" indicating that the 3rd Party System did not identify the contact; or,

   v) "other-error" indicating that the import request is not valid, and the Interworking Function determines the problem is non transient.

j) The <export-status> element SHALL be used to indicate the status of an ongoing export of contact information to an external non CAB system. The "scheduled-interval" attribute of the <export-status> element SHALL be used to indicate if periodic import applies. The value of the attribute is an integer indicating the time between two imports in hours. The value "0" SHALL be used to indicate that export shall be performed as soon as the contact information in the Confirmed Contact Card is modified. The attribute SHALL not be present if one time export has been requested. The "expiration-time" attribute of the<export-status> element SHALL be used to indicate when a scheduled export shall be terminated. The value of the <export-status> element SHALL be one of the following:

   i) "active" indicating that the export has been accepted and authorized by the 3rd Party System;

   ii) "pending" indicating that the provided credentials in the XDCP Export Document request are insufficient to allow the export at the 3rd Party System;

   iii) "denied" indicating that the export is not allowed at the 3rd Party System;

   iv) "not-found" indicating that when the 3rd Party System did not identify the contact; or,

   v) "other-error" indicating that the export is not valid, and the Interworking Function determines the problem is non transient.

k) The <tracking-status> element SHALL be used to indicate the status of an ongoing external subscription tracking of contact information in an external non CAB system. The value of the element SHALL be one of the following:

   i) "active" indicating that the tracking request has been accepted and authorized by the contact;

   ii) "pending" indicating that the provided credentials in the XDCP Import Document request are insufficient to allow the tracking request at the 3rd Party System;

   iii) "denied" indicating that the tracking request is not allowed by the 3rd Party System;

   iv) "not-found" indicating that the 3rd Party System did not identify the contact; or,

   v) "other-error" indicating that the tracking request is not valid, and the Interworking Function determines the problem is non transient.

5.2.1.8 Naming conventions

S-PCC Documents of the type Tracking Contact Cards SHALL use the same name as the associated Confirmed Contact Card and SHALL have the suffix ".tcc", with a timestamp of the creation of the Tracking Contact Card. e.g., "alice-white-20130929008765.tcc".

S-PCC Documents of type Confirmed Contact Cards SHALL have a name with a suffix ".xml" e.g., "alice-white".xml. The naming of the S-PCC files SHALL follow the same recommendations as described in section 5.1.1.8. "*Naming Conventions*".

5.2.1.9 Global Documents

This Application Usage defines no Global Document.

5.2.1.10 Resource interdependencies

This Application Usage defines no resource interdependencies.

5.2.1.11 Authorization Policies

The authorization policies for an S-PCC Document SHALL conform to the default authorization policy as described in [OMA XDM Core] section *"Authorization"*.

The S-PCC Application Usage SHALL support an Access Permissions Document as described in [OMA XDM Core] sections "*Authorization*" and "*Access Permissions Document*" with the following clarifications:

1) The <allow-any-operation-own-data> element that is a child element of the <actions> element as described in [OMA XDM Core] SHALL NOT be used.
2) Access to Tracking Contact Cards SHALL only be given to Principals that are allowed to perform any operation in the User Directory;
3) An <external-list> element included in a <conditions> element as described in [OMA XDM Core] section "*Access Permissions Document*" MAY contain a Node URI that selects a <list> element in the URI List Application Usage defined in [OMA XDM List];
4) An <external-list> element included in a <conditions> element as defined in [OMA XDM Core] section "*Access Permissions Document*" MAY contain a URI that selects a User Directory in the S-AB Application Usage. The <external-list> element SHALL be considered TRUE if the value of any <addr-uri> element or any <tel-uri> element of the Confirmed Contact Cards in the User Directory matches the identity of the authenticated Principal;
5) Access to the <update-object-list> element SHALL only be given to Principals that are allowed to modify a Confirmed Contact Card. I.e. the <update-object-list> element SHALL be removed by the XDMS from the Confirmed Contact Card document before it is sent to a Principal that only has access to retrieve the S-PCC Document;
6) Access Permissions SHALL be used to authorize Contact Views for incoming Contact Subscriptions. See Appendix B "Contact Views", for more information and examples;
7) The Access Permissions filters SHALL NOT allow Contact Views to be established over data fields across multiple <person-details> elements for a single Contact View;
8) The Contact Views generated from Access Permissions SHALL NOT include the "index" and "view-type" attributes. These attributes are meta-data that are used for PCC management and therefore not meant to be shared or published as part of the Contact Views. I.e. the "view-type" attributes SHALL be removed by the XDMS before sending a S-PCC Document to a Principal that has only access to retrieve it; and,
9) The <service-provider-specific> element and its child elements SHALL NOT be accessible by default by the S-CAB User owner of the PCC Document.

5.2.1.12 Subscription to Changes

The S-PCC Application Usage SHALL support subscription to changes as specified in [OMA XDM Core] section "*Subscriptions to changes in the XDM Resources*".

5.2.1.13 Search Capabilities

The S-PCC Application Usage SHALL support Search Requests on the S-PCC Documents of the type Confirmed Contact Cards and the following rules apply in addition to the procedures defined in [OMA XDM Core]:

1) Support a collection "org.openmobilealliance.cab-pcc/users/", subject to Access Permissions as specified in section 5.2.1.11 "*Access Permissions*". The collection SHALL include all S-PCC Documents of the type Confirmed Contact Cards in the Users Tree.
2) The basic XQuery expression [OMA XDM Core] supported by the S-PCC Application Usage SHALL be as follows:

```
xquery version "1.0";
declare default element namespace "urn:oma:xml:cab:pcc";
```

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].

5.2.1.14 XDM Preferences Document

The S-PCC Application Usage SHALL support an XDM Preferences Document as described in [OMA XDM Core] "*XDM Preferences Document*" if it supports History Information Documents as described in section 5.2.1.15 or Forwarding as described in section 5.2.1.16.

5.2.1.15 History Information Documents

The S-PCC Application Usage MAY support a Modification History Document as described in [OMA XDM Core], section "*Modification History Information Document*" for each S-PCC Document of the type Confirmed Contact Card.

The S-PCC Application Usage SHALL support a Request History Information Document as described in [OMA XDM Core] section "*Request History Information Document*" for an S-PCC Document.

5.2.1.16 Forwarding

The S-PCC Application Usage SHALL support forwarding of an S-PCC Document of the type Confirmed Contact Card as described in [OMA XDM Core] section *"XDM Resource Forwarding Operations"* with the following clarifications:

1) The XDMS SHALL on the originating side support forwarding of an S-PCC Document as described in [OMA XDM Core] section "*XDM Resource Forwarding Operations*"; and,
2) The XDMS SHALL on the receiving side, if the <note> element of an XDCP Forwarding request or an XDCP Remote Forwarding request contains the value "pcc-subscription-invitation", ignore the <actions> element in the <forward-pref> element in the XDM Preferences Document and always apply the procedure described for a <confirmed> element of an <actions> element as defined in [OMA XDM Core] sections "*Forward-Prefs Elements*" and "*Notifying the Recipients about the Status of the Received Forward XDCP Request*.

5.2.1.17 Restore

The S-PCC Application Usage SHALL support restore of an S-PCC Document of type Confirmed Contact Card, as described in [OMA XDM Core] subclause 6.2.6.5 "*XDM Restore*".

5.2.1.18 Document Reference

The S-PCC Application Usage SHALL support Document Reference of an S-PCC Document of the type Confirmed Contact Card as described in [OMA XDM Core] section "*Document Reference"*.

5.2.1.19 Differential Read and Write

The S-PCC Application Usage SHOULD support Differential Read as described in [OMA XDM Core] section "*Differential Read"*.

The S-PCC Application Usage SHOULD support Differential Write as described in [OMA XDM Core] section "*Differential Write"*.

5.2.1.20 Multiple Document Deletion

The S-PCC Application Usage MAY support multiple document deletion of S-PCC Documents, as described in [OMA XDM Core] section "*Handling of XDCP Operations"* sub section "*Delete*".

5.3 S-CAB User Preferences

5.3.1 S-CAB User Preferences Application Usage

5.3.1.1 Structure

The CAB User Preferences Document SHALL conform to the structure described in this section.

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

1) one <s-cab-upp-set> element that:

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

        i) SHALL include an 'id' attribute that uniquely identifies the S-CAB user preference profile. If the UPP Directory XDMS [OMA XDM UPP] is used, the 'id' attribute value MAY be used as value of the 'upp-id' attribute of the S-CAB profile referenced in the UPP Directory XDMS [OMA XDM UPP], to uniquely identify the S-CAB <profile> element among other <upp> elements of the UPP Directory;

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

        iii) MAY include a <send-notification-contact-added> element indicating whether to send a notification to a new contact when the S-CAB User adds a Confirmed Contact Card associated with the new contact (which is a S-CAB User or a CAB User) in his S-AB Application Usage User Directory;

        iv) MAY include a <receive-notification-when-contact-added> element indicating whether to notify the S-CAB User when another CAB User adds the S-CAB User in his AB;

        v) MAY include an <allow-suggested-contact-info> element indicating whether to allow the service provider to suggest supplemental contact information;

        vi) MAY include an <update-ab> element indicating how Confirmed Contact Cards in the S-AB Application Usage shall be updated when information resulting from different S-CAB events that cause AB update (e.g. Contact Subscription,) is received. The <update-ab> element:

            1) MAY include a <contact-subscription-update> element indicating how the Confirmed Contact Cards in the S-AB Application Usage shall be updated when information resulting from Contact Subscription is received that:

                a) MAY include an <approval> element; and,

                b) MAY include a <prio> element.

            2) MAY include an <import-update> element indicating how the Confirmed Contact Cards in the S-AB Application Usage shall be updated when information resulting from import is received that:

                a) MAY include an <approval> element; and,

                b) MAY include a <prio> element.

            3) MAY include any other elements from any other namespaces for the purpose of extensibility.

vii) MAY include a <contact-share-format> element indicating the default format to be used for all Contact Share requests for a non-CAB User; and,

viii) MAY include any other attributes or elements from any other namespaces for the purpose of extensibility.

2) one <subscription-list> element:

a) MAY contain one or more <entry> elements. Each <entry> element:

i) SHALL include a "id" attribute indicating the XCAP User Identifier (XUI) of the contact to subscribe to, and is of type "anyURI";

ii) MAY contain a <filter-set> element as described in [OMA XDM Core] section "*Initial SIP Subscription*;

iii) MAY Include a <prio> element;

iv) MAY include an <approval> element; and,

v) MAY include a <ccc-ref> element.

5.3.1.2 Application Unique ID

The AUID SHALL be "org.openmobilealliance.s-cab-user-prefs".

5.3.1.3 XML Schema

S-CAB User Preferences Document SHALL conform to the XML schema defined in [XSD_scab_user_preferences].

5.3.1.4 Default Namespace

The default element namespace used in the S-CAB User Preferences Application Usage is "urn:oma:xml:s-cab:user-prefs".

5.3.1.5 MIME Type

The MIME type for the S-CAB User Preferences Document SHALL be "application/vnd.oma.s-cab-user-prefs+xml.

5.3.1.6 Validation Constraints

None.

5.3.1.7 Data Semantics

The <profile> element SHALL indicate the details of each S-CAB User Preference profile. The "id" attribute of <profile> element indicates the unique identifier of the S-CAB User Preference profile and is of type "token".

The <display-name> element included in the <profile> element SHALL indicate a suggested name of the profile. The value is of type "String".

The <send-notification-contact-added> element SHALL indicate whether to send a notification to a new contact when the S-CAB User adds a new Confirmed Contact card associated with contact in his S-AB Application Usage. The value is of type "Boolean". The possible values are:

"false" indicates that the notification is not sent to the new contact.

"true" indicates that the notification is sent to the new contact.

The default value is "false".

The <receive-notification-when-contact-added> element SHALL indicate whether to notify the S-CAB User when another CAB User adds the CAB User in his AB. The value is of type "Boolean". The possible values are:

"false" indicates that the S-CAB User is not notified.

"true" indicates that the S-CAB User is notified.

The default value is "false".

An <approval> element included in any element below is of type is of type "String". Possible values are:

"automatic" indicating that the S-CAB Enabler SHALL apply the changes to the Confirmed Contact Card without any interaction with the S-CAB User.

"manual" indicating that the S-CAB User must first approve changes to the Confirmed Contact Card before they are applied by the S-CAB Enabler.

A <prio> element included in any element below is used at composition of a new version of a Confirmed Contact Card involving more than one update object. The value SHALL be a decimal number between 0 and 1 with at most 3 digits after the decimal point. The value "1.00" indicates the highest priority. If two update objects have been given the same priority and conflicting elements exist in the two update objects, information from the most recent updated one SHALL be used.

The <update-ab> element SHALL indicate how the Confirmed Contact Cards in the S-AB Application Usage shall be updated when information resulting from different S-CAB events that cause S-AB Document update (e.g. Contact subscription,) is received.

The <contact-subscription-update> element included in the <update-ab> element SHALL indicate how the Confirmed Contact Cards in the S-AB Application Usage SHALL be updated when information resulting from Contact Subscription is received.

The <prio> element included in the <contact-subscription-update> element SHALL be used indicate the Tracking Contact Card Priority of contact subscriptions in relation to other update objects in a Confirmed Contact Card. The default value is "1.00".

The <approval> element included in the <contact-subscription-update> element SHALL be used to indicate if the Confirmed Contact Card shall be updated automatically or if manual approval by the S-CAB User is required. The default value is "manual".

The <import-update> element included in the <update-ab> element SHALL indicate how the Confirmed Contact Cards in the S-AB Application Usage SHALL be updated when information resulting from import is received.

The <prio> child element included in the <import-update> element SHALL be used indicate the Tracking Contact Card Priority of imports in relation to other update objects in a Confirmed Contact Card. The default value is "1.00".

The <approval> element included in the <import-update> element SHALL be used to indicate if the Confirmed Contact Card shall be updated automatically or if manual approval by the S-CAB User is required. The default value is "manual".

The <contact-share-format> SHALL indicate the default format to be used for all Contact Share requests for a non-CAB User; The value is of type "String", with possible values of:

"CAB1.0" to indicate the S-PCC Application Usage contact information format as described in section 5.2.1 SHALL be used, or,

"vCard" to indicate that IETF vCard format SHALL be used for encoding and delivery of Contact Share data.

The default is "CAB1.0".

The <subscription-list> element SHALL indicate the list of contact S-PCC Documents to be subscribed. Each contact SHALL have an <entry> element in the list. The "id" attribute value included in the<entry> element SHALL as value include the XCAP User Identifier (XUI) of the contact and is of type "anyURI".

The <filter-set> element included in the <entry> element SHALL be used to indicated which parts of the contact information that is of interest for the subscription.

The <prio> element included in the <entry> element SHALL be used to indicate the Tracking Contact Card Priority of the requested subscription in relation to other update objects in the associated Confirmed Contact Card. If the element is omitted, the <prio> element included in the <contact-subscription-update> element SHALL be used.

The <ccc-ref> element included in the <entry> element is of type "anyURI" and SHALL as value include a User Directory Document Selector to an Confirmed Contact Card in the S-CAB User's S-AB Application Usage to be updated with received contact information from the subscription. If the element is omitted, a new Confirmed Contact Card is created or an existing one is used dependent upon the value of the "id" attribute included in the <entry> element.

The <approval> element included in the <entry> element SHALL be used to indicate which type of approval that shall be used when updating the Confirmed Contact Card. If the element is omitted, the <approval> element included in the <contact-subscription-update> element SHALL be used.

5.3.1.8 Naming conventions

There SHALL be only one S-CAB User Preferences Document per XUI. The name of the S-CAB User Preferences Document SHALL be "S-CAB-UP.xml".

5.3.1.9 Global Documents

This Application Usage defines no Global Document.

5.3.1.10 Resource interdependencies

This Application Usage defines no resource interdependencies.

5.3.1.11 Authorization Policies

The authorization policies for an S-CAB User Preferences Document SHALL conform to the default authorization policy as described in [OMA XDM Core] section *"Authorization"*.

The S-CAB User Preferences Application Usage SHALL support an Access Permissions Document as described in [OMA XDM Core] sections "*Authorization*" and "*Access Permissions Document*" with the following clarifications:

1) An <external-list> element included in a <conditions> element as defined in [OMA XDM Core] section "*Access Permissions Document*" MAY contain a Node URI that selects a <list> element in the URI List Application Usage defined in [OMA XDM List]; and,

2) The <actions> child element of <rule> element SHALL NOT only include the <allow-any-operation-own-data>.

5.3.1.12 Subscription to Changes

The S-CAB User Preferences Application Usage SHALL support subscription to changes as described in [OMA XDM Core] section "*Subscriptions to Changes in the XDM Resource*".

5.3.1.13 Search Capabilities

Not applicable.

5.3.1.14 XDM Preferences Document

Not applicable.

5.3.1.15 History Information Documents

Not applicable.

5.3.1.16 Forwarding

Not applicable.

5.3.1.17 Restore

Not applicable.

5.4 Interworking Function

This specification specifies two Application Usages that an S-CAB client can use to import or export information between non-CAB systems and an S-CAB User's address book or personal contact card.

5.4.1 S-AB and S-PCC Interworking Function Application Usages

5.4.1.1 Structure

Not applicable.

5.4.1.2 Application Unique ID

The AUID SHALL be "org.openmobilealliance.cab-pcc.s-cab-iwf" to import or export information between non-CAB systems and the S-PCC Application Usage and "org.openmobilealliance.s-cab-ab.s-cab-iwf" to import or export information between non-CAB systems and the S-AB Application Usage.

