



Converged Address Book XDM Specification

Candidate Version 1.0 –19 Oct 2010

Open Mobile Alliance
OMA-TS-CAB_XDMS-V1_0-20101019-C

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1. Scope

The Converged Address Book XDMS specific data formats and Application Usage(s) are described in this specification.

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2.2 Informative References

None

3. Terminology and Conventions

3.1 Conventions

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

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

3.2 Definitions

Application Usage	See [OMA XDM Core]
Access Permissions	See [OMA XDM Core]
URI	See [RFC3986].
XCAP User Identifier (XUI)	As defined and specified in [OMA XDM Core]

3.3 Abbreviations

AB	Address Book
AUID	Application Unique ID
PCC	Personal Contact Card
SIP	Session Initiation Protocol
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

The CAB XDMS Technical Specification provides the Application Usages for CAB XML documents.

4.1 Version 1.0

CAB XDMS TS version 1.0 supports the following Application Usages:

- AB Application Usage
- PCC Application Usage
- CAB User Preferences Application Usage
- CAB Feature Handler Application Usage

5. CAB XDM Application Usages

5.1 Address Book

5.1.1 AB Application Usage

5.1.1.1 Structure

The Address Book SHALL conform to the structure described in this sub-clause. The schema definition is provided in sub-clause 5.1.1.3 “XML Schema”.

The <address-book> element:

1. MAY contain one or more <contact> elements, each element indicating a Contact Entry.

Each <contact> element SHALL have an ‘id’ attribute. The structure of the <contact> element is as follows:

- a) SHALL include one or more child elements of the <pcc> as defined in sub-clause 5.2.1.1, with the following clarifications:
 - i The data semantics of the included <pcc> child elements (i.e. <person-details>, <org-details>, and <group-details>) SHALL be supported as described in sub clause 5.2.1.7.
- b) SHALL contain a <contact-status> element, which contains one or more of the following child elements:
 - i zero or one <contact-type> element indicating whether the contact is a CAB or non-CAB user;
 - ii zero or one <entry_status> element indicating the type of the entry, and containing either of the following child element types:
 - 1) zero or more <updated> elements, each indicating that the contact has been updated by the CAB Server, as a result of notifications from incoming subscription request(s) and Contact Share data, Contact Subscription, Contact Import by the contact into his/her address book. The <updated> elements SHALL include ‘ack’ attribute to indicate the whether the <updated> contact has been acknowledged or read by the CAB Client or not.
 - 2) zero or one <temporary> element indicating that the contact is created by the CAB Server, when the contact is not in the User’s AB, and/or the contact requires interaction from CAB User (i.e. Contact Subscription for the cases where the CAB User disabled automatic updates to his/her AB and updates are received from the subscription to a contact’s PCC, Contact Import, Contact Share by the contact into his/her address book, and incoming subscription request). The <temporary> elements MAY include a ‘contactIdRef’ attribute. The <temporary> elements SHALL include ‘accept’ attribute to indicate whether the CAB Client has accepted or rejected the <temporary> contact.
 - iii zero or one <contact-subscription-status> element, indicating the outgoing subscription status for this contact;
 - iv zero or one <contact-source> element, indicating the latest source from which the contact data was obtained or updated.

5.1.1.2 Application Unique ID

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

5.1.1.3 XML Schema

The AB document SHALL conform to the XML schema described in [XSD_cab_AB].

5.1.1.4 Default Namespace

The AB document default element namespace is "urn:oma:xml:cab:address-book".

5.1.1.5 MIME Type

The MIME type for the Address Book document SHALL be "application/vnd.oma.cab-address-book+xml".

5.1.1.6 Validation Constraints

The child elements person-details, organization-details, and group-details elements of the <contact> parent element can occur zero or an unbounded number of times. The child <contact-status> element of the <contact> element can occur 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 child elements of the <contact-status> 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 <entry-status> element, the child element <updated> can appear zero or an unbounded number of times. The child element <temporary> can appear zero or one 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", and the name of the element SHALL be included, as well.