5.4.1.3 XML Schema

Not applicable.

5.4.1.4 Default Namespace

Not applicable.

5.4.1.5 MIME Type

Not applicable.

5.4.1.6 Validation Constraints

Not applicable.

5.4.1.7 Data Semantics

Not applicable.

5.4.1.8 Naming Conventions

These Application Usages define no Naming Conventions.

5.4.1.9 Global Documents

These Application Usages define no Global Documents.

5.4.1.10 Resource Interdependencies

These Application Usages are dependent on S-AB and S-PCC Application Usages, as described in the [S-CAB TS] section 5.3.1, "*Import or Tracking of Contact Information in Non-CAB Systems*" and section 5.3.2 "*Export of Contact Information to Non-CAB Systems".*

5.4.1.11 Authorization Policies

The authorization policies for these Application Usages SHALL conform to the default authorization policy as described in [OMA XDM Core] section *"Authorization"*.

These Application Usages MAY support Access Permissions Documents as described in [OMA XDM Core] sections "*Authorization*" and "*Access Permissions Document*" with the following clarifications:

1) These Application Usages SHALL NOT define their own Access Permissions Documents. They SHALL instead use the Access Permissions Documents associated with the S-AB Application Usage or with the S-PCC Application Usage for authorization. In such Access Permissions Document, the <allow-any-operation> element included in an <actions> element as defined in [OMA XDM Core] section "*Access Permissions Document*" SHALL give an authenticated Principal permissions to perform XDCP Import and XDCP Export requests.

5.4.1.12 Subscription to Changes

Not applicable

5.4.1.13 Search Capabilities

Not applicable

5.4.1.14 XDM Preferences Document

Not supported.

5.4.1.15 History Information Documents

Not supported.

5.4.1.16 Forwarding

Not applicable

5.4.1.17 Restore

Not applicable

5.4.1.18 Document Reference

Not applicable

5.4.1.19 Differential Read and Write

Not applicable

5.4.1.20 Import

These Application Usages define a new XDCP operation "Import".

5.4.1.20.1 Structure of the XDCP Document

The XDCP Document SHALL conform to the structure of an XDCP Document as described in [OMA XDM Core] "*XDCP Document*" with the following clarifications and additions:

1) The <request> element SHALL include an <import-to-doc> element that:
   a) SHALL include a <source-name> element;
   b) MAY include a <scheduled-interval> element;
   c) MAY include an <expiration-time> element;
   d) MAY include a <credentials> element that;
      i) MAY include a <user-name> element
      ii) MAY include a <password> element; and,

iii) MAY include elements from other namespaces.

e) MAY include a <prio> element;

f) MAY include an <approval> element.

g) MAY include a <ccc-ref> element;

h) MAY include a <filter-set> element as defined in [RFC4661]; and,

i) MAY include elements from other namespaces.

2) The <response> element SHALL include one of the following elements:

a) an <import-result> element that;

i) SHALL contain an <approval> element;

ii) SHALL contain a <ccc-ref> element;

iii) SHALL contain a <new-ccc-etag> element;

iv) MAY include an <import-done> element; and,

v) MAY include an <iuo-ref> element.

b) an <invalid-recipient> element;

c) a <not-found> element;

d) a <not-supported-request> element;

e) a <filter-set-not-valid> element;

f) an <other-conflict > element; or,

g) a <denied> element.

5.4.1.20.2 XML Schema

The XDCP Document SHALL conform to the XML Schemas described in [XSD_xdcp] and [XSD_scab_extensions].

5.4.1.20.3 Data Semantic

The XDCP Document SHALL conform to data semantics described in [OMA XDM Core] "*XDCP Document*" with the following clarifications and additions:

1) The <import-to-doc> element SHALL be used to request import of contact information from an external 3rd party system to a Confirmed Contact Card. The import can be of three types "one time import", "periodic import at regular intervals" or "tracking".

2) The <scheduled-interval> element SHALL be used to specify when import of contact information shall be done. The element is of the type "Integer" indicating the time between two imports in hours. The value "0" SHALL be used to indicate that tracking of the contact information shall be done i.e the import is done as soon as contact information is changed in the 3rd party system. The element SHALL NOT be included in the request if a one time import of contact information is requested.

3) The <expiration-time> element SHALL be used to indicate when periodic import or tracking shall be stopped. The value SHALL be of type "DateTime". If the element is not included in the request, the import continues until the <update-object> element in the associated Confirmed Contact Card is deleted.

4) The <source-name> element SHALL be used to indicate the name of source of the external 3rd party system (e.g. domain/address). The value SHALL be of type "String". The element values are out of the scope of this specification and may be provided by e.g. a service provider policy.

5) The <credentials> element SHALL be used to indicate the credentials necessary to authorize access to the external 3rd party system. The <user-name> element SHALL contain the username identifying the user of the 3rd party system. The value SHALL be of type "String". The <password> element SHALL contain the password that is used for authentication purpose.

6) The <prio> element SHALL be used to indicate the Tracking Contact Card Priority of the requested import in relation to other update objects in the associated Confirmed Contact Card. This information is used at composition of a new version of the Confirmed Contact Card involving more than one update objects. The value SHALL be a decimal number between 0 and 1 with at most 3 digits after the decimal point. The value "1.00" indicates the highest priority and this value is also used if the element is omitted from the request. If two update objects have been given the same priority and it exists conflicting elements in the two update objects, information from the most recent updated one is used.

7) The <approval> element SHALL be used to indicate which type of update that shall be applied. If the element is omitted in the request, the type of update defined in the S-CAB User Preferences Document is used. The value of the attribute SHALL one of the following:
   a) "manual" indicating that the S-CAB User must first approve changes to the Confirmed Contact Card before they are applied by the S-CAB Enabler; or,
   b) "automatic" indicating that the S-CAB Enabler SHALL apply the changes to the Confirmed Contact Card without any interaction with the S-CAB User.

8) The <ccc-ref> element SHALL be used to indicate which Confirmed Contact Card the imported contact information shall update. The value of the element SHALL be a Document Selector that selects a Confirmed Contact Card and SHALL be of type "anyURI". If the Confirmed Contact Card, referenced by the URI in the element, does not exist, a new Confirmed Contact Card is created by the import function using the Document Selector provided in the element. If the element is omitted in the request, a new Confirmed Contact Card is created by the import function as defined by local policy.

9) The <filter-set> element SHALL be used to specify which elements of the Confirmed Contact Card the import function is allowed to update. If the <element is omitted any element in the Confirmed Contact Card is allowed to be updated by the import function.

10) The <import-result > element SHALL be used to indicate that the import request is accepted. The <ccc-ref> element contains the Document Selector to the Confirmed Contact Card that is updated due to the request. The <approval> element contains the type of update that will be used. The <new-ccc-etag> element contains the new E-tag value for the Confirmed Contact Card as received by the import function when creating the <update-object> element in the associated Confirmed Contact Card. The <import-done> element SHALL be used to indicate that the first import is already performed and the Confirmed Contact Card is already updated with the result. If "manual" approval applies and the first import already is done, the reference to the Indirect Update Object Document is provided in the <iuo-ref> element.

11) The <invalid-recipient> element SHALL be used to indicate that the import request is not accepted by the import function due to that the import function is not able to identify the 3rd Party System in the <source-name> element or that the 3rd Party System is not able to identify the contact;

12) The <not-found> element SHALL be used to indicate the Confirmed Contact Card or the User Directory referenced in the <ccc-ref> element can not the found;

13) The <not-supported-request> element SHALL be used to indicate that the import request is not accepted by the import function due to that the requested type of import is not supported (e.g. periodic import at regular interval);

14) The <filter-set-not-valid> element SHALL be used to indicate that the import request is not accepted by the import function due to that the filters in the <filter-set> element are not valid or impossible to apply;

15) The <denied> element SHALL be used to indicate that the import request is not accepted by the import function due to that the requesting Principal is not allowed to use the import function or that the 3rd party System did not accept the provided credentials; and,

16) The <other-conflict> element SHALL be used to indicate that the import request is not accepted by the import function due to any other problems that the import function determines as non transient.

5.4.1.21 Export

These Application Usages define a new XDCP operation "Export".

5.4.1.21.1 Structure of the XDCP Document

The XDCP Document SHALL conform to the structure of an XDCP Document as described in [OMA XDM Core] "*XDCP Document*" with the following clarifications and additions:

1) The <request> element SHALL include an <export-from-doc> element that:
   a) SHALL include a <source-name> element;
   b) SHALL include a <ccc-ref> element;
   c) MAY include a <scheduled-interval> element;
   d) MAY include an <expiration-time> element;
   e) MAY include a <credentials> element that;
      i) MAY include a <user-name> element;
      ii) MAY include a <password> element; and,
      iii) MAY include elements from other namespaces.
   f) MAY include a <filter-set> element as defined in [RFC4661]; and,
   g) MAY include elements from other namespaces.
2) The <response> element SHALL include one of the following elements:
   a) a <done> element;
   b) a <not-found> element;
   c) a <not-supported-request> element;
   d) a <filter-set-not-valid> element;
   e) an <other-conflict> element; or,
   f) a <denied> element.

5.4.1.21.2 XML Schema

The XDCP Document SHALL conform to the XML Schemas described in [XSD_xdcp] and [XSD_**scab_extensions**].

5.4.1.21.3 Data Semantic

The XDCP Document SHALL conform to data semantics described in [OMA XDM Core] "*XDCP Document*" with the following clarifications and additions:

1) The <export-from-doc> element SHALL be used to request export of contact information to an external 3rd party system of a Confirmed Contact Card. The export can be of three types "one time export", "periodic export at regular intervals" or "export when the document is modified".
2) The <scheduled-interval> element SHALL be used to specify when export of contact information shall be done. The element is of the type "Integer" indicating the time between two exports in hours. The value "0" SHALL be used to indicate that export of the contact information shall be done as soon as the document is changed. The element SHALL NOT be included in the request if a one time export of document is requested.
3) The <expiration-time> element SHALL be used to indicate when export stopped. The value SHALL be of type "DateTime". If the element is not included in the request, the export continues until the <update-object> element in the associated Confirmed Contact Card is deleted.
4) The <source-name> element SHALL be used to indicate the name of source of the external 3rd party system (e.g. domain/address). The value SHALL be of type "String". The element values are out of the scope of this specification and may be provided by e.g. a service provider policy.
5) The <credentials> element SHALL be used to indicate the credentials necessary to authorize access to the external 3rd party system. The <user-name> element SHALL contain the user name identifying the user of the 3rd party system. The

value SHALL be of type “String”. The <password> element SHALL contain the password that is used for authentication purpose external 3rd party system.

6) The <ccc-ref> element SHALL be used to indicate which Confirmed Contact Card that shall be exported. The value of the element SHALL be a Document Selector that selects a Confirmed Contact Card and SHALL be of type “anyURI”.

7) The <filter-set> element SHALL be used to specify which elements of the Confirmed Contact Card that are allowed to be exported. If the <element is omitted all element in the Confirmed Contact Card are allowed to be exported.

8) The <done> element SHALL be used to indicate that the export request is accepted.

9) The <invalid-recipient> element SHALL be used to indicate that the export request is not accepted by the export function due to that the export function is not able to identify the 3rd Party System in the <source-name> element or that the 3rd Party System is not able to identify the contact;

10) The <not-found> element SHALL be used to indicate that the Confirmed Contact Card referenced in the <ccc-ref> element in the request can not be found.

11) The <not-supported-request> element SHALL be used to indicate that the export request is not accepted by the export function due to that the requested type of export is not supported;

12) The <filter-set-not-valid> element SHALL be used to indicate that the export request is not accepted by the export function due to that the filters in the <filter-set> element are not valid or impossible to apply;

13) The <denied> element SHALL be used to indicate that the export request is not accepted by the export function due to that the requesting Principal is not allowed to use the export function or that the 3rd party System did not accept the provided credentials; and,

14) The <other-conflict> element SHALL be used it indicate that the export request is not accepted by the export function due to any other problems that the export function determines as non transient.

5.5 Indirect Update Object

This section specifies the S-CAB Indirect Update Object (IUO) Application Usage, which contains Indirect Update Object Documents.

An Indirect Update Object Document contains document patches that can be applied to a Confirmed Contact Card. These document patches are created when an Indirect Update Object Document is requested based on information from a Tracking Contact Card and contains information about how information in the Tracking Contact card can be applied to the latest version of a Confirmed Contact Card stored in the S-CAB XDMS. The main purpose with this information is to provide it to the S-CAB User for manually approval before the S-CAB client applies the information in a Tracking Contact Card to the Confirmed Contact Card.

5.5.1 S-CAB Indirect Update Object Application Usage

5.5.1.1 Structure

The IUO Document SHALL conform to the structure of an XCAP Diff Document as described in [RCF5874] and in [OMA XDM Core] section "*Differential Write*" with the following clarifications:

1) The <xcap-diff> element:
   a) SHALL include a single <document> element that;
      i) SHALL include a "previous-etag" attribute;
      ii) SHALL as first child element include a <remove> element that SHALL include a "sel" attribute with a node selector "/pcc/update-object-list/update-object [@index='index-value']/@iuo-ref" as value where "index-value" SHALL select the <update-object> element associated the IUO Document; and,
      iii) SHALL include one or more <add>, <remove> or <replace> elements that SHALL have "sel" attributes with node selectors "/pcc/…." as values.

The schema definition is provided in section 5.5.1.3 "*XML Schema*".

5.5.1.2 Application Unique ID

The IUO Document AUID SHALL be "org.openmobilealliance.s-cab-iuo".

5.5.1.3 XML Schema

The IUO Documents SHALL conform to the XML schema described in [RFC5874].

5.5.1.4 Default Namespace

The IUO Documents default element namespace SHALL be "urn:ietf:params:xml:ns:xcap-diff".

5.5.1.5 MIME Type

The MIME type for the IUO Document SHALL be "application/xcap-diff+xml".

5.5.1.6 Validation Constraints

Not applicable as the IUO Document is created when retrieved.

5.5.1.7 Data Semantics

The data semantics for element and attribute in an IUO Document SHALL be as described in [RFC5874] with the following clarifications:

1) The first child element included in the <document> element SHALL be used to remove the reference to the IUO Document by removing the "iuo-ref" attribute from the <update-object> element to indicate to the network that the procedure for manual approval is performed for this Update Object;

2) The additional child elements included in the <document> element SHALL contain proposed updates to elements and attributes in the Confirmed Contact Card based on information from the associated Tracking Contact Card. Each child element SHALL contain a patch to the Confirmed Contact Card that does not have any dependencies to other patches in other child elements; and,

3) The "previous-etag" attribute included in the <document> element SHALL contain the E-tag value of the current version of the Confirmed Contact Card.

5.5.1.8 Naming Conventions

The IUO Application Usage defines no naming conventions.

5.5.1.9 Global Documents

This Application Usage defines no Global Documents.

5.5.1.10 Resource Interdependencies

These Application Usages are dependent on S-AB and S-PCC Application Usages, as described in the [S-CAB TS] section 5.4, *"Composition Function"*.

5.5.1.11 Authorization Policies

The authorization policies for an IUO Document SHALL conform to the default authorization policy as described in [OMA XDM Core] section *"Authorization"* with the following clarifications:

1) Principals that have write permissions to the associated Confirmed Contact Card, SHALL also have retrieve permission to the IUO Document.

5.5.1.12 Subscription to Changes

Not Supported.

5.5.1.13 Search Capabilities

Not Supported.

5.5.1.14 XDM Preferences Document

Not Supported.

5.5.1.15 History Information Documents

Not Supported.

5.5.1.16 Forwarding

Not Supported.

5.5.1.17 Restore

Not Supported.

5.5.1.18 Document Reference

Not Supported.

5.5.1.19 Differential Read and Write

Not Supported.

5.6 External Directories Search

The S-CAB External Directories Search Application Usage is an Application Usage that an S-CAB client can use to search External Directories in non CAB-systems.

5.6.1 S-CAB External Directories Search Application Usage

5.6.1.1 Structure

The Directory information to be searched for SHALL conform to the structure of an S-PCC Document defined in section 5.2.1.1.

5.6.1.2 Application Unique ID

The S-CAB- External Directories Search Application Usage AUID SHALL be “org.openmobilealliance.s-cab-external-search”.

5.6.1.3 XML Schema

The Directory information to be searched for SHALL conform to the XML schema described in [XSD_cab_PCC] and in [XSD_**scab_extensions**].

5.6.1.4 Default Namespace

Not applicable.

5.6.1.5 MIME Type

Not applicable.

5.6.1.6 Validation Constraints

The Directory information to be searched for SHALL conform to the validation constraints specified in section 5.2.1.6.

5.6.1.7 Data Semantics

The Directory information to be searched for SHALL conform to the Data Semantics specified in section 5.2.1.7.

5.6.1.8 Naming Conventions

This Application Usage defines no Naming Conventions.

5.6.1.9 Global Documents

This Application Usage defines no Global Documents.

5.6.1.10 Resource Interdependencies

This Application Usage defines no Resource Interdependencies.

5.6.1.11 Authorization Policies

The authorization policies for the S-CAB External Directories Search Application Usage SHALL conform to the default authorization policy as described in [OMA XDM Core] section “Authorization”.

5.6.1.12 Subscription to Changes

Not applicable.

5.6.1.13 Search Capabilities

This Application Usage SHALL support Search Requests towards External Directories based on search document that conforms to the XML schema defined in [XSD_search] with the following additions:

1) The <request> element SHALL include <datasource> element as defined in [XSD_**scab_extensions**]. The <datasource> element indicates the specific external directory source to which the <request> is targeted. The value SHALL be of type String.

2) The <response> element SHALL include <datasource> element as defined in [XSD_**scab_extensions**]. The <datasource> element indicates the specific external directory source from which the <response> is received. The value SHALL be of type String.

The following rules apply in addition to the procedures defined [OMA XDM Core]:

1) support a collection “org.openmobilealliance.s-cab-external-search/global/”,

2) The basic XQuery expression supported by this Application Usage SHALL be as follows:

```
xquery version "1.0";
declare default element namespace "urn:oma:xml:cab-pcc";
```

All search requests that do not comply with the basic XQuery expression as defined in this sub clause SHALL be responded with an HTTP “409 Conflict” error response as defined by [OMA XDM Core] in sub clause 6.2.3 “*Searching for Data in XML Documents*”.

Note: The interactions with External Directories and mapping the requests/responses to/from External Directories are out of scope of this specification.

5.6.1.14 XDM Preferences Document

Not applicable.

5.6.1.15 History Information Documents

Not supported.

5.6.1.16 Forwarding

Not applicable

5.6.1.17 Restore

Not applicable

5.6.1.18 Document Reference

Not applicable

5.6.1.19 Differential Read and Write

Not applicable

5.7 Communication History

The S-CAB Communication History Application Usage supports the information related to any communications (e.g. messaging, voice) occurred on various S-CAB User devices, in a multi-device context.

The S-CAB Communication History (CH) Application Usage SHALL include multiple documents, each containing one communication event. This allows any of S-CAB User devices to efficiently add, without conflicts or concurrency issues, new communication log entries from any of S-CAB user devices.

Each CH document stored in S-CAB User directory SHALL carry the same XML data structure, as defined in S-CAB Communication History Application Usage.

5.7.1 S-CAB Communication History Application Usage

5.7.1.1 Structure

The Communication History information SHALL conform to the structure described below. Any Communication History document:

1) SHALL include a <comm-hist> root element, which SHALL contain:
   a) Zero or one <comm-event> element containing the information associated to the communication event being logged.

      Each <comm-event>:
      i) SHALL have a “type” attribute indicating the communication type being logged;
      ii) SHALL have a “date” attribute representing Gregorian type calendar and indicating the date and timestamp of the communication;
      iii) MAY have a “device” attribute that contains the information about the device on which the communication event occurred;
      iv) MAY include a “orig” attribute that indicates whether the communication was received, or initiated;
      v) MAY include any other attributes for the purpose of extensibility;
      vi) SHALL include one or more <participant> element, which:
         - SHALL include a “comm-address” attribute containing the identity of the other user(s) involved in the communication;
         - MAY include a “display-name” attribute containing the displayed identity of the other user(s) involved in the communication;
         - MAY include a <member-details-url> element, which is a URL identifying the communication participant information, expressed as an XCAP URI reference, to S-AB Contact(s) associated with identities of the other user(s) involved in the communication, when the other users are also S-AB Contacts; and,
         - MAY include any other attributes for the purpose of extensibility.
      vii) MAY include a <result> element that indicates the outcome of the communication;
      viii) MAY include a <duration> element indicating the duration of the communication (if applicable to a communication type, e.g. voice calls, chat);
      ix) MAY include a <usage-info> element indicating any usage information associated to the other user(s) involved in the communication. The <usage-info> element:
         1) MAY include a <conversation-id> element, used for IMS messaging items, with an attribute “value” indicating the value of the Conversation-ID as defined in [CPM TS] for the messaging communication item, and;

a. SHALL include a <contribution-id> child element, used for messaging items, indicating the value of the Contribution-ID of the messaging communication item, as defined in the [CPM TS] and [CPM TS MS];

2) MAY include a <message-context> element, used for legacy messaging items, indicating the type of the message object;

3) MAY have a <uid> element indicating the unique message identifier of the message object stored in a message store [CPM TS MS];

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

x) MAY include any other elements from any other namespaces for the purpose of extensibility.

5.7.1.2 Application Unique ID

The S-CAB Communication History Application Usage AUID SHALL be “org.openmobilealliance.s-cab-comm-history”.

5.7.1.3 XML Schema

The S-CAB Communication History information to be searched for SHALL conform to the XML schema described in [XSD_scab_comm-hist].

The S-CAB Communication History default element namespace is "urn:oma:xml:scab:ch".

5.7.1.4 MIME Type

The MIME type for an S-CAB Communication History Document SHALL be “application/vnd.oma.scab-ch+xml”.

5.7.1.5 Validation Constraints

The S-CAB Communication History information to be searched for SHALL conform to the validation constraints specified in section 5.7.1.7.

5.7.1.6 Data Semantics

The ‘device’ attribute is of type “String” and SHALL uniquely identify each one of S-CAB User devices.

The <member-details-url> element is defined in the [CAB XDM] section 5.2.

The <result> element is of type “String” and SHALL include one of the following enumeration values:

Value	Definition
answered	value indicates that the communication was established successfully.
missed	value indicates that the that a received communication was not established.
no_answer	value indicates that an initiated or received communication was not answered, or acknowledged.
other	value used to indicate any other result for extension purposes.

Table 1: Communication History <result> element values

The <duration> element is of type “String” and contains the duration of the communication event in miliseconds.

The “orig“ attribute is of type Boolean and SHALL be set to TRUE if the <comm-event> element is created when the S-CAB User has initiated the communication.

The “date” attribute is of type “DateTime” and SHALL contain the time when the communication was established on the S-CAB User’s device.

The “type” attribute is of data type “String” and SHALL include one of the following enumeration values:

Value	Definition
voice-call	value indicates that the communication was a voice call.
video-call	value indicates that the communication was a video call.
group-call	value indicates that the communication was a group call
messaging	value indicates that the communication was a messaging event.
social	value indicates that the communication was a social event (includes social networking, presence events, etc).
notification	value indicates that the event was a notification.
other	value used to indicate any other communication event for extension purposes.

Table 2: Communication History “type” attribute values

The “comm-address“ attribute is of type “String” and SHALL contain address or identity information about the remote side in a communication e.g., a dialled string, a SIP URI, a TEL URI. If the information is unknown, the String value “UNKNOWN” SHALL be used.

The “display-name” attribute is of type “String” and SHALL contain displayed identity of the remote side in a communication e.g., “Bob”.

The attribute “value” of the <conversation-id> element is of type “String” and SHALL contain the Conversation Identifier as defined in [CPM TS].

The <contribution-id> element is of type “String” and SHALL contain the Contribution Identifier as defined in [CPM TS].

The <message-context> element is of type “String” and SHALL contain the type of a message object stored, as defined in [CPM TS] and [RFC3458].

The <uid> element is of type “String” and SHALL contain the IMAP unique id value of message object stored in the Message Store, as defined in [CPM TS].

5.7.1.7 Naming Conventions

There SHALL be:

zero or more Composed Communication History (CH) XDM Documents in the CH Application Usage. Each CH document SHALL be named based on the following convention:

- “CommHistory-{type}-{device}-{timestamp}.xml”.

The String {type} is a variable that SHOULD carry the same value as the ‘type’ attribute inside the CH document.

The String {device} is a variable that SHOULD carry the same value as the ‘device’ attribute inside the CH document.

The String {timestamp} is a variable that SHOULD carry the same value as the ‘date’ attribute inside the CH document.

5.7.1.8 Global Documents

This Application Usage defines no Global Documents.

5.7.1.9 Resource Interdependencies

This Application Usage defines no Resource Interdependencies.

5.7.1.10 Authorization Policies

The Access Permissions for manipulating Communication History Documents, i.e. create, delete, retrieve and modify, SHALL conform to [OMA 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 CCH and/or TCH 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, and/or <allow-delete> element as specified in [OMA XDM Core].

5.7.1.11 Subscription to Changes

The S-CAB Communication History Application Usage SHALL support subscription to changes.

5.7.1.12 Search Capabilities

This Application Usage SHALL support search operations on the CCH document and the following rules apply in addition to the procedures defined in [OMA XDM Core]:

1) support a collection “org.openmobilealliance.scab-ch/users/”, subject to Access Permissions as specified in subclause 5.7.1.11 “Access Permissions”, and

2) the basic XQuery expression [OMA XDM Core] supported by the Communication History Application Usage SHALL be as follows:
   - xquery version "1.0";
   - declare default element namespace "urn:oma:xml:scab:ch".

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].

5.7.1.13 XDM Preferences Document

Not applicable.

5.7.1.14 History Information Documents

Not supported.

5.7.1.15 Forwarding

Not applicable

5.7.1.16 Restore

Not applicable

5.7.1.17 Document Reference

Not applicable

5.7.1.18 Differential Read and Write

Not applicable.

Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
OMA-TS-S_CAB_XDM-V1_0-20170725-A	25 Jul 2017	Status changed to Approved by TP TP Ref # OMA-TP-2017-0030-INP_SimplifiedCAB-V1_0_ERP_for_Final_Approval

Appendix B. Contact Views (Informative)

This sub clause describes the realization of Contact Views based on Access Permissions and filters as described in [OMA XDM Core].

Example XML Instance of PCC data with 'view-type' association.

```
<?xml version="1.0" encoding="UTF-8"?>
<pcc pcc-type="individual" xmlns="urn:oma:xml:cab:pcc" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
   instance" >
  <person-details index="gt4fd890bu8">
   <name index="fg4fd890der">
      <name-entry index="dslkhdskj" name-type="LegalName" view-type="work">
          <title display-order="1">Mr.</title>
          <given display-order="1">Joe</given>
          <family display-order="1">Smith</family>
          <gen-id display-order="1">Jr.</gen-id>
          <degree display-order="1">PhD</degree>
          <display-name>Joe Smith</display-name>
      </name-entry>
      <name-entry index="riuetutl" name-type="KnownAs" view-type="personal">
          <given display-order="1">Joe</given>
          <family display-order="1">Smith</family>
          <display-name>Joe</display-name>
      </name-entry>
   </name>
   <address>
      <address-entry index="dasfdhasl" addr-type="Work" view-type="work">
          <location>
              <location-label>GPS for ABC Consulting</location-label>
              <latitude>
                  <degrees-measure>25</degrees-measure>
                  <minutes-measure>50</minutes-measure>
                  <seconds-measure>00</seconds-measure>
                  <lat-sign>N</lat-sign>
              </latitude>
              <longitude>
                  <degrees-measure>93</degrees-measure>
                  <minutes-measure>31</minutes-measure>
                  <seconds-measure>00</seconds-measure>
                  <long-sign>W</long-sign>
              </longitude>
              <altitude>
                  <meters-measure>60</meters-measure>
                  <alt-sign>+</alt-sign>
              </altitude>
              <time-zone>
                  <tz-label>My work timezone</tz-label>
                  <utc-offset>-8</utc-offset>
                  <tz-url>maps.example.com/1234</tz-url>
              </time-zone>
          </location>
          <label>Work Address</label>
          <addr-details>
              <country>US</country>
              <region>
                  <region-name region-type="State">Alabama</region-name>
              </region>
              <locality>
                  <locality-name locality-type="City">Huntsville</locality-name>
              </locality>
              <street>
                  <str-name>Washington Avenue</str-name>
                  <str-number>1000</str-number>
              </street>
              <post-code>
                  <post-code-main>11111</post-code-main>
                  <sub-post-code>1111</sub-post-code>
              </post-code>
          </addr-details>
```

```
      </address-entry>
      <address-entry index="ludskhf" addr-type="Work" view-type="personal">
          <location>
              <time-zone>
                  <tz-label>My home timezone</tz-label>
                  <utc-offset>-8</utc-offset>
                  <tz-url>maps.example.com/5678</tz-url>
              </time-zone>
          </location>
          <label>My Home Address</label>
          <addr-details>
              <country>US</country>
              <region>
                  <region-name region-type="State">Alabama</region-name>
              </region>
              <locality>
                  <locality-name locality-type="City">Huntsville</locality-name>
              </locality>
              <street>
                  <str-name>Colorado Blvd</str-name>
                  <str-number>1000</str-number>
              </street>
              <post-code>
                  <post-code-main>22222</post-code-main>
                  <sub-post-code>222</sub-post-code>
              </post-code>
          </addr-details>
   </address-entry>
   </address>
   <comm-addr xml:lang="en">
      <uri-entry index="glrjgil" addr-uri-type="Home SIP-URI" view-type="personal">
          <addr-uri xui-type="CAB">sip:joe.smith@example.com</addr-uri>
          <label>My IP Phone</label>
      </uri-entry>
      <uri-entry index="asdhfdsag" addr-uri-type="Email">
          <addr-uri> mailto:jboggs@example.com</addr-uri>
          <label>My personal Email</label>
      </uri-entry>
      <tel index="nbvfjf" tel-type="Mobile" view-type="work">
          <tel-nb>
              <tel-str>1-222-222-2222</tel-str>
          </tel-nb>
          <label>My mobile Phone at work</label>
      </tel>
      <tel index="ijlfushf" tel-type="Home" view-type="personal">
          <tel-nb>
              <tel-str>1-111-111-1111</tel-str>
          </tel-nb>
          <label>My phone at home</label>
      </tel>
      <tel index="ijlfdferf" tel-type="Other" view-type="personal,work">
          <tel-nb>
              <tel-str>+1-333-333-3333</tel-str>
          </tel-nb>
          <label>Other</label>
      </tel>
   </comm-addr>
   <birth xml:lang="en" view-type="personal">
      <birth-date>
          <date>1957-07-09T06:01:00</date>
      </birth-date>
      <place index="hgdfersx">Saint Joesph Hospital Little Rock, Arkansas</place>
   </birth>
</person-details>
</pcc>
```

Example 1 – Creation of 'Personal" Contact View using a filter that selects particular elements by position

```
<?xml version="1.0" encoding="UTF-8"?>
<ap-rules xmlns="urn:oma:xml:xdm:ap"
    xmlns:cp="urn:ietf:params:xml:ns:common-policy"
    xmlns:ocp="urn:oma:xml:xdm:common-policy"
    xmlns:fi="urn:ietf:params:xml:ns:simple-filter">
<document-rule path="pcc">
 <cp:ruleset>
   <cp:rule id="PersonalView">
     <cp:conditions>
         <cp:identity>
            <cp:one id="sip:joe.smith@example.com"/>
         </cp:identity>
      </cp:conditions>
    <cp:actions>
        <allow-retrieve/>
    </cp:actions>
    <cp:transformations>
      <fi:filter-set>
        <fi:ns-bindings>
          <fi:ns-binding prefix="pcc" urn="urn:oma:xml:cab:pcc"/>
        </fi:ns-bindings>
        <fi:filter id="PersonalView">
          <fi:what>
            <fi:include type="xpath">//pcc:pcc/pcc:person-details/pcc:name[1]/pcc:name-
   entry[2]</fi:include>
            <fi:include type="xpath">//pcc:pcc/pcc:person-details/pcc:address/pcc:address-
   entry[2]</fi:include>
            <fi:include type="xpath">//pcc:pcc/pcc:person-details/pcc:comm-addr/pcc:uri-
   entry[1]</fi:include>
            <fi:include type="xpath">//pcc:pcc/pcc:person-details/pcc:comm-
   addr/pcc:tel[2]</fi:include>
            <fi:include type="xpath">//pcc:pcc/pcc:person-details/pcc:comm-
   addr/pcc:tel[3]</fi:include>
           <fi:include type="xpath">//pcc:pcc/pcc:person-details/pcc:birth</fi:include>
           </fi:what>
        </fi:filter>
     </fi:filter-set>
    </cp:transformations>
   </cp:rule>
 </cp:ruleset>
</document-rule>
</ap-rules>
```

Example 2 – Creation of 'Work" Contact View using a filter that selects particular elements by position

```
<?xml version="1.0" encoding="UTF-8"?>
<ap-rules xmlns="urn:oma:xml:xdm:ap"
    xmlns:cp="urn:ietf:params:xml:ns:common-policy"
    xmlns:ocp="urn:oma:xml:xdm:common-policy"
    xmlns:fi="urn:ietf:params:xml:ns:simple-filter">
<document-rule path="pcc">
 <cp:ruleset>
   <cp:rule id="WorkView">
     <cp:conditions>
         <cp:identity>
            <cp:one id="sip:joe.smith@example.com"/>
         </cp:identity>
      </cp:conditions>
    <cp:actions>
        <allow-retrieve/>
    </cp:actions>
    <cp:transformations>
      <fi:filter-set>
        <fi:ns-bindings>
          <fi:ns-binding prefix="pcc" urn="urn:oma:xml:cab:pcc"/>
        </fi:ns-bindings>
```

```
        <fi:filter id="WorkView">
          <fi:what>
            <fi:include type="xpath">//pcc:pcc/pcc:person-details/pcc:name[1]/pcc:name-
   entry[1]</fi:include>
            <fi:include type="xpath">//pcc:pcc/pcc:person-details/pcc:address/pcc:address-
   entry[1]</fi:include>
            <fi:include type="xpath">//pcc:pcc/pcc:person-details/pcc:comm-
   addr/pcc:tel[1]</fi:include>
            <fi:include type="xpath">//pcc:pcc/pcc:person-details/pcc:comm-
   addr/pcc:tel[3]</fi:include>
          </fi:what>
        </fi:filter>
     </fi:filter-set>
    </cp:transformations>
   </cp:rule>
 </cp:ruleset>
</document-rule>
</ap-rules>
```