The value of the 'id' attribute of a <contact> element generated by the XDM Agent in the CAB Server SHALL be unique within the AB document. The AB Application Usage SHALL ensure the uniqueness of the 'id' attribute as defined in the sub-clause 5.1.1.7 "Data Semantics". If this 'id' attribute value is not unique or does not conform to any local policy, the AB Application Usage SHALL respond with an error to the XDM Agent in the CAB Server as specified in [OMA XDM Core] sub-clause 6.2.1 "Document Management".

5.1.1.7 Data Semantics

The 'id' attribute of a <contact> element is a "token" and unique across all <contact> elements within an <address-book>. It SHALL be generated by the CAB Server.

The <contact-type> element is of type String. If the contact is non-CAB User the element SHALL NOT be present. If the contact is CAB User, the value of the element SHALL be set to "CAB".

The <contact-subscription-status> element is of type String. If the element is not present, it implies that there is no Contact Subscription to this contact that has been setup. If present, the element SHALL have one of following possible values based on the [RFC3265] sub-clause 3.2.2 and extended with the following additions and clarifications:

Value	Definition
"active"	value indicates that the subscription has been accepted and has been authorized by the contact;
"pending"	value indicates that the subscription has been received, but that the information in contact's PCC Access Permissions is insufficient to accept or deny the subscription at this time.
"denied"	value indicates that the subscription is not active since it is not allowed by the access permission or service provider policy. The value "terminated" from [RFC3265] MAY be mapped to this value.
"invalid_filter"	value indicates an invalid filter-set element

"not_found"	value indicates the subscription is not active since the target contact could not be identified as a CAB User. The value "terminated" from [RFC3265] MAY be mapped to this value.
"other_error"	value indicates that the subscription is not active. The value "terminated" from [RFC3265] MAY be mapped to this value.

Table 1 : <contact-subscription-status> values

If the <entry_status> element is not present, the Contact Entry is considered to be in normal state.

The <updated> element value is of type "String", and SHALL include one of the following enumeration values:

Value	Definition
incoming subscription request	value indicates that an incoming subscription request is received from the associated contact (that is a CAB User).
contact subscription	value indicates that the contact was updated as a result of outgoing Contact Subscription updates
contact imported	value indicates that the contact was updated as a result of importing non-CAB data
contact-share	value indicates that accepted contact share data received has resulted in an updated Contact Entry.

Table 2 : <updated> element values

The 'ack' attribute value is of type "Boolean" with one of the following values:

true – to indicate that CAB Client has acknowledged the <updated> contact

false – to indicate that CAB Client has not acknowledged the <updated> contact. The default value is 'false'.

The <temporary> element value is of type "String" and SHALL include one of the following enumeration values:

Value	Definition
contact subscription	value indicates that the contact was created as a result of outgoing Contact Subscription updates
contact imported	value indicates that the contact was created as a result of importing non-CAB data
incoming subscription request	value indicates that the contact was created as result of incoming subscription request from other CAB User.
contact-share	value indicates that contact share data that was received needs to be confirmed and has resulted in a temporary Contact Entry.

Table 3 : <temporary> element values

The 'accept' attribute value is of type "String" and SHALL be set to one of the following numeration value "yes" or "no".

yes – to indicate that the CAB User has accepted the <temporary> contact.

no – to indicate that the CAB User has rejected the <temporary> contact.

The ‘contactIdRef’ attribute is of type “String”. In the case where <temporary> element is used for user interaction, this attribute indicates a reference to the Contact Entry to which the temporary contact <entry_status> is associated with. It SHALL be set to a valid reference i.e. to an ‘id’ attribute value of the existing <contact> element.

The <contact-source> element SHALL indicate the source from which the contact data was obtained or updated (e.g. name of the external source) and it is of type “String”. If the element is not present, the contact source is CAB.

5.1.1.8 Naming conventions

There SHALL be only one AB document per XUI. The name of the AB document SHALL be “address-book.xml”.

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 Access Permissions

The Access Permissions for manipulating AB documents, i.e. create, delete, retrieve and modify, SHALL conform to [OMA XDM Core] sub-clause 5.6 “Access Permissions Document”

The Access Permissions document SHALL conform to [OMA XDM Core] sub-clause “*Access Permissions Document*” with the following restrictions:

1. The <document-rule> element SHALL include a “path” attribute specifying the AB 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].

By default, the Access Permissions document SHALL contain full access rights to the AB XML document for the CAB User (owner) and the CAB Server.