Example 3 – Creation of "Personal" Contact View using a filter that utilizes the 'view-type' attribute

```
<?xml version="1.0" encoding="UTF-8"?>
<ap-rules xmlns="urn:oma:xml:xdm:ap"
    xmlns:cp="urn:ietf:params:xml:ns:common-policy"
    xmlns:ocp="urn:oma:xml:xdm:common-policy"
    xmlns:fi="urn:ietf:params:xml:ns:simple-filter">
<document-rule path="pcc">
 <cp:ruleset>
   <cp:rule id="PersonalView">
     <cp:conditions>
         <cp:identity>
            <cp:one id="sip:joe.smith@example.com"/>
         </cp:identity>
      </cp:conditions>
    <cp:actions>
        <allow-retrieve/>
    </cp:actions>
    <cp:transformations>
      <fi:filter-set>
        <fi:ns-bindings>
          <fi:ns-binding prefix="pcc" urn="urn:oma:xml:cab:pcc"/>
        </fi:ns-bindings>
        <fi:filter id="PersonalView">
          <fi:what>
            <fi:include type="xpath">//*[contains(@view-type, 'personal')]</fi:include>
           </fi:what>
        </fi:filter>
     </fi:filter-set>
    </cp:transformations>
   </cp:rule>
 </cp:ruleset>
</document-rule>
</ap-rules>
```

Example 4 – Creation of "Work" Contact View using a filter that utilizes the 'view-type' attribute

```
<?xml version="1.0" encoding="UTF-8"?>
<ap-rules xmlns="urn:oma:xml:xdm:ap"
    xmlns:cp="urn:ietf:params:xml:ns:common-policy"
    xmlns:ocp="urn:oma:xml:xdm:common-policy"
    xmlns:fi="urn:ietf:params:xml:ns:simple-filter">
<document-rule path="pcc">
 <cp:ruleset>
   <cp:rule id="WorkView">
     <cp:conditions>
         <cp:identity>
            <cp:one id="sip:joe.smith@example.com"/>
         </cp:identity>
      </cp:conditions>
    <cp:actions>
        <allow-retrieve/>
    </cp:actions>
    <cp:transformations>
      <fi:filter-set>
        <fi:ns-bindings>
          <fi:ns-binding prefix="pcc" urn="urn:oma:xml:cab:pcc"/>
        </fi:ns-bindings>
        <fi:filter id="WorkView">
          <fi:what>
            <fi:include type="xpath">//*[contains(@view-type, 'work')]</fi:include>
           </fi:what>
        </fi:filter>
     </fi:filter-set>
    </cp:transformations>
   </cp:rule>
 </cp:ruleset>
</document-rule>
</ap-rules>
```

Appendix C. 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:

- S-AB Application Usage
- S-PCC Application Usage
- S-CAB User Preferences Application Usage
- S-CAB S-AB Interworking Function Application Usage
- S-CAB S-PCC Interworking Function Application Usage
- S-CAB Indirect Update Object Application Usage
- S-CAB External Directories Search Application Usage
- S-CAB Communication History Application Usage

C.1 S-AB Application Usages for XDMS

Item	Function	Reference	Requirement
S-CAB_AB-XOP-S-001-M	Support S-AB Application Usage	5.1.1	S-CAB_AB-XOP-S-002-M and S-CAB_AB-XOP-S-003-M and S-CAB_AB-XOP-S-004-M and S-CAB_AB-XOP-S-005-M and S-CAB_AB-XOP-S-006-M and S-CAB_AB-XOP-S-007-M and S-CAB_AB-XOP-S-008-M and S-CAB_AB-XOP-S-009-M and S-CAB_AB-SEC-S-001-M and S-CAB_AB-SRC-S-001-M and S-CAB_AB-RHI-S-001-M and S-CAB_AB-FW-S-001-M
S-CAB_AB-XOP-S-002-M	Support S-AB Document structure	5.1.1.1	S-CAB_AB-XOP-S-001-M and XDM_Core-XOP-S-001-M
S-CAB_AB-XOP-S-003-M	Support Application Unique ID of S-AB Document	5.1.1.2	
S-CAB_AB-XOP-S-004-M	Support XML schema of S-AB Document	5.1.1.3	
S-CAB_AB-XOP-S-005-M	Support default name space of S-AB Document	5.1.1.4	
S-CAB_AB-XOP-S-006-M	Support MIME type of S-AB Document	5.1.1.5	
S-CAB_AB-XOP-S-007-M	Support validation constraints of S-AB Document	5.1.1.6	
S-CAB_AB-XOP-S-008-M	Support data semantics of S-AB Document	5.1.1.7	
S-CAB_AB-XOP-S-009-M	Support naming conventions for S-AB Document	5.1.1.8	

Item	Function	Reference	Requirement
S-CAB_AB-SEC-S-001-M	Support access permissions of AB Document	5.1.1.11	CAB_AB-XOP-S-001-M and XDM_Core-SEC-S-003-O
S-CAB_AB-SRC-S-001-M	Support access permissions of S-AB Document ent	5.1.1.12	S-CAB_AB-XOP-S-001-M XDM_Core-SEC-S-001-M and XDM_Core-SEC-S-002-O and XDM_Core-SEC-S-003-O and XDM_Core-SEC-S-005-O
S-CAB_AB-SRC-S-001-M	Support search capabilities for S-AB Document	5.1.1.13	S-CAB_AB-XOP-S-001-M and XDM_Core-SRC-S-001-O and XDM_Core-SRC-S-002-O
S-CAB_AB-RHI-S-001-M	Support Request History for S-AB Document	5.1.1.15	S-CAB_AB-XOP-S-001-M and XDM_Core-MHI-S-001-O and XDM_Core-RHI-S-001-O
S-CAB_AB-MHI-S-002-O	Support Modification History for S-AB Document	5.1.1.15	S-CAB_AB-XOP-S-001-M and XDM_Core-MHI-S-001-O
S-CAB_AB-FW-S-001-M	Support Forwarding for S-AB document	5.1.1.16	S-CAB_AB-XOP-S-001-M and XDM_Core-FWD-S-002-O and XDM_Core-FWD-S-003-O and XDM_Core-FWD-S-004-O and XDM_Core-FWD-S-005-O and XDM_Core-FWD-S-006-O and XDM_Core-FWD-S-007-O and XDM_Core-FWD-S-008-O
S-CAB_AB-SUB-S-001-M	Support Subscription to changes	5.1.1.12	S-CAB_AB-XOP-S-001-M and XDM-Core-SUB-S-001-0 and XDM-Core-SUB-S-002-0 and XDM-Core-SUB-S-004-O
S-CAB_AB-PRF-S-001-M	Support Management of XDM Preferences	5.1.1.14	S-CAB_AB-XOP-S-001-M and XDM_Core-PRF-S-001-0
S-CAB_AB-RES-S-001-M	Support Restore of S-AB Document	5.1.1.17	S-CAB_AB-XOP-S-001-M and XDM_Core-RES-S-001-O
S-CAB_AB-REF-S-001-O	Support Document Reference of S-AB Documents	5.1.1.18	S-CAB_AB-XOP-S-001-M and XDM_Core-REF-S-001-O and XDM_Core-REF-S-001-O
S-CAB_AB-DIFF-S-001-M	Support Differential Read and Write of S-AB Documents	5.1.1.19	S-CAB_AB-XOP-S-001-M and XDM_Core-DIFF-S-001-O and XDM_Core-DIFF-S-002-O and XDM_Core-DIFF-S-003-O and XDM_Core-DIFF-S-004-O
S-CAB_AB-DEL-S-001-M	Support Delete Operations of S-AB Documents	5.1.1.20	S-CAB_AB-XOP-S-001-M and XDM_Core-DEL-S-001-O

Table 3: SCR Table for S-CAB XDMS (S-AB)

C.2 S-AB Application Usage for XDMC

Item	Function	Reference	Requirement
S-CAB_AB-XOP-C-001-M	Support S-AB Application Usage	5.1.1	S-CAB_AB-XOP-C-002-M and S-CAB_AB-XOP-C-003-M and S-CAB_AB-XOP-C-004-M and S-CAB_AB-XOP-C-005-M and S-CAB_AB-XOP-C-006-M and S-CAB_AB-XOP-C-007-M and S-CAB_AB-XOP-C-008-M and S-CAB_AB-XOP-C-009-M and S-CAB_AB-ERR-C-001-M and S-CAB_AB-SEC-C-001-M and S-CAB_AB-SRC-C-001-M and S-CAB_AB-RHI-C-001-M and S-CAB_AB-FW-C-001-M
S-CAB_AB-XOP-C-002-M	Support S-AB Document structure	5.1.1.1	S-CAB_AB-XOP-C-001-M and XDM_Core-XOP-C-003-M
S-CAB_AB-XOP-C-003-M	Support Application Unique ID of S-AB Document	5.1.1.2	
S-CAB_AB-XOP-C-004-M	Support XML schema of S-AB Document	5.1.1.3	
S-CAB_AB-XOP-C-005-M	Support default name space of S-AB Document	5.1.1.4	
S-CAB_AB-XOP-C-006-M	Support MIME type of S-AB Document	5.1.1.5	
S-CAB_AB-XOP-C-007-M	Support validation constraints of S-AB Document	5.1.1.6	
S-CAB_AB-XOP-C-008-M	Support data semantics of S-AB Document	5.1.1.7	
S-CAB_AB-XOP-C-009-M	Support naming conventions for S-AB Document	5.1.1.8	
S-CAB_AB-SEC-C-001-M	Support access permissions of S-AB Document	5.1.1.11	S-CAB_AB-XOP-C-001-M and XDM_Core-SEC-C-005-O
S-CAB_AB-SRC-C-001-M	Support search capabilities for S-AB Document	5.1.1.13	S-CAB_AB-XOP-C-001-M and XDM_Core-SRC-C-001-O and XDM_Core-SRC-C-002-O
S-CAB_AB-RHI-C-001-M	Support Request History for S-AB Document	5.1.1.15	S-CAB_AB-XOP-C-001-M and XDM_ Core-RHI-C-001-O
S-CAB_AB-MHI-C-002-O	Support Modification History for S-AB Document	5.1.1.15	S-CAB_AB-XOP-C-001-M and XDM_ Core-MHI-C-001-O
S-CAB_AB-FW-C-001-M	Support Forwarding for S-AB Document	5.1.1.16	S-CAB_AB-XOP-C-001-M and XDM_Core-FWD-C-001-O and XDM_Core-FWD-C-001-O

Item	Function	Reference	Requirement
S-CAB_AB-SUB-C-001-M	Support Subscription to changes	5.1.1.12	S-CAB_AB-XOP-C-001-M and XDM-Core-SUB-C-001-0 and XDM-Core-SUB-C-002-0 and XDM-Core-SUB-C-004-O
S-CAB_AB-PRF-C-001-M	Support Management of XDM Preferences	5.1.1.14	S-CAB_AB-XOP-C-001-M and XDM_Core-PRF-C-001-O
S-CAB_AB-RES-C-001-M	Support Restore of S-AB Documents	5.1.1.17	S-CAB_AB-XOP-C-001-M and XDM_Core-RES-C-001-O
S-CAB_AB-REF-C-001-O	Support Document Reference of S-AB Documents	5.1.1.18	S-CAB_AB-XOP-C-001-M and XDM_Core-REF-C-001-O and XDM_Core-REF-C-001-O
S-CAB_AB-DIFF-C-001-M	Support Differential Read and Write of S-AB Documents	5.1.1.19	S-CAB_AB-XOP-C-001-M and XDM_Core-DIFF-C-001-O and XDM_Core-DIFF-C-002-O and XDM_Core-DIFF-C-003-O and XDM_Core-DIFF-C-004-O
S-CAB_AB-DEL-C-001-M	Support Delete Operations of S-AB Documents	5.1.1.20	S-CAB_AB-XOP-C-001-M and XDM_Core-DEL-C-001-O

Table 4: SCR Table for S-CAB XDMC (S-AB)

C.3 S-AB Application Usage for XDM Agent

Item	Function	Reference	Requirement
S-CAB_AB-XOP-A-001-M	Support S-AB Application Usage	5.1.1	S-CAB_AB-XOP-A-002-M and S-CAB_AB-XOP-A-003-M and S-CAB_AB-XOP-A-004-M and S-CAB_AB-XOP-A-005-M and S-CAB_AB-XOP-A-006-M and S-CAB_AB-XOP-A-007-M and S-CAB_AB-XOP-A-008-M and S-CAB_AB-XOP-A-009-M and S-CAB_AB-ERR-A-001-M and S-CAB_AB-SEC-A-001-M and S-CAB_AB-SRC-A-001-M and S-CAB_AB-RHI-A-001-M and S-CAB_AB-FW-A-001-M
S-CAB_AB-XOP-A-002-M	Support S-AB Document structure	5.1.1.1	S-CAB_AB-XOP-A-001-M and XDM_Core-XOP-A-003-M
S-CAB_AB-XOP-A-003-M	Support Application Unique ID of S-AB Document	5.1.1.2	
S-CAB_AB-XOP-A-004-M	Support XML schema of S-AB Document	5.1.1.3	
S-CAB_AB-XOP-A-005-M	Support default name space of S-AB Document	5.1.1.4	
S-CAB_AB-XOP-A-006-M	Support MIME type of S-AB Document	5.1.1.5	

Item	Function	Reference	Requirement
S-CAB_AB-XOP-A-007-M	Support validation constraints of S-AB Document	5.1.1.6	
S-CAB_AB-XOP-A-008-M	Support data semantics of S-AB Document	5.1.1.7	
S-CAB_AB-XOP-A-009-M	Support naming conventions for S-AB Documents	5.1.1.8	
S-CAB_AB-SEC-A-001-M	Support access permissions of S-AB Documents	5.1.1.11	S-CAB_AB-XOP-A-001-M and XDM_Core-SEC-A-004-O
S-CAB_AB-SRC-A-001-M	Support search capabilities for S-AB Documents	5.1.1.13	S-CAB_AB-XOP-A-001-M and XDM_Core-SRC-A-001-O and XDM_Core-SRC-A-002-O and XDM_Core-SRC-A-003-O
S-CAB_AB-RHI-A-001-M	Support Request History for S-AB Documents	5.1.1.15	S-CAB_AB-XOP-A-001-M and XDM_ Core-RHI-A-001-O
S-CAB_AB-MHI-A-002-O	Support Modification History for S-AB Documents	5.1.1.15	S-CAB_AB-XOP-A-001-M and XDM_ Core-MHI-A-001-O
S-CAB_AB-FW-A-001-M	Support Forwarding for S-AB Documents	5.1.1.16	S-CAB_AB-XOP-A-001-M and XDM_Core-FWD-C-001-O and XDM_Core-FWD-C-001-O
S-CAB_AB-SUB-A-001-M	Support Subscription to changes	5.1.1.12	S-CAB_AB-XOP-A-001-M and XDM-Core-SUB-A-001-O and XDM-Core-SUB-A-002-O and XDM-Core-SUB-A-004-O
S-CAB_AB-PRF-A-001-M	Support Management of XDM Preferences	5.1.1.14	S-CAB_AB-XOP-A-001-M and XDM_Core-PRF-A-001-O
S-CAB_AB-RES-A-001-M	Support Restore of S-AB Documents	5.1.1.17	S-CAB_AB-XOP-A-001-M and XDM_Core-RES-A-001-O
S-CAB_AB-REF-A-001-O	Support Document Reference of S-AB Documents	5.1.1.18	S-CAB_AB-XOP-A-001-M and XDM_Core-REF-A-001-O and XDM_Core-REF-A-001-O
S-CAB_AB-DIFF-A-001-M	Support Differential Read and Write of S-AB Documents	5.1.1.19	S-CAB_AB-XOP-A-001-M and XDM_Core-DIFF-A-001-O and XDM_Core-DIFF-A-002-O and XDM_Core-DIFF-A-003-O and XDM_Core-DIFF-A-004-O
S-CAB_AB-DEL-A-001-M	Support Delete Operations of S-AB Documents	5.1.1.20	S-CAB_AB-XOP-A-001-M and XDM_Core-DEL-A-001-O

Table 5: SCR Table for S-CAB XDMA (S-AB)