The ‘xui-type’ attribute SHALL be set to read-only, as it transparently reflects the value received from contact’s PCC structure.

5.1.1.12 Search Capabilities

The AB Application Usage SHALL support search requests on the AB documents and the following rules apply in addition to the procedures defined in [OMA XDM Core]:

1. support a collection “org.openmobilealliance.cab-address-book/users/[XUI]/AB” where [XUI] represents the XUI of a CAB User and AB represents the Address Book document name, subject to Access Permissions as specified in subclause 5.1.1.11 “Access Permissions”.
2. The basic XQuery expression [OMA XDM Core] supported by the AB XDMS for this Application Usage SHALL be as follows:
xquery version "1.0";
declare default element namespace "urn:oma:xml:cab:-address-book";

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].

5.1.1.13 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 Forwarding as described in sub-clause 5.1.1.15.

5.1.1.14 History Information Document

The AB Application Usage SHALL support History Function on the AB documents. AB History document is described in [OMA XDM Core], sub-clause “*XML Document Management Specification*”.

5.1.1.15 Forwarding

The AB Application Usage SHALL support forwarding of AB Document as specified in [OMA XDM Core], sub-clause 6.2.6.2. “*XDM Resource Forwarding Operations*”. The AB Application Usage SHALL support forwarding of one or more Contact Entries

The AB Application on the receiving side SHALL handle the received XDM Forward Request as specified in [OMA XDM Core], sub-clause “*XDM Resource Forwarding Operations*” with the following clarifications:

- SHALL update the AB XML Document of the recipient by storing the received contact shared data (i.e. AB Data) into a <contact> element and setting the <updated> element of the <contact-status> to the value “contact share”, if the preference set by the CAB User in the XDM Preferences Document is “accept”.
- SHALL update the AB XML Document of the recipient by stroing the received contact shared data (i.e. AB Data) into a <contact> and setting <temporary> child element of the <contact-status> to the value “contact share”, if the preference set by the CAB User in the XDM Preferences Document is “confirm”.

5.1.1.15 Document Reference

The AB Application Usage MAY support Document Reference of an AB document as described in [OMA XDM_Core] subclause 6.2.6.1 “*Document Reference*”.

5.1.1.16 Restore

Not applicable.

5.2 PCC

5.2.1 PCC Application Usage

5.2.1.1 Structure

The PCC document SHALL conform to the structure of the CAB PCC document and described in this subclause. The schema definition is provided in subclause 5.2.1.3.

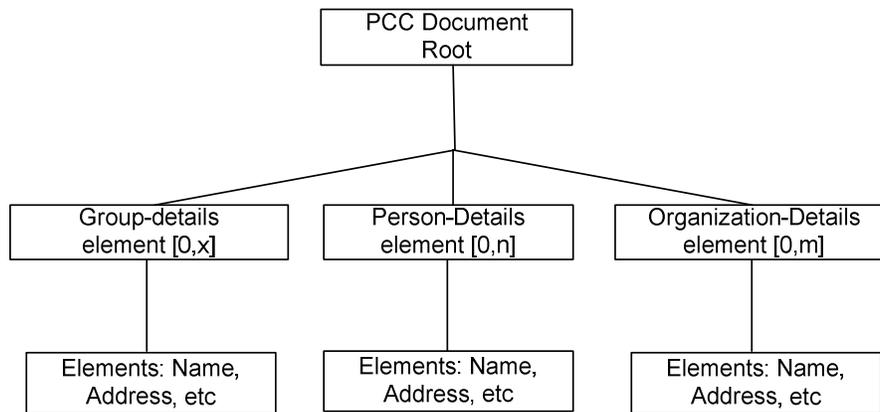


Figure X: High Level PCC Document Schema

The <pcc> document 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. Each detail element represents the information pertinent to a known entity.

The document SHALL include one root element <pcc> that SHALL have a ‘pcc-type’ attribute. 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.

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. 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. one <title> elements, indicating the title (e.g., Mr., Ms., Miss.).
 - ii. one <given > element, indicating the given name.
 - iii. one <middle > element, indicating the middle name.
 - iv. one <family > element, indicating the family name.
 - v. one or more <gen_id> element, indicating the generation identifier (e.g., Jr., Sr., III). This element SHALL have an ‘display-order’ attribute, which provides the order of the generation identifiers;
 - vi. one or more <degree> element, 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;
 - vii. one or more <phonetic_given> 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;
 - viii. one or more <phonetic_family> 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;
 - ix. a <display_name> element, indicating the display name that is 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 a 'index', and MAY contain a ‘pref’ and an ‘addr-type’ attribute. Each <address-entry> element MAY:

- 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> 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. or the following structure:
 - 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 'region-type' attribute.
 - 3) a <locality> element, which represents the locality in which this address is located (e.g. city, town...). The <locality> element SHALL have a 'location-type' attribute that indicates the type of the locality (e.g. town, suburb). The element:
 - (a) SHALL contain a <locality-element> 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 a <intersection> element, indicating additional information related to the street and:
 - (i) SHALL contain a <int-name> element, indicating the intersecting street name
 - (ii) MAY contain a <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 SHALL contain:
 - (a) a <post-code-main> element
 - (b) 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 with an 'index' and 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 with an 'index' and 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 with an 'index' and 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 contains
 - 1) <degrees-measure> element
 - 2) <minutes-measure> element
 - 3) <seconds-measure> element
 - 4) <lat-sign> element
 - iii. a <longitude> element, indicating the longitude. The element contains
 - 1) <degrees-measure> element
 - 2) <minutes-measure> element
 - 3) <seconds-measure> element
 - 4) <long-sign> element
 - iv. an <altitude> element, indicating the altitude of the location
 - 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> child 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> child element that represents a PBX extension.
- 3) MAY have a <label> child 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
- i. SHALL contain either zero or one <date> element, and/or zero or more <non-greg-date> element. The <date> element represents Gregorian type calendar. 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). The <non-greg-date> element SHALL have an 'index' attribute.
 - ii. SHALL contain 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 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, and MAY include 'pref' 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 'display-order' 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:
 - i. SHALL include a <history-description> element that MAY have a 'history-type' attribute. This element contains a description of a qualification, school, certification, occupation, license, etc.
 - 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 text information related to the user.
- s) MAY include one <public-note> element, containing free-style information related to the user.
- t) Any other elements from any other namespaces for the purpose of extensibility.
- u) MAY include one or more <service-provider-specific> elements containing free style information regarding to the CAB user defined by the operator. It MAY contain
 - i. <service-provider-specific-label> element to describe the nature of this information.
 - ii. <sp-data> element that contains any information defined by the Service Provider.

2. The <organization_details> element 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. Each <org_member> element SHALL contain one of the following:
 - i. a <url> element, which is a URL identifying person related information
 - ii. a <details> element which:
 - 1) SHALL contain a <person-details-ref> element pointing to a <person-details> element inside the same document. The referenced <person-details> element SHALL contain at least the <name> and <comm-addr> elements.
 - 2) MAY contain a <position> element, indicating a position within the organization entity.
 - 3) MAY contain a <role> element, indicating a role 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.

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_member-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 SHALL contain one of the following

- i. a <url> element, which is a URL identifying person or organization related information; or,
- ii. a <details> element which:
 - 1) SHALL contain a <person-details-ref> element pointing to a <person-details> element or <org-details-ref> inside the same document. A referenced <person-details> element SHALL contain at least the <name> and <comm-addr> elements. A referenced <org-details> element SHALL contain at least the <org-name> and <comm-addr> elements.
 - 2) MAY include a <group_uri> element that indicates the URI to the group data.
 - 3) 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).
 - 4) 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).
 - 5) 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).
 - 6) 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).
 - 7) 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. 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.

5.2.1.2 Application Unique ID

The AUID SHALL be "org.openmobilealliance.cab-pcc".

5.2.1.3 XML Schema

The PCC document SHALL conform to the XML schema described in [XSD_cab_PCC].

5.2.1.4 Default Namespace

The PCC document default element namespace is "urn:oma:xml:cab:pcc".

5.2.1.5 MIME Type

The MIME type for the PCC document SHALL be "application/vnd.oma.cab-pcc+xml".

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> and <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 <title>, <given>, <middle>, <family>, and <display-name> elements occur zero or 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", and the name of the element SHALL be included, as well.

In the <address-entry> element, the <label>, <location>, and <address-data> 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 <address-detailed> elements, the 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 <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.