C.4 S-PCC Application Usage for XDMS

Item	Function	Reference	Requirement
S-CAB_PCC-XOP-S-001-M	Support S-PCC Application Usages	5.2.1	S-CAB_PCC-XOP-S-002-M and S-CAB_PCC-XOP-S-003-M and S-CAB_PCC-XOP-S-004-M and S-CAB_PCC-XOP-S-005-M and S-CAB_PCC-XOP-S-006-M and S-CAB_PCC-XOP-S-007-M and S-CAB_PCC-XOP-S-008-M and S-CAB_PCC-XOP-S-009-M and S-CAB_PCC-SEC-S-001-M and S-CAB_PCC-SRC-S-001-M and S-CAB_PCC-PRF-S-001-M and S-CAB_PCC-RHI-S-001-M and S-CAB_PCC-FW-S-001-M
S-CAB_PCC-XOP-S-002-M	Support S-PCC Document structure	5.2.1.1	S-CAB_PCC-XOP-S-001-M and XDM_Core-XOP-S-001-M
S-CAB_PCC-XOP-S-003-M	Support Application Unique ID of S-PCC Document	5.2.1.2	
S-CAB_PCC-XOP-S-004-M	Support XML schema of S-PCC Document	5.2.1.3	
S-CAB_PCC-XOP-S-005-M	Support default name space of S-PCC Document	5.2.1.4	
S-CAB_PCC-XOP-S-006-M	Support MIME type of S-PCC Document	5.2.1.5	
S-CAB_PCC-XOP-S-007-M	Support validation constraints of S-PCC Document	5.2.1.6	
S-CAB_PCC-XOP-S-008-M	Support data semantics of S-PCC Document	5.2.1.7	
S-CAB_PCC-XOP-S-009-M	Support naming conventions for S-PCC Document	5.2.1.8	
S-CAB_PCC-SEC-S-001-M	Support access permissions of S-PCC Document	5.2.1.11	S-CAB_PCC-XOP-S-001-M and XDM_Core-SEC-S-001-M and XDM_Core-SEC-S-002-O and XDM_Core-SEC-S-003-O and XDM_Core-SEC-S-005-O
S-CAB_PCC-SRC-S-001-M	Support search capabilities for PCC Document	5.2.1.13	S-CAB_PCC-XOP-S-001-M and XDM_Core-SRC-S-001-O and XDM_Core-SRC-S-002-O and XDM_Core-SRC-S-003-O
S-CAB_PCC-PRF-S-001-M	Support XDM Preference Document for PCC Document	5.2.1.14	S-CAB_PCC-XOP-S-001-M and XDM_Core-PRF-S-001-O

Item	Function	Reference	Requirement
S-CAB_PCC-RHI-S-001-M	Support Request History Information for PCC Document	5.2.1.15	S-CAB_PCC-XOP-S-001-M and XDM_Core-RHI-S-001-O
S-CAB_PCC-MHI-S-001-O	Support Modification History Information for S-PCC Document	5.2.1.15	S-CAB_PCC-XOP-S-001-M and XDM_Core-MHI-S-001-O
S-CAB_PCC-FW-S-001-M	Support Forwarding for S-PCC Document	5.1.1.16	S-CAB_PCC-XOP-S-001-M and XDM_Core-FWD-S-002-O and XDM_Core-FWD-S-003-O and XDM_Core-FWD-S-004-O and XDM_Core-FWD-S-005-O and XDM_Core-FWD-S-006-O and XDM_Core-FWD-S-007-O and XDM_Core-FWD-S-008-O
S-CAB_PCC-SUB-S-001-M	Support Subscription to changes	5.2.1.12	S-CAB_PCC-XOP-S-001-M and XDM-Core-SUB-S-001-0 and XDM-Core-SUB-S-002-0 and XDM-Core-SUB-S-004-O
S-CAB_PCC-RES-S-001-M	Support Restore of S-PCC Documents	5.2.1.17	S-CAB_PCC-XOP-S-001-M and XDM_Core-RES-S-001-O
S-CAB_PCC-REF-S-001-O	Support Document Reference of S-PCC Documents	5.2.1.18	S-CAB_PCC-XOP-S-001-M and XDM_Core-REF-S-001-O and XDM_Core-REF-S-001-O
S-CAB_PCC-DIFF-S-001-M	Support Differential Read and Write of S-PCC Documents	5.2.1.19	S-CAB_PCC-XOP-S-001-M and XDM_Core-DIFF-S-001-O and XDM_Core-DIFF-S-002-O and XDM_Core-DIFF-S-003-O and XDM_Core-DIFF-S-004-O
S-CAB_PCC-DEL-S-001-M	Support Delete Operations of S-PCC Documents	5.2.1.20	S-CAB_PCC-XOP-S-001-M and XDM_Core-DEL-S-001-O

Table 6: SCR Table for S-CAB XDMS (S-PCC)

C.5 S-PCC Application Usage for XDMC

Item	Function	Reference	Requirement
S-CAB_PCC-XOP-C-001-M	Support S-PCC Application Usages	5.2.1	S-CAB_PCC-XOP-C-002-M and S-CAB_PCC-XOP-C-003-M and S-CAB_PCC-XOP-C-004-M and S-CAB_PCC-XOP-C-005-M and S-CAB_PCC-XOP-C-006-M and S-CAB_PCC-XOP-C-007-M and S-CAB_PCC-XOP-C-008-M and S-CAB_PCC-XOP-C-009-M and S-CAB_PCC-SEC-C-001-M and S-CAB_PCC-SRC-C-001-M and S-CAB_PCC-PRF-C-001-M and S-CAB_PCC-RHI-C-001-M
S-CAB_PCC-XOP-C-002-M	Support S-PCC Document structure	5.2.1.1	S-CAB_PCC-XOP-C-001-M and XDM_Core-XOP-C-003-M

Item	Function	Reference	Requirement
S-CAB_PCC-XOP-C-003-M	Support Application Unique ID of S-PCC Document	5.2.1.2	
S-CAB_PCC-XOP-C-004-M	Support XML schema of S-PCC Document	5.2.1.3	
S-CAB_PCC-XOP-C-005-M	Support default name space of S-PCC Document	5.2.1.4	
S-CAB_PCC-XOP-C-006-M	Support MIME type of S-PCC Document	5.2.1.5	
S-CAB_PCC-XOP-C-007-M	Support validation constraints of S-PCC Document	5.2.1.6	
S-CAB_PCC-XOP-C-008-M	Support data semantics of S-PCC Document	5.2.1.7	
S-CAB_PCC-XOP-C-009-M	Support naming conventions for S-PCC Document	5.2.1.8	
S-CAB_PCC-SEC-C-001-M	Support access permissions of S-PCC Document	5.2.1.11	S-CAB_PCC-XOP-C-001-M and XDM_Core-SEC-C-005-O
S-CAB_PCC-SRC-C-001-M	Support search capabilities for S-PCC Document	5.2.1.13	S-CAB_PCC-XOP-C-001-M and XDM_Core-SRC-C-001-O and XDM_Core-SRC-C-002-O and XDM_Core-SRC-C-003-O
S-CAB_PCC-PRF-C-001-M	Support XDM Preference Document for S-PCC Document	5.1.1.14	S-CAB_PCC-XOP-C-001-M and XDM_Core-PRF-C-001-O
S-CAB_PCC-RHI-C-001-M	Support Request History Information for S-PCC Document	5.2.1.15	S-CAB_PCC-XOP-C-001-M and XDM_Core-RHI-C-001-O
S-CAB_PCC-MHI-C-001-O	Support Modification History Information for S-PCC Document	5.2.1.15	S-CAB_PCC-XOP-C-001-M and XDM_Core-MHI-C-001-O
S-CAB_PCC-SUB-C-001-M	Support Subscription to changes	5.2.1.12	S-CAB_PCC-XOP-C-001-M and XDM-Core-SUB-C-001-0 and XDM-Core-SUB-C-002-0 and XDM-Core-SUB-C-004-O
S-CAB_PCC-FW-C-001-M	Support forwarding for S-PCC Document	5.2.1.16	S-CAB_PCC-XOP-C-001-M and XDM_Core-FWD-C-001-O and XDM_Core-FWD-C-002-O
S-CAB_PCC-RES-C-001-M	Support Restore of a S-PCC Document	5.2.1.17	S-CAB_PCC-XOP-C-001-M and XDM_Core-RES-C-001-O
S-CAB_PCC-REF-C-001-O	Support Document Reference of S-PCC Documents	5.2.1.18	S-CAB_PCC-XOP-C-001-M and XDM_Core-REF-C-001-O and XDM_Core-REF-C-001-O
S-CAB_PCC-DIFF-C-001-M	Support Differential Read and Write of S-PCC Documents	5.2.1.19	S-CAB_PCC-XOP-C-001-M and XDM_Core-DIFF-C-001-O and XDM_Core-DIFF-C-002-O and XDM_Core-DIFF-C-003-O and XDM_Core-DIFF-C-004-O

Item	Function	Reference	Requirement
S-CAB_PCC-DEL-C-001-M	Support Delete Operations of S-PCC Documents	5.2.1.20	S-CAB_PCC-XOP-C-001-M and XDM_Core-DEL-C-001-O

Table 7: SCR Table for S-CAB XDMS (S-PCC)

C.6 S-PCC Application Usage for XDM Agent

Item	Function	Reference	Requirement
S-CAB_PCC-XOP-A-001-M	Support S-PCC Application Usage	5.2.1	S-CAB_PCC-XOP-A-002-M and S-CAB_PCC-XOP-A-003-M and S-CAB_PCC-XOP-A-004-M and S-CAB_PCC-XOP-A-005-M and S-CAB_PCC-XOP-A-006-M and S-CAB_PCC-XOP-A-007-M and S-CAB_PCC-XOP-A-008-M and S-CAB_PCC-XOP-A-009-M and S-CAB_PCC-SEC-A-001-M and S-CAB_PCC-SRC-A-001-M and S-CAB_PCC-PRF-A-001-M and S-CAB_PCC-RHI-A-001-M and S-CAB_PCC-FW-A-001-M
S-CAB_PCC-XOP-A-002-M	Support S-PCC Document structure	5.2.1.1	S-CAB_PCC-XOP-A-001-M and XDM_Core-XOP-A-003-M
S-CAB_PCC-XOP-A-003-M	Support Application Unique ID of S-PCC Document	5.2.1.2	
S-CAB_PCC-XOP-A-004-M	Support XML schema of S-PCC Document	5.2.1.3	
S-CAB_PCC-XOP-A-005-M	Support default name space of S-PCC Document	5.2.1.4	
S-CAB_PCC-XOP-A-006-M	Support MIME type of S-PCC Document	5.2.1.5	
S-CAB_PCC-XOP-A-007-M	Support validation constraints of S-PCC Document	5.2.1.6	
S-CAB_PCC-XOP-A-008-M	Support data semantics of S-PCC Document	5.2.1.7	
S-CAB_PCC-XOP-A-009-M	Support naming conventions for S-PCC Document	5.2.1.8	
S-CAB_PCC-SEC-A-001-M	Support access permissions of S-PCC Document	5.2.1.11	S-CAB_PCC-XOP-A-001-M and XDM_Core-SEC-A-004-O
S-CAB_PCC-SRC-A-001-M	Support search capabilities for S-PCC Document	5.2.1.13	S-CAB_PCC-XOP-A-001-M and XDM_Core-SRC-A-001-O and XDM_Core-SRC-A-002-O and XDM_Core-SRC-A-003-O

Item	Function	Reference	Requirement
S-CAB_PCC-PRF-A-001-M	Support XDM Preferences Document for S-PCC Document	5.2.1.14	S-CAB_PCC-XOP-A-001-M and XDM_Core-PRF-A-001-O
S-CAB_PCC-RHI-A-001-M	Support Request History Information Documents for S-PCC Document	5.1.1.15	S-CAB_PCC-XOP-A-001-M and XDM_ Core-RHI-A-001-O
S-CAB_PCC-MHI-A-001-O	Support Modification History Information for S-PCC Document	5.2.1.15	S-CAB_PCC-XOP-A-001-M and XDM_Core-MHI-A-001-O
S-CAB_PCC-FW-A-001-M	Support forwarding for S-PCC Document	5.2.1.16	S-CAB_PCC-XOP-A-001-M and XDM_Core-FWD-C-001-O and XDM_Core-FWD-C-002-O
S-CAB_PCC-SUB-A-001-M	Support Subscription to changes	5.2.1.12	S-CAB_PCC-XOP-A-001-M and XDM-Core-SUB-A-001-O and XDM-Core-SUB-A-002-O and XDM-Core-SUB-A-004-O
S-CAB_PCC-RES-A-001-M	Support Restore of S-PCC Documents	5.2.1.17	S-CAB_PCC-XOP-A-001-M and XDM_Core-RES-A-001-O
S-CAB_PCC-REF-A-001-O	Support Document Reference of S-PCC Documents	5.2.1.18	S-CAB_PCC-XOP-A-001-M and XDM_Core-REF-A-001-O and XDM_Core-REF-A-001-O
S-CAB_PCC-DIFF-A-001-M	Support Differential Read and Write of S-PCC Documents	5.2.1.19	S-CAB_PCC-XOP-A-001-M and XDM_Core-DIFF-A-001-O and XDM_Core-DIFF-A-002-O and XDM_Core-DIFF-A-003-O and XDM_Core-DIFF-A-004-O
S-CAB_PCC-DEL-A-001-M	Support Delete Operations of S-PCC Documents	5.2.1.20	S-CAB_PCC-XOP-A-001-M and XDM_Core-DEL-A-001-O

Table 8: SCR Table for S-CAB XDMA (S-PCC)

C.7 S-CAB User Preferences Application Usage for XDMS

Item	Function	Reference	Requirement
S-CAB_UP-XOP-S-001-M	Support S-CAB User Preferences Application Usage	5.3.1	S-CAB_UP-XOP-S-002-M and S-CAB_UP-XOP-S-003-M and S-CAB_UP-XOP-S-004-M and S-CAB_UP-XOP-S-005-M and S-CAB_UP-XOP-S-006-M and S-CAB_UP-XOP-S-007-M and S-CAB_UP-XOP-S-008-M and S-CAB_UP-XOP-S-009-M and S-CAB_UP-SEC-S-001-M
S-CAB_UP-XOP-S-002-M	Support S-CAB User Preferences Document structure	5.3.1.1	S-CAB_UP-XOP-S-001-M and XDM_Core-XOP-S-001-M
S-CAB_UP-XOP-S-003-M	Support Application Unique ID of S-CAB User Preferences Document	5.3.1.2	

Item	Function	Reference	Requirement
S-CAB_UP-XOP-S-004-M	Support XML schema of S-CAB User Preferences Document	5.3.1.3	
S-CAB_UP-XOP-S-005-M	Support default name space of S-CAB User Preferences Document	5.3.1.4	
S-CAB_UP-XOP-S-006-M	Support MIME type of S-CAB User Preferences Document	5.3.1.5	
S-CAB_UP-XOP-S-007-M	Support validation constraints of S-CAB User Preferences Document	5.3.1.6	
S-CAB_UP-XOP-S-008-M	Support data semantics of S-CAB User Preferences Document	5.3.1.7	
S-CAB_UP-XOP-S-009-M	Support naming conventions for S-CAB User Preferences Document	5.3.1.8	
S-CAB_UP-SEC-S-001-M	Support access permissions of S-CAB User Preferences Document	5.3.1.11	S-CAB_UP-XOP-S-001-M and XDM_Core-SEC-S-003-O

Table 9: SCR Table for S-CAB XDMS (User Prefs)

C.8 S-CAB User Preference Application Usage for XDMC

Item	Function	Reference	Requirement
S-CAB_UP-XOP-C-001-M	Support S-CAB User Preferences Application Usage	5.3.1	S-CAB_UP-XOP-C-002-M and S-CAB_UP-XOP-C-003-M and S-CAB_UP-XOP-C-004-M and S-CAB_UP-XOP-C-005-M and S-CAB_UP-XOP-C-006-M and S-CAB_UP-XOP-C-007-M and S-CAB_UP-XOP-C-008-M and S-CAB_UP-XOP-C-009-M and S-CAB_UP-SEC-C-001-M
S-CAB_UP-XOP-C-002-M	Support S-CAB User Preferences Document structure	5.3.1.1	S-CAB_UP-XOP-C-001-M and XDM_Core-XOP-C-003-M
S-CAB_UP-XOP-C-003-M	Support Application Unique ID of S-CAB User Preferences Document	5.3.1.2	
S-CAB_UP-XOP-C-004-M	Support XML schema of S-CAB User Preferences Document	5.3.1.3	
S-CAB_UP-XOP-C-005-M	Support default name space of S-CAB User Preferences Document	5.3.1.4	

Item	Function	Reference	Requirement
S-CAB_UP-XOP-C-006-M	Support MIME type of S-CAB User Preferences Document	5.3.1.5	
S-CAB_UP-XOP-C-007-M	Support validation constraints of S-CAB User Preferences Document	5.3.1.6	
S-CAB_UP-XOP-C-008-M	Support data semantics of S-CAB User Preferences Document	5.3.1.7	
S-CAB_UP-XOP-C-009-M	Support naming conventions for S-CAB User Preferences Document	5.3.1.8	
S-CAB_UP-SEC-C-001-M	Support access permissions of S-CAB User Preferences Document	5.3.1.11	
S-CAB_UP-SUB-C-001-O	Support Subscription to changes	5.3.1.12	S-CAB_UP-XOP-C-001-M and XDM-Core-SUB-C-001-O and XDM-Core-SUB-C-002-O and XDM-Core-SUB-C-004-O

Table 10: SCR Table for S-CAB XDMC (User Prefs)

C.9 S-CAB User Preference Application Usage for XDM Agent

Item	Function	Reference	Requirement
S-CAB_UP-XOP-A-001-M	Support S-CAB User Preferences Application Usage	5.3.1	S-CAB_UP-XOP-A-002-M and S-CAB_UP-XOP-A-003-M and S-CAB_UP-XOP-A-004-M and S-CAB_UP-XOP-A-005-M and S-CAB_UP-XOP-A-006-M and S-CAB_UP-XOP-A-007-M and S-CAB_UP-XOP-A-008-M and S-CAB_UP-XOP-A-009-M and S-CAB_UP-SEC-A-001-M
S-CAB_UP-XOP-A-002-M	Support S-CAB User Preferences Document structure	5.3.1.1	S-CAB_UP-XOP-A-001-M and XDM_Core-XOP-A-003-M
S-CAB_UP-XOP-A-003-M	Support Application Unique ID of S-CAB User Preferences Document	5.3.1.2	
S-CAB_UP-XOP-A-004-M	Support XML schema of S-CAB User Preferences Document	5.3.1.3	
S-CAB_UP-XOP-A-005-M	Support default name space of S-CAB User Preferences Document	5.3.1.4	

Item	Function	Reference	Requirement
S-CAB_UP-XOP-A-006-M	Support MIME type of S-CAB User Preferences Document	5.3.1.5	
S-CAB_UP-XOP-A-007-M	Support validation constraints of S-CAB User Preferences Document	5.3.1.6	
S-CAB_UP-XOP-A-008-M	Support data semantics of S-CAB User Preferences Document	5.3.1.7	
S-CAB_UP-XOP-A-009-M	Support naming conventions for S-CAB User Preferences Document	5.3.1.8	
S-CAB_UP-SEC-A-001-M	Support access permissions of S-CAB User Preferences Document	5.3.1.11	S-CAB_UP-XOP-A-001-M and XDM_Core-SEC-A-004-O
S-CAB_UP-SUB-A-001-M	Support Subscription to changes	5.3.1.12	S-CAB_UP-XOP-A-001-M and XDM-Core-SUB-A-001-O and XDM-Core-SUB-A-002-O and XDM-Core-SUB-A-004-0

Table 11: SCR Table for S-CAB XDMA (User Prefs)

C.10 S-CAB S-AB Interworking Function Application Usage for XDMS

Item	Function	Reference	Requirement
S-CAB_AB_IWF-IMP-S-001-M	Support Import from External Non-CAB Systems	5.4.1.20	XDM_Core-XDCP-S-001-0
S-CAB_AB_IWF-EXP-S-001-M	Support Export to External Non-CAB Systems	5.4.1.21	XDM_Core-XDCP-S-001-0
S-CAB_AB_IWF_XOP-S-003-M	Support Application Unique ID of S-AB Interworking Function	5.4.1.2	
S-CAB_ AB_IWF -RI-S-001-M	Support Resource Interdependencies of S-AB Interworking Function	5.4.1.10	S-CAB_AB-XOP-A-001-M
S-CAB_ AB_IWF -SEC-S-001-M	Support access permissions of Import from External Non-CAB System	5.4.1.11	S-CAB_AB_IWF-IMP-S-001-M
S-CAB_ AB_IWF -SEC-S-002-M	Support access permissions of Export to External Non-CAB System	5.4.1.11	S-CAB_AB_IWF-EXP-S-001-M

Table 12: SCR Table for S-CAB XDMS (S-AB interworking)

C.11 S-CAB S-AB Interworking Function Application Usage for XDMC

Item	Function	Reference	Requirement
S-CAB_AB_IWF-IMP-C-001-M	Support Import from External Non-CAB Systems	5.4.1.20	
S-CAB_AB_IWF-EXP-C -001-M	Support Export to External Non-CAB Systems	5.4.1.21	
S-CAB_AB_IWF_XOP-C-003-M	Support Application Unique ID of S-AB Interworking Function	5.4.1.2	

Table 13: SCR Table for S-CAB XDMC (S-AB interworking)

C.12 S-CAB S-AB Interworking Function Application Usage for XDM Agent

Item	Function	Reference	Requirement
S-CAB_AB_IWF-IMP-A-001-M	Support Import from External Non-CAB Systems	5.4.1.20	
S-CAB_AB_IWF-EXP-A -001-M	Support Export to External Non-CAB Systems	5.4.1.21	
S-CAB_AB_IWF-XOP-A-003-M	Support Application Unique ID of S-AB Interworking Function	5.4.1.2	

Table 14: SCR Table for S-CAB XDMA (S-AB interworking)

C.13 S-CAB S-PCC Interworking Function Application Usage for XDMS

Item	Function	Reference	Requirement
S-CAB_PCC_IWF-IMP-S-001-M	Support Import from External Non-CAB Systems	5.4.1.20	XDM_Core-XDCP-S-001-0
S-CAB_PCC_IWF-EXP-S-001-M	Support Export to External Non-CAB Systems	5.4.1.21	XDM_Core-XDCP-S-001-0
S-CAB_PCC_IWF-XOP-S-003-M	Support Application Unique ID of S-PCC Interworking Function	5.4.1.2	
S-CAB_ PCC_IWF -RI-S-001-M	Support Resource Interdependencies of S-PCC Interworking Function	5.4.1.10	S-CAB_PCC-XOP-A-001-M
S-CAB_ PCC_IWF -SEC-S-001-M	Support access permissions of Import from External Non-CAB System	5.4.1.11	S-CAB_PCC_IWF-IMP-S-001-M

Item	Function	Reference	Requirement
S-CAB_ PCC_IWF -SEC-S-002-M	Support access permissions of Export to External Non-CAB System	5.4.1.11	S-CAB_PCC_IWF-EXP-S-001-M

Table 15: SCR Table for S-CAB XDMS (S-PCC interworking)

C.14 S-CAB S-PCC Interworking Function Application Usage for XDMC

Item	Function	Reference	Requirement
S-CAB_PCC_IWF-IMP-C-001-M	Support Import from External Non-CAB Systems	5.4.1.20	
S-CAB_PCC_IWF-EXP-C -001-M	Support Export to External Non-CAB Systems	5.4.1.21	
S-CAB_PCC_IWF-XOP-C-003-M	Support Application Unique ID of S-PCC Interworking Function	5.4.1.2	

Table 16: SCR Table for S-CAB XDMC (S-PCC interworking)

C.15 S-CAB S-PCC Interworking Function Application Usage for XDM Agent

Item	Function	Reference	Requirement
S-CAB_PCC_IWF-IMP-A-001-M	Support Import from External Non-CAB Systems	5.4.1.20	
S-CAB_PCC_IWF-EXP-A -001-M	Support Export to External Non-CAB Systems	5.4.1.21	
S-CAB_PCC_IWF_XOP-A-003-M	Support Application Unique ID of S-PCC Interworking Function	5.4.1.2	

Table 17: SCR Table for S-CAB XDMA (S-PCC interworking)

C.16 S-CAB Indirect Update Object Application Usage for XDMS

Item	Function	Reference	Requirement
S-CAB_IUO-XOP-S-001-M	Support S-CAB Indirect Update Object Application Usage	5.5.1	S-CAB_IUO-XOP-S-002-M and S-CAB_IUO-XOP-S-003-M and S-CAB_IUO-XOP-S-004-M and S-CAB_IUO-XOP-S-005-M and S-CAB_IUO-XOP-S-006-M and S-CAB_IUO-XOP-S-008-M and S-CAB_IUO-SEC-S-001-M

Item	Function	Reference	Requirement
S-CAB_IUO-XOP-S-002-M	Support Indirect Update Object Document structure	5.5.1.1	S-CAB_IOU-XOP-S-001-M and XDM_Core-XOP-S-001-M
S-CAB_IUO-XOP-S-003-M	Support Application Unique ID of Indirect Update Object	5.5.1.2	
S-CAB_IUO-XOP-S-004-M	Support XML schema of Indirect Update Object Document	5.5.1.3	
S-CAB_IUO-XOP-S-005-M	Support default name space of Indirect Update Object Document	5.5.1.4	
S-CAB_IUO-XOP-S-006-M	Support MIME type of Indirect Update Object Document	5.5.1.5	
S-CAB_IUO-XOP-S-008-M	Support data semantics of Indirect Update Object Document	5.5.1.7	
S-CAB_IUO-SEC-S-001-M	Support access permissions of Indirect Update Object Document	5.5.1.11	S-CAB_IUO-XOP-S-001-M and XDM_Core-SEC-S-003-O
S-CAB_IUO-RI-S-001-M	Support Resource Interdependencies of Indirect Update Object Document	5.5.1.10	S-CAB_IUO-XOP-S-001-M and S-CAB_PCC-XOP-A-001-M and S-CAB_AB-XOP-A-001-M

Table 18: SCR Table for S-CAB XDMS (S-CAB IUO)

C.17 S-CAB Indirect Update Object Application Usage for XDMC

Item	Function	Reference	Requirement
S-CAB_IUO-XOP-C-001-M	Support S-CAB Indirect Update Object Application Usage	5.5.1	S-CAB_IUO-XOP-C-002-M and S-CAB_IUO-XOP-C-003-M and S-CAB_IUO-XOP-C-004-M and S-CAB_IUO-XOP-C-005-M and S-CAB_IUO-XOP-C-006-M and S-CAB_IUO-XOP-C-007-M and S-CAB_IUO-XOP-C-008-M and S-CAB_IUO-RI-C-001-M
S-CAB_IUO-XOP-C-002-M	Support Indirect Update Object Document structure	5.5.1.1	S-CAB_IUO-XOP-C-001-M and XDM_Core-XOP-C-003-M
S-CAB_IUO-XOP-C-003-M	Support Application Unique ID of Indirect Update Object Document	5.5.1.2	
S-CAB_IUO-XOP-C-004-M	Support XML schema of Indirect Update Object Document	5.5.1.3	

Item	Function	Reference	Requirement
S-CAB_IUO-XOP-C-005-M	Support default name space of Indirect Update Object Document	5.5.1.4	
S-CAB_IUO-XOP-C-006-M	Support MIME type of Indirect Update Object Document	5.5.1.5	
S-CAB_IUO-XOP-C-008-M	Support data semantics of Indirect Update Object Document	5.5.1.7	
S-CAB_IUO-RI-C-001-M	Support Resource Interdependencies of Indirect Update Object Document	5.5.1.10	S-CAB_IUO-XOP-C-001-M and S-CAB_PCC-XOP-C-001-M and S-CAB_AB-XOP-C-001-M

Table 19: SCR Table for S-CAB XDMC (S-CAB IUO)

C.18 S-CAB Indirect Update Object Application Usage for XDM Agent

Item	Function	Reference	Requirement
S-CAB_IUO-XOP-A-001-M	Support S-CAB Indirect Update Object Application Usage	5.5.1	S-CAB_IUO-XOP-A-002-M and S-CAB_IUO-XOP-A-003-M and S-CAB_IUO-XOP-A-004-M and S-CAB_IUO-XOP-A-005-M and S-CAB_IUO-XOP-A-006-M and S-CAB_IUO-XOP-A-007-M and S-CAB_IUO-XOP-A-008-M and
S-CAB_IUO-XOP-A-002-M	Support Indirect Update Object Document structure	5.5.1.1	S-CAB_IUO-XOP-A-001-M and XDM_Core-XOP-A-003-M
S-CAB_IUO-XOP-A-003-M	Support Application Unique ID of Indirect Update Object Document	5.5.1.2	
S-CAB_IUO-XOP-A-004-M	Support XML schema of Indirect Update Object Document	5.5.1.3	
S-CAB_IUO-XOP-A-005-M	Support default name space of Indirect Update Object Document	5.5.1.4	
S-CAB_IUO-XOP-A-006-M	Support MIME type of Indirect Update Object Document	5.5.1.5	
S-CAB_IUO-XOP-A-008-M	Support data semantics of Indirect Update Object Document	5.5.1.7	
S-CAB_IUO-RI-A-001-M	Support Resource Interdependencies of Indirect Update Object Document	5.5.1.10	S-CAB_IUO-XOP-A-001-M and S-CAB_PCC-XOP-A-001-M and S-CAB_AB-XOP-A-001-M

Table 20: SCR Table for S-CAB XDMA (S-CAB IUO)

C.19 S-CAB External Directories Search Application Usage for XDMS

Item	Function	Reference	Requirement
S-CAB_EDS-XOP-S-002-M	Support S-PCC Document structure	5.6.1.1	S-CAB_EDS-SRC-S-001-M
S-CAB_EDS-XOP-S-003-M	Support Application Unique ID of S-CAB external directories search request	5.6.1.2	S-CAB_EDS-SRC-S-001-M
S-CAB_EDS-XOP-S-004-M	Support XML schema of S-PCC Document	5.6.1.3	S-CAB_EDS-SRC-S-001-M
S-CAB_EDS-XOP-S-007-M	Support validation constraints of S-PCC Document	5.6.1.6	S-CAB_EDS-SRC-S-001-M
S-CAB_EDS-XOP-S-008-M	Support data semantics of S-PCC Document	5.6.1.7	S-CAB_EDS-SRC-S-001-M
S-CAB_EDS-SEC-S-001-M	Support access permissions of external directories search	5.6.1.11	S-CAB_EDS-SRC-S-001-M and XDM_Core-SEC-S-003-O
S-CAB_EDS-SRC-S-001-M	Support external directories search	5.6.1.13	XDM_Core-SRC-S-001-O and XDM_Core-SRC-S-003-O

Table 21: SCR Table for S-CAB XDMS (External Search)

C.20 S-CAB External Directories Search Application Usage for XDMC

Item	Function	Reference	Requirement
S-CAB_EDS-XOP-C-002-M	Support S-PCC Document structure	5.6.1.1	S-CAB_EDS-SRC-C-001-M
S-CAB_EDS-XOP-C-003-M	Support Application Unique ID of S-CAB external directories search request	5.6.1.2	S-CAB_EDS-SRC-C-001-M
S-CAB_EDS-XOP-C-004-M	Support XML schema of S-PCC Document	5.6.1.3	S-CAB_EDS-SRC-C-001-M
S-CAB_EDS-XOP-C-008-M	Support data semantics of S-PCC Document	5.6.1.7	S-CAB_EDS-SRC-C-001-M
S-CAB_EDS-SRC-C-001-M	Support external directories search	5.6.1.13	XDM_Core-SRC-C-001-O and XDM_Core-SRC-C-003-O

Table 22: SCR Table for S-CAB XDMC (External Search)

C.21 S-CAB External Directories Search Application Usage for XDM Agent

Item	Function	Reference	Requirement
S-CAB_EDS-XOP-A-002-M	Support S-PCC Document structure	5.6.1.1	S-CAB_EDS-SRC-A-001-M

Item	Function	Reference	Requirement
S-CAB_EDS-XOP-A-003-M	Support Application Unique ID of S-CAB external directories search request	5.6.1.2	S-CAB_EDS-SRC-A-001-M
S-CAB_EDS-XOP-A-004-M	Support XML schema of S-PCC Document	5.6.1.3	S-CAB_EDS-SRC-A-001-M
S-CAB_EDS-XOP-A-008-M	Support data semantics of S-PCC Document	5.6.1.7	S-CAB_EDS-SRC-A-001-M
S-CAB_EDS-SRC-A-001-M	Support external directories search	5.6.1.13	XDM_Core-SRC-A-001-O and XDM_Core-SRC-A-003-O

Table 23: SCR Table for S-CAB XDMA (External Search)

C.22 S-CAB Communication History Application Usage for XDMS

Item	Function	Reference	Requirement
S-CAB_CH-XOP-S-001-M	Support S-CAB Communication History Application Usage	5.7.1	S-CAB_UP-XOP-C-002-M and S-CAB_CH-XOP-C-003-M and S-CAB_CH-XOP-C-004-M and S-CAB_CH-XOP-C-005-M and S-CAB_CH-XOP-C-006-M and S-CAB_CH-XOP-C-007-M and S-CAB_CH-XOP-C-008-M and S-CAB_CH-XOP-C-009-M and S-CAB_CH-SEC-C-001-M
S-CAB_CH-XOP-S-002-M	Support S-CAB Communication History Document structure	5.7.1.1	S-CAB_CH-XOP-C-001-M and XDM_Core-XOP-C-003-M
S-CAB_CH-XOP-S-003-M	Support Application Unique ID of S-CAB Communication History Document	5.7.1.2	
S-CAB_CH-XOP-S-004-M	Support XML schema of S-CAB Communication History Document	5.7.1.3	
S-CAB_CH-XOP-S-005-M	Support default name space of S-CAB Communication History Document	5.7.1.3	
S-CAB_CH-XOP-S-006-M	Support MIME type of S-CAB Communication History Document	5.7.1.4	
S-CAB_CH-XOP-S-007-M	Support validation constraints of S-CAB Communication History Document	5.7.1.5	
S-CAB_CH-XOP-S-008-M	Support data semantics of S-CAB Communication History Document	5.7.1.6	

Item	Function	Reference	Requirement
S-CAB_CH-XOP-S-009-M	Support naming conventions for S-CAB Communication History Document	0	
S-CAB_CH-SEC-S-001-M	Support access permissions of S-CAB Communication History Document	5.7.1.10	
S-CAB_CH-SUB-S-001-M	Support Subscription to changes	5.7.1.11	S-CAB_CH-XOP-C-001-M and XDM-Core-SUB-C-001-O and XDM-Core-SUB-C-002-O and XDM-Core-SUB-C-004-O
S-CAB_CH-SRC-S-001-M	Support search capabilities for S-CAB Communication History Document	5.7.1.12	S-CAB_CH-XOP-C-001-M and XDM_Core-SRC-C-001-O and XDM_Core-SRC-C-002-O and XDM_Core-SRC-C-003-O

Table 24: SCR Table for S-CAB XDMS (CH)