In the <org-member> element, the <person-details> child element SHALL appear once, and the <position> and <role> 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-member> element, one <URL> or <details> element SHALL appear. In the <details> element, either one <person-details-ref> or <org-details-ref> child element SHALL appear, and the <position> and <role> child elements MAY appear. 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> element.

The <org_directory> is mutually exclusive with the <org_members> element.

The PCC Application Usage in the CAB XDMS SHALL ensure the uniqueness of the ‘index’ attribute as defined in the sub-class 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.

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,

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_given >, <phonetic_family >, 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”, and “OfficialName”.

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 <location_name> element value is of type “String”.

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

The <member> element value is of type “anyURI”, and identifies a <person_details> type element or an "any" type element. Two examples of <member> elements are: An XDM Shared Reference [OMA XDM Core] and an XCAP URI [RFC4284].

The <group_uri> element value is of type “anyURI”.

The ‘addr-type’ SHALL be one of the following enumerations: “home”, “work”, “business”, “travel” and “other”.

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 <altitude> element value is of type “Number” and is specified in meters.

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

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’, which can take the values: "city", "state", "territory", "province" or “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”, or “Zone”;

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

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

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

The <str-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-name-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 <date> element value is of type dateTime.

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

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

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

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

The <history-description> 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”, “Bahá’í”, “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”, “Minguo”, “Nanakshahi”, “Nepal Sambat”, “Soviet”, “Tamil”, “Tibetan”, “Thai”, “Vietnamese”, “Xhosa”, “Yoruba”.

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”.

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 <role> element value is of type “String”.

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

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

The ‘history-type’ attribute SHALL be of the following enumerations: “school”, “occupation”, “certification”, “license”, “qualification”, or “other”.

The ‘e-level’ attribute rates the <expertise> level and SHALL be one of the following enumerations: “beginner”, “average” or “expert”.

The <hobby> element value is of type “String”. The default value of ‘h-level’ attribute value SHALL be one of the following enumerations: “high”, “medium” or “low”.

The <interest> element value is of type “String”. The default value of ‘i-level’ attribute value ranks the <interest> multiple occurrences and SHALL be one of the following enumerations: “high”, “medium” or “low”.

The ‘display-order’ attribute value is of type integer and MUST be unique. The value “1” is first.

The <public-note> element value is of type “String”.

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 <sp-data> > element value is type of “String”.

The <service-provider-specific-label> element value is type of “String”.

The ‘addr-uri-type’ attribute is of type “String” and SHALL include one or more of the following enumerated values, separated by a comma: “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 comma: “Work”, “Home”, “fax”, “Mobile”, “fixed”, “email”, “pager”, “video” and “other”.

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".

5.2.1.8 Naming conventions

There SHALL be only one PCC document per XUI. The name of the PCC document SHALL be "PCC.xml".

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 Access Permissions

The Access Permissions for manipulating PCC documents, i.e. create, delete, retrieve and modify, SHALL conform to [OMA XDM Core] sub-clause 5.6 "Access Permissions Document"

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

1. The <document-rule> element SHALL include a "path" attribute specifying the PCC 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].

Access Permissions SHALL be used to authorize Contact Views for incoming Contact Subscriptions. See Appendix B "Contact Views", for more information and examples.

The Access Permissions filters SHALL NOT allow Contact Views to be established over data fields across multiple <person-details> for a single Contact View.

When the 'xui-type' attribute is set to "CAB" it SHALL be read-only except for the PCC Application Usage in CAB XDMS.

The Contact Views generated from Access Permissions SHALL NOT include the 'index' attribute.

The <service-provider-specific> element and its child elements are not accessible by default by the CAB User owner of the PCC XML document.

5.2.1.12 Search Capabilities

The PCC Application Usage SHALL support search requests on the PCC documents 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 subclause 5.2.1.11 "Access Permissions".
2. The basic XQuery expression [OMA XDM Core] supported by the PCC XDMS for 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 chapter SHALL be responded with an HTTP “409 Conflict” error response as defined by [OMA XDM Core].

5.2.1.13 XDM Preferences Document

The 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 5.2.1.14.

5.2.1.14 History Information Documents

The PCC Application Usage SHALL support a Request History Information Document as described in [OMA