C.23 S-CAB Communication History Application Usage for XDMC

Item	Function	Reference	Requirement
S-CAB_CH-XOP-C-001-M	Support S-CAB Communication History Application Usage	5.7.1	S-CAB_UP-XOP-C-002-M and S-CAB_CH-XOP-C-003-M and S-CAB_CH-XOP-C-004-M and S-CAB_CH-XOP-C-005-M and S-CAB_CH-XOP-C-006-M and S-CAB_CH-XOP-C-007-M and S-CAB_CH-XOP-C-008-M and S-CAB_CH-XOP-C-009-M and S-CAB_CH-SEC-C-001-M
S-CAB_CH-XOP-C-002-M	Support S-CAB Communication History Document structure	5.7.1.1	S-CAB_CH-XOP-C-001-M and XDM_Core-XOP-C-003-M
S-CAB_CH-XOP-C-003-M	Support Application Unique ID of S-CAB Communication History Document	5.7.1.2	
S-CAB_CH-XOP-C-004-M	Support XML schema of S-CAB Communication History Document	5.7.1.3	
S-CAB_CH-XOP-C-005-M	Support default name space of S-CAB Communication History Document	5.7.1.3	
S-CAB_CH-XOP-C-006-M	Support MIME type of S-CAB Communication History Document	5.7.1.4	
S-CAB_CH-XOP-C-007-M	Support validation constraints of S-CAB Communication History Document	5.7.1.5	

Item	Function	Reference	Requirement
S-CAB_CH-XOP-C-008-M	Support data semantics of S-CAB Communication History Document	5.7.1.6	
S-CAB_CH-XOP-C-009-M	Support naming conventions for S-CAB Communication History Document	0	
S-CAB_CH-SEC-C-001-M	Support access permissions of S-CAB Communication History Document	5.7.1.10	
S-CAB_CH-SUB-C-001-M	Support Subscription to changes	5.7.1.11	S-CAB_CH-XOP-C-001-M and XDM-Core-SUB-C-001-O and XDM-Core-SUB-C-002-O and XDM-Core-SUB-C-004-O
S-CAB_CH-SRC-C-001-M	Support search capabilities for S-CAB Communication History Document	5.7.1.12	S-CAB_CH-XOP-C-001-M and XDM_Core-SRC-C-001-O and XDM_Core-SRC-C-002-O and XDM_Core-SRC-C-003-O

Table 25: SCR Table for S-CAB XDMC (CH)

C.24 S-CAB Communication History Application Usage for XDM Agent

Item	Function	Reference	Requirement
S-CAB_CH-XOP-A-001-M	Support S-CAB Communication History Application Usage	5.7.1	S-CAB_UP-XOP-A-002-M and S-CAB_CH-XOP-A-003-M and S-CAB_CH-XOP-A--004-M and S-CAB_CH-XOP-A-005-M and S-CAB_CH-XOP-A-006-M and S-CAB_CH-XOP-A-007-M and S-CAB_CH-XOP-A-008-M and S-CAB_CH-XOP-A--009-M and S-CAB_CH-SEC-A--001-M
S-CAB_CH-XOP-A-002-M	Support S-CAB Communication History Document structure	5.7.1.1	S-CAB_CH-XOP-A--001-M and XDM_Core-XOP-A--003-M
S-CAB_CH-XOP-A-003-M	Support Application Unique ID of S-CAB Communication History Document	5.7.1.2	
S-CAB_CH-XOP-A-004-M	Support XML schema of S-CAB Communication History Document	5.7.1.3	
S-CAB_CH-XOP-A-005-M	Support default name space of S-CAB Communication History Document	5.7.1.3	

Item	Function	Reference	Requirement
S-CAB_CH-XOP-A-006-M	Support MIME type of S-CAB Communication History Document	5.7.1.4	
S-CAB_CH-XOP-A-007-M	Support validation constraints of S-CAB Communication History Document	5.7.1.5	
S-CAB_CH-XOP-A-008-M	Support data semantics of S-CAB Communication History Document	5.7.1.6	
S-CAB_CH-XOP-A-009-M	Support naming conventions for S-CAB Communication History Document	0	
S-CAB_CH-SEC-A-001-M	Support access permissions of S-CAB Communication History Document	5.7.1.10	
S-CAB_CH-SUB-A-001-M	Support Subscription to changes	5.7.1.11	S-CAB_CH-XOP-A-001-M and XDM-Core-SUB-A-001-O and XDM-Core-SUB-A-002-O and XDM-Core-SUB-A-004-O
S-CAB_CH-SRC-A-001-M	Support search capabilities for S-CAB Communication History Document	5.7.1.12	S-CAB_CH-XOP-A-001-M and XDM_Core-SRC-A-001-O and XDM_Core-SRC-A-002-O and XDM_Core-SRC-A-003-O

Table 26: SCR Table for S-CAB XDMA (CH)

Appendix D. Flows (Informative)

S-CAB XDM document management flows are described in the [S-CAB AD].

Note:XDM document management flows are also described in [OMA XDM Core].

Appendix E. S-CAB XDMS documents examples (Informative)

E.1 Address Book XML documents

The following is an example of an S-AB Document.

The S-AB document in this example represents an S-AB document of type “individual” (i.e. “pcc-type” attribute set to “individual”) with the following details:

1) one <personal-details> element populated with S-CAB User’s personal information.
2) one <org-details> element populated with information related to two organizations.
3) one <group-details> element populated with information related to one group.
4) one <update-object-list> element populated with information about one ongoing import a Non-CAB System and one ongoing contact subscription.
5) one <contact-type> element populated with the information that the user is an S-CAB User. The information was obtained via a contact subscription.

```
<?xml version="1.0" encoding="UTF-8"?>
<pcc pcc-type="individual" xmlns="urn:oma:xml:cab:pcc" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
   instance" xmlns:sc10="urn:oma:xml:scab:1.0extensions">
  <person-details index="gt4fd890bu8">
   <name index="fg4fd890der">
      <name-entry index="dslkhdskj" pref="1" xml:lang="en" name-type="LegalName">
          <title display-order="1">Mr.</title>
          <given display-order="1">Joesph</given>
          <middle display-order="1">Samuel</middle>
          <family display-order="1">Bloggs</family>
          <gen-id display-order="1">Jr.</gen-id>
          <degree display-order="1">PE</degree>
          <display-name>Joesph Bloggs</display-name>
      </name-entry>
      <name-entry index="riuetutl" pref="2" xml:lang="en" name-type="KnownAs">
          <given display-order="1">Joe</given>
          <family display-order="1">Bloggs</family>
          <display-name>Joe Bloggs</display-name>
      </name-entry>
   </name>
   <address>
      <address-entry index="dasfdhasl" pref="1" addr-type="Home" xml:lang="en">
          <location>
              <location-label>Home Coordinates</location-label>
              <latitude>
                  <degrees-measure>34</degrees-measure>
                  <minutes-measure>38</minutes-measure>
                  <seconds-measure>58</seconds-measure>
                  <lat-sign>N</lat-sign>
              </latitude>
              <longitude>
                  <degrees-measure>86</degrees-measure>
                  <minutes-measure>46</minutes-measure>
                  <seconds-measure>35</seconds-measure>
                  <long-sign>W</long-sign>
              </longitude>
              <altitude>
                  <meters-measure>60</meters-measure>
                  <alt-sign>+</alt-sign>
              </altitude>
              <time-zone>
                  <tz-label>Central Time Zone</tz-label>
                  <utc-offset>-6</utc-offset>
                  <tz-url>timezoneinfo.example.com</tz-url>
              </time-zone>
          </location>
```

```
            <label>Home Address</label>
            <addr-details>
                <country>US</country>
                <region>
                    <region-name region-type="State">Alabama</region-name>
                    <sub-region sub-region-type="Other">XYZ County</sub-region>
                </region>
                <locality>
                    <locality-name locality-type="City">Huntsville </locality-name>
                    <sub-locality sub-locality-type="District">Historic District</sub-locality>
                </locality>
                <street>
                    <str-name>SE Blossom Lane</str-name>
                    <str-number>12345</str-number>
                    <intersection>
                        <int-name>5th and SE Blossom Lane</int-name>
                        <int-number>1</int-number>
                    </intersection>
                </street>
                <post-code>
                    <post-code-main>35811</post-code-main>
                    <sub-post-code>2367</sub-post-code>
                </post-code>
            </addr-details>
        </address-entry>
        <address-entry index="ludskhf" pref="2" addr-type="Work" xml:lang="en">
            <addr-string> XYZ Corporation,111 Park Avenue,Huntsville AL 11111, USA</addr-string>
            </address-entry>
    </address>
    <comm-addr xml:lang="en">
        <uri-entry index="glrjgil" pref="1" addr-uri-type="Home SIP-URI">
            <addr-uri xui-type="CAB">sip:joe.bloggs@example.com;</addr-uri>
            <label>Joe Boggs IP Phone</label>
        </uri-entry>
        <uri-entry index="asdhfdsag" pref="2" addr-uri-type="Email">
            <addr-uri> mailto:jboggs@example.com</addr-uri>
            <label>Email</label>
        </uri-entry>
        <tel index="fdsajghd" pref="1" tel-type="Home Fixed">
            <tel-nb>
                <E164>
                    <cc>1</cc>
                    <ndc>800</ndc>
                    <sn>5551212</sn>
                </E164>
            </tel-nb>
            <label>Home Phone</label>
        </tel>
        <tel index="nbvfjf" pref="2" tel-type="Home Mobile">
            <tel-nb>
                <tel-str>1-800-555-1213</tel-str>
            </tel-nb>
            <label>Personal Phone</label>
        </tel>
        <tel index="ijlfushf" pref="3" tel-type="Pager">
            <tel-nb>
                <tel-uri>tel:+1-800-555-1214</tel-uri>
            </tel-nb>
            <label>Personal Pager</label>
        </tel>
    </comm-addr>
    <birth xml:lang="en">
        <birth-date>
            <date>1957-07-09T06:01:00</date>
            <non-greg-date index="sfkj" cal-type="Ethiopian">1949-11-02</non-greg-date>
            <non-greg-date index="lkjfdd" cal-type="Hebrew">5717—04-10</non-greg-date>
        </birth-date>
        <place index="hgdfersx">Saint Joesph Hospital Little Rock, Arkansas</place>
    </birth>
    <anniversary-list xml:lang="en">
        <anniversary-entry index="kfdjshdk">
            <anniversary-date>
```

```
            <date>1987-11-14T00:00:00</date>
        </anniversary-date>
        <label>Marriage Anniversary</label>
    </anniversary-entry>
    <anniversary-entry index="akdshjr">
        <anniversary-date>
            <date>2010-05-04T00:00:00</date>
        </anniversary-date>
        <label>Child"s Marriage Anniversary</label>
    </anniversary-entry>
</anniversary-list>
<gender xml:lang="en">1</gender>
<language-list xml:lang="en">
    <language-entry index="fluhfu" language-proficiency-type="read-write">English</language-
entry>
    <language-entry index="fdskjh" language-proficiency-type="speak" language-fluency-
type="beginner">Spanish</language-entry>
</language-list>
<media-list xml:lang="en">
    <media-entry index="dskjhf" pref="1" media-content="Photo" media-type="image/png">
        <media>
            <media-url>http://example.com/myImage.png</media-url>
        </media>
        <label>MyPhoto</label>
    </media-entry>
    <media-entry index="fdkuhf" pref="2" media-content="Video" media-type="video/ogg">
        <media>
            <media-url>http://example.com/myVideo.ogg</media-url>
        </media>
        <label>MyVideo</label>
    </media-entry>
</media-list>
<category-list xml:lang="en">
    <category-entry index="lidfhui">Personal</category-entry>
    <category-entry index="safdsdh">Friends</category-entry>
</category-list>
<web-resources xml:lang="en">
    <web-entry index="kjdshfa">
        <url>http://example.com/index.html</url>
        <label>My Home Page</label>
    </web-entry>
    <web-entry index="lijfajd">
        <url>http://example.com/myblog.html</url>
        <label>My Blog</label>
    </web-entry>
</web-resources>
<key-list xml:lang="en">
    <key-entry index="fdskjd" key-type="RSA">
        <key>U4E636AF98E40F3A</key>
        <label/>
    </key-entry>
    <key-entry index="fdskjd" key-type="TBD">
        <key>U4E636AF98E40F3d</key>
        <label/>
    </key-entry>
</key-list>
<service-list xml:lang="en">
    <service-entry index="sdkjfh">
        <label>My Photo Service</label>
        <alias>XYZ Photos</alias>
        <url>xyz.example.com</url>
    </service-entry>
    <service-entry index="slkauhj">
        <label>My Social Network</label>
        <alias>JBloggs Social Network</alias>
        <url>social.example.com</url>
    </service-entry>
</service-list>
<expertise-list xml:lang="en">
    <expertise-entry index="rttelkk" e-level="Beginner">Auto Mechanic</expertise-entry>
    <expertise-entry index="rewiuri" e-level="Expert">Painting</expertise-entry>
</expertise-list>
```

```
    <hobby-list xml:lang="en">
       <hobby-entry index="rttelkk" h-level="High">Coin collecting</hobby-entry>
       <hobby-entry index="rewiuri" h-level="Medium">Flying model planes</hobby-entry>
    </hobby-list>
    <interests-list xml:lang="en">
       <interest-entry index="rttelkk" i-level="High">Live TV </interest-entry>
       <interest-entry index="rewiuri" i-level="Low">Video Games</interest-entry>
    </interests-list>
    <career-history xml:lang="en">
       <history-entry index="sadlkj" history-type="School">
           <history-description>Hayden High School </history-description>
           <start-date>
               <date>2002-09-01T00:00:00</date>
           </start-date>
           <end-date>
               <date>2006-05-31T00:00:00</date>
           </end-date>
       </history-entry>
       <history-entry index="sadlkj" history-type="School">
           <history-description>University of Albama</history-description>
           <start-date>
               <date>2006-09-05T00:00:00</date>
           </start-date>
           <end-date>
               <date>2010-05-16T00:00:00</date>
           </end-date>
       </history-entry>
       <history-entry index="sadlkj" history-type="Occupation">
           <history-description >Joes Tavern</history-description>
           <start-date>
               <date>2011-06-16T00:00:00</date>
           </start-date>
       </history-entry>
    </career-history>
    <note xml:lang="en">BCCE password DungFly</note>
       <service-provider-specific-list>
       <sp-specific-entry index="sadldfget">
           <sp-specific-label>Upgrade your CAB Service!</sp-specific-label>
           <sp-data>Dial +1 800555 1212</sp-data>
       </sp-specific-entry>
    </service-provider-specific-list>
   </person-details>
   <org-details index="shjduhk">
    <org-name index="ifsiiff" pref="1" org-name-type="OfficialName">
       <display-name>AB Inc.</display-name>
       <entity>Any Biz Inc.</entity>
       <unit>SE Region Sales</unit>
    </org-name>
    <org-name index="loijdjd" pref="2" org-name-type="LegalName">
       <display-name>ABC</display-name>
       <entity>All Boston Consulting</entity>
       <unit>Transportation</unit>
    </org-name>
   </org-details>
   <group-details index="sdkjanhd">
    <group-name>
       <display-name>CAB Members</display-name>
       <entity>OMA Converged Address Book Members List</entity>
    </group-name>
    <group-members-list>
       <group-member index="sakhd">
           <member-details-url>http://openmobilealliance.org/OMACAB/List.html</member-details-url>
       </group-member>
    </group-members-list>
   </group-details>
<sc10:update-object-list>
     <sc10:update-object index="adbsedrty" tcc-ref="import.joe_bloggs.tcc" iuo-
    ref="org.openmobilealliance.s-cab-iuo/users/sip:alice@example.com/adbsedrty" time-stamp="2012-
    07-05T12:00:00" approval="manual" update-type="import" source-
    name="http://example_external_addressbook.com/joe_bloggs">
      <sc10:import-status expiration-time="2012-07-05T23:00:00" scheduled-
    interval="2">active</sc10:import-status>
```

```
    </sc10:update-object>
    <sc10:update-object index="adbsexswe" tcc-ref="subscribe.joe_bloggs.tcc" time-stamp="2012-07-
   05T11:00:00" prio="1.00" approval="automatic" update-type="tracking">
     <sc10:contact-subscription-status>active</sc10:contact-subscription-status>
    </sc10:update-object>
  </sc10:update-object-list>
  <sc10:contact-type>
    <sc10:contact-type-source>pcc-subscription</sc10:contact-type-source>
    <sc10:s-cab/>
  </sc10:contact-type>
</pcc>
```

E.2 PCC XML documents

The following is an example of a S-PCC XML document. The S-PCC document in this example represents an S-PCC document of type “individual” (i.e. “pcc-type” attribute set to “individual”) with the following details:

1) one <personal-details> element populated with S-CAB User’s personal information.
2) one <org-details> element populated with information related to two organizations.
3) one <group-details> element populated with information related to one group.
4) one <update-object-list> element populated with information about one ongoing import from a Non-CAB System.

```
<?xml version="1.0" encoding="UTF-8"?>
<pcc pcc-type="individual" xmlns="urn:oma:xml:cab:pcc" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
   instance" xmlns:sc10="urn:oma:xml:scab:1.0extensions">
  <person-details index="gt4fd890bu8">
   <name index="fg4fd890der">
      <name-entry index="dslkhdskj" pref="1" xml:lang="en" name-type="LegalName">
          <title display-order="1">Mr.</title>
          <given display-order="1">Joesph</given>
          <middle display-order="1">Samuel</middle>
          <family display-order="1">Bloggs</family>
          <gen-id display-order="1">Jr.</gen-id>
          <degree display-order="1">PE</degree>
          <display-name>Joesph Bloggs</display-name>
      </name-entry>
      <name-entry index="riuetutl" pref="2" xml:lang="en" name-type="KnownAs">
          <given display-order="1">Joe</given>
          <family display-order="1">Bloggs</family>
          <display-name>Joe Bloggs</display-name>
      </name-entry>
   </name>
   <address>
      <address-entry index="dasfdhasl" pref="1" addr-type="Home" xml:lang="en">
          <location>
              <location-label>Home Coordinates</location-label>
              <latitude>
                  <degrees-measure>34</degrees-measure>
                  <minutes-measure>38</minutes-measure>
                  <seconds-measure>58</seconds-measure>
                  <lat-sign>N</lat-sign>
              </latitude>
              <longitude>
                  <degrees-measure>86</degrees-measure>
                  <minutes-measure>46</minutes-measure>
                  <seconds-measure>35</seconds-measure>
                  <long-sign>W</long-sign>
              </longitude>
              <altitude>
                  <meters-measure>60</meters-measure>
                  <alt-sign>+</alt-sign>
              </altitude>
              <time-zone>
                  <tz-label>Central Time Zone</tz-label>
                  <utc-offset>-6</utc-offset>
                  <tz-url>timezoneinfo.example.com</tz-url>
```

```
            </time-zone>
        </location>
        <label>Home Address</label>
        <addr-details>
            <country>US</country>
            <region>
                <region-name region-type="State">Alabama</region-name>
                <sub-region sub-region-type="Other">XYZ County</sub-region>
            </region>
            <locality>
                <locality-name locality-type="City">Huntsville </locality-name>
                <sub-locality sub-locality-type="District">Historic District</sub-locality>
            </locality>
            <street>
                <str-name>SE Blossom Lane</str-name>
                <str-number>12345</str-number>
                <intersection>
                    <int-name>5th and SE Blossom Lane</int-name>
                    <int-number>1</int-number>
                </intersection>
            </street>
            <post-code>
                <post-code-main>35811</post-code-main>
                <sub-post-code>2367</sub-post-code>
            </post-code>
        </addr-details>
    </address-entry>
    <address-entry index="ludskhf" pref="2" addr-type="Work" xml:lang="en">
        <addr-string> XYZ Corporation,111 Park Avenue,Huntsville AL 11111, USA</addr-string>
        </address-entry>
</address>
<comm-addr xml:lang="en">
    <uri-entry index="glrjgil" pref="1" addr-uri-type="Home SIP-URI">
        <addr-uri>sip:joe.bloggs@example.com;</addr-uri>
        <label>Joe Boggs IP Phone</label>
    </uri-entry>
    <uri-entry index="asdhfdsag" pref="2" addr-uri-type="Email">
        <addr-uri> mailto:jboggs@example.com</addr-uri>
        <label>Email</label>
    </uri-entry>
    <tel index="fdsajghd" pref="1" tel-type="Home Fixed">
        <tel-nb>
            <E164>
                <cc>1</cc>
                <ndc>800</ndc>
                <sn>5551212</sn>
            </E164>
        </tel-nb>
        <label>Home Phone</label>
    </tel>
    <tel index="nbvfjf" pref="2" tel-type="Home Mobile">
        <tel-nb>
            <tel-str>1-800-555-1213</tel-str>
        </tel-nb>
        <label>Personal Phone</label>
    </tel>
    <tel index="ijlfushf" pref="3" tel-type="Pager">
        <tel-nb>
            <tel-uri>tel:+1-800-555-1214</tel-uri>
        </tel-nb>
        <label>Personal Pager</label>
    </tel>
</comm-addr>
<birth xml:lang="en">
    <birth-date>
        <date>1957-07-09T06:01:00</date>
        <non-greg-date index="sfkj" cal-type="Ethiopian">1949-11-02</non-greg-date>
        <non-greg-date index="lkjfdd" cal-type="Hebrew">5717—04-10</non-greg-date>
    </birth-date>
    <place index="hgdfersx">Saint Joesph Hospital Little Rock, Arkansas</place>
</birth>
<anniversary-list xml:lang="en">
```

```
      <anniversary-entry index="kfdjshdk">
          <anniversary-date>
              <date>1987-11-14T00:00:00</date>
          </anniversary-date>
          <label>Marriage Anniversary</label>
      </anniversary-entry>
      <anniversary-entry index="akdshjr">
          <anniversary-date>
              <date>2010-05-04T00:00:00</date>
          </anniversary-date>
          <label>Child"s Marriage Anniversary</label>
      </anniversary-entry>
   </anniversary-list>
   <gender xml:lang="en">1</gender>
   <language-list xml:lang="en">
      <language-entry index="fluhfu" language-proficiency-type="read-write">English</language-
   entry>
      <language-entry index="fdskjh" language-proficiency-type="speak" language-fluency-
   type="beginner">Spanish</language-entry>
   </language-list>
   <media-list xml:lang="en">
      <media-entry index="dskjhf" pref="1" media-content="Photo" media-type="image/png">
          <media>
              <media-url>http://example.com/myImage.png</media-url>
          </media>
          <label>MyPhoto</label>
      </media-entry>
      <media-entry index="fdkuhf" pref="2" media-content="Video" media-type="video/ogg">
          <media>
              <media-url>http://example.com/myVideo.ogg</media-url>
          </media>
          <label>MyVideo</label>
      </media-entry>
   </media-list>
   <category-list xml:lang="en">
      <category-entry index="lidfhui">Personal</category-entry>
      <category-entry index="safdsdh">Friends</category-entry>
   </category-list>
   <web-resources xml:lang="en">
      <web-entry index="kjdshfa">
          <url>http://example.com/index.html</url>
          <label>My Home Page</label>
      </web-entry>
      <web-entry index="lijfajd">
          <url>http://example.com/myblog.html</url>
          <label>My Blog</label>
      </web-entry>
   </web-resources>
   <key-list xml:lang="en">
      <key-entry index="fdskjd" key-type="RSA">
          <key>U4E636AF98E40F3A</key>
          <label/>
      </key-entry>
      <key-entry index="fdskjd" key-type="TBD">
          <key>U4E636AF98E40F3d</key>
          <label/>
      </key-entry>
   </key-list>
   <service-list xml:lang="en">
      <service-entry index="sdkjfh">
          <label>My Photo Service</label>
          <alias>XYZ Photos</alias>
          <url>xyz.example.com</url>
      </service-entry>
      <service-entry index="slkauhj">
          <label>My Social Network</label>
          <alias>JBloggs Social Network</alias>
          <url>social.example.com</url>
      </service-entry>
   </service-list>
   <expertise-list xml:lang="en">
      <expertise-entry index="rttelkk" e-level="Beginner">Auto Mechanic</expertise-entry>
```

```
      <expertise-entry index="rewiuri" e-level="Expert">Painting</expertise-entry>
   </expertise-list>
   <hobby-list xml:lang="en">
      <hobby-entry index="rttelkk" h-level="High">Coin collecting</hobby-entry>
      <hobby-entry index="rewiuri" h-level="Medium">Flying model planes</hobby-entry>
   </hobby-list>
   <interests-list xml:lang="en">
      <interest-entry index="rttelkk" i-level="High">Live TV </interest-entry>
      <interest-entry index="rewiuri" i-level="Low">Video Games</interest-entry>
   </interests-list>
   <career-history xml:lang="en">
      <history-entry index="sadlkj" history-type="School">
          <history-description>Hayden High School </history-description>
          <start-date>
              <date>2002-09-01T00:00:00</date>
          </start-date>
          <end-date>
              <date>2006-05-31T00:00:00</date>
          </end-date>
      </history-entry>
      <history-entry index="sadlkj" history-type="School">
          <history-description>University of Albama</history-description>
          <start-date>
              <date>2006-09-05T00:00:00</date>
          </start-date>
          <end-date>
              <date>2010-05-16T00:00:00</date>
          </end-date>
      </history-entry>
      <history-entry index="sadlkj" history-type="Occupation">
          <history-description >Joes Tavern</history-description>
          <start-date>
              <date>2011-06-16T00:00:00</date>
          </start-date>
      </history-entry>
   </career-history>
   <note xml:lang="en">BCCE password DungFly</note>
   <service-provider-specific-list>
      <sp-specific-entry index="sadldfget">
          <sp-specific-label>Upgrade your CAB Service!</sp-specific-label>
          <sp-data>Dial +1 800555 1212</sp-data>
      </sp-specific-entry>
   </service-provider-specific-list>
  </person-details>
  <org-details index="shjduhk">
   <org-name index="ifsiiff" pref="1" org-name-type="OfficialName">
      <display-name>AB Inc.</display-name>
      <entity>Any Biz Inc.</entity>
      <unit>SE Region Sales</unit>
   </org-name>
   <org-name index="loijdjd" pref="2" org-name-type="LegalName">
      <display-name>ABC</display-name>
      <entity>All Boston Consulting</entity>
      <unit>Transportation</unit>
   </org-name>
  </org-details>
  <group-details index="sdkjanhd">
   <group-name>
      <display-name>CAB Members</display-name>
      <entity>OMA Converged Address Book Members List</entity>
   </group-name>
   <group-members-list>
      <group-member index="sakhd">
          <member-details-url>http://openmobilealliance.org/OMACAB/List.html</member-details-url>
      </group-member>
   </group-members-list>
  </group-details>
<sc10:update-object-list>
    <sc10:update-object index="adbsedfff" tcc-ref="import.joe_bloggs.tcc" iuo-
   ref="org.openmobilealliance.s-cab-iuo/users/sip:joe.bloggs@example.com/adbsedfff" time-
   stamp="2012-07-05T12:00:00" approval="manual" update-type="import" source-
   name="http://example_external_addressbook.com/joe_bloggs">
```

```
     <sc10:import-status expiration-time="2012-07-30T23:00:00" scheduled-
   interval="0">active</sc10:import-status>
    </sc10:update-object>
  </sc10:update-object-list>
</pcc>
```

E.3 S-CAB User Preferences Documents

The following is an example of an S-CAB User Preferences XML document. This example demonstrates the content of S-CAB User Preferences Document as a result of following actions of the S-CAB User:

1) UPP profile with profile id set to “1234”.
2) Populating the display name to “My address book preferences” for this profile.
3) Subscription list with two Contact Subscriptions one entry each with a SIP URI and TEL URI.

```
<?xml version="1.0" encoding="UTF-8"?>
<s-cab-upp xmlns="urn:oma:xml:s-cab:user-prefs" xmlns:sf="urn:ietf:params:xml:ns:simple-filter">
 <s-cab-upp-set>
          <profile id="1234">
              <display-name>My address book preferences</display-name>
              <send-notification-contact-added>true</send-notification-contact-added>
              <receive-notification-when-contact-added>true</receive-notification-when-contact-
added>
              <allow-suggested-contact-info>true</allow-suggested-contact-info>
              <update-ab>
                  <contact-subscription-update>
                   <approval>automatic</approval>
                   <prio>1.00</prio>
                  </contact-subscription-update>
                 <import-update>
                   <approval>manual</approval>
                 </import-update>
              </update-ab>
              <contact-share-format>CAB1.0</contact-share-format>
          </profile>
</s-cab-upp-set>
<subscription-list>
          <entry id="sip:firstnamelastname@example.com">
            <filter-set>
              <sf:ns-bindings>
                    <sf:ns-binding prefix="pcc" urn="urn:oma:xml:cab:pcc"/>
              </sf:ns-bindings>
              <sf:filter id="name">
               <sf:what>
                <sf:include type="xpath">/pcc:pcc/pcc:personal-details/pcc:name</sf:include>
               </sf:what>
              </sf:filter>
           </filter-set>
           <approval>manual</approval>
           <ccc-ref>firstnamelastname</ccc-ref>
          </entry>
          <entry id="tel:+1-800-555-1212"/>
  </subscription-list>
  </s-cab-upp>
```

E.4 S-CAB Communication History

The following is an example of an S-CAB Communication History XML document. This example demonstrates the content of S-CAB Communication History Document including a communication event of type messaging.

1) The user was the originator of the messaging communication;
2) The device that recorded the event has a GRUU of “hdg7777ad7aflzig8sf7”;
3) The date of the communication event was 2014-07-09T06:01:00.

4) The result was answered, as the messaging session was successfully established with the other party;
5) The other party was Bob, with a tel uri: +1-514-345-7900
6) The messaging communication had a Conversation-ID, a Contribution-ID and a <uid> value that allows a CPM Message Store client to retrieve the associated messaging object (e.g. standalone message object, file transfer history object, session info object) from the Message Store.

```
<?xml version="1.0" encoding="UTF-8"?>
<s-cab-ch xmlns="urn:oma:xml:s-cab:ch" xmlns:sf="urn:ietf:params:xml:ns:simple-filter">
 <comm-hist>
    <comm-event  type="messaging"  date="2014-07-09T06:01:00"  device="hdg7777ad7aflzig8sf7"
orig=”true”>
             <participant  comm-address="tel:+1-514-345-7900"  display-name="Bob">
                  <member-details-url>http://openmobilealliance.org/OMA-SCAB/Bob.html</member-
details-url>
             </participant>
             <result>answered</result>
             <duration>455391</duration>
             <usage-info>
                 <conversation-id value="t4ujfnn8r02ur1fhvbct4ujfnn8r02ur1fhvbc0r9u">
                       <contribution-id>iurghrbkv345u4oihfbvf309028r239fhin</contribution-id>
                 </conversation-id>
                 <uid>4876t4hf34y0294tuntv8u02uckjh895ytohfn98ry8rojg2095uyyhghfn</uid>
             </usage-info>

    </comm-event>
</comm-hist>
</s-cab-ch>
```

E.5 S-CAB Indirect Update Object Documents

The following XML document is an example of an IUO Document.

The document contains a patch where a title in name information in “sip:alice@example.com”’s S-AB Document “joe_bloggs” is changed to “Dr.”

Note: The <remove> element is mandatory in an IUO Document as described in section 5.5.1.1.

```
<?xml version="1.0" encoding="UTF-8"?>
<xd:xcap-diff xmlns:xd="urn:ietf:params:xml:ns:xcap-diff"
      xcap-root="http://xcap.example.com/root">
  <xd:document
         previous-etag="etag2"
         sel="org.openmobilealliance.s-cab-address-book/users/sip:alice@example.com/joe_bloggs">
    <xd:remove sel="/pcc/update-object-list/update-object[@index='adbsedrty']/@iuo-ref"/>
    <xd:replace sel="/pcc/person-details[@id='gt4fd890bu8']/name[@id='fg4fd890der']/name-
   entry[@id='dslkhdskj']/title">
      <title display-order="1">Dr.</title>
   </xd:replace>
  </xd:document>
</xd:xcap-diff>
```

E.6 XDCP Import Documents

The following XML document is an example of an XDCP Document used to request import of contact information from a Non-CAB system.

```
<?xml version="1.0" encoding="UTF-8"?>
<xdcp:xdcp-document
     xmlns:xdcp="urn:oma:xml:xdm:xdcp"
     xmlns:sc10="urn:oma:xml:scab:1.0extensions">
  <xdcp:request>
     <sc10:import-to-doc>
      <sc10:source-name>http://example_external_addressbook.com/joe_bloggs</sc10:source-name>
      <sc10:scheduled-interval>2</sc10:scheduled-interval>
      <sc10:expiration-time>2012-07-05T23:00:00</sc10:expiration-time>
      <sc10:credentials>
       <sc10:user-name>alice</sc10:user-name>
       <sc10:password>1876oMa</sc10:password>
      </sc10:credentials>
      <sc10:approval>manual</sc10:approval>
      <sc10:ccc-ref>joe_bloggs</sc10:ccc-ref>
     </sc10:import-to-doc>
  </xdcp:request>
</xdcp:xdcp-document>
```

E.7 XDCP Export Documents

The following XML document is an example of an XDCP Document used to request export of contact information to a Non-CAB system.

```
<?xml version="1.0" encoding="UTF-8"?>
<xdcp:xdcp-document
     xmlns:xdcp="urn:oma:xml:xdm:xdcp"
     xmlns:sc10="urn:oma:xml:scab:1.0extensions">
  <xdcp:request>
     <sc10:export-from-doc>
      <sc10:source-name>http://example_external_addressbook.com/alice</sc10:source-name>
      <sc10:ccc-ref>PCC.xml</sc10:ccc-ref>
      <sc10:scheduled-interval>0</sc10:scheduled-interval>
      <sc10:expiration-time>2012-07-06T23:00:00</sc10:expiration-time>
      <sc10:credentials>
       <sc10:user-name>alice</sc10:user-name>
       <sc10:password>1876oMa</sc10:password>
      </sc10:credentials>
    </sc10:export-from-doc>
  </xdcp:request>
</xdcp:xdcp-document>
```

E.8 External Directories Search Documents

The following XML document is an example of an XDM Search Document used to search the external directory “white_pages@example.com” for contact information about a user with “sip:bob@example.com” as SIP address. The result of the search is in the form of <person-details> elements.

```
<?xml version="1.0" encoding="UTF-8"?>
<search-set   xmlns="urn:oma:xml:xdm:search" xmlns:sc10="urn:oma:xml:scab:1.0extensions">
<search id="1234">
  <request>
       <query>
   <![CDATA[
      xquery version "1.0";
      declare default element namespace "urn:oma:xml:cab:pcc";
      for $u in collection("org.openmobilealliance.s-cab-external-search/global/")/pcc/person-
   details
```

```
          where ($u/address/com-addr/uri-entry/addr-uri="sip:bob@example.com")
          return <pcc>{$u/person-details}</pcc>
      ]]>
        </query>
       <sc10:datasource>white_pages@example.com</sc10:datasource>
      </request>
    </search>
    </search-set>
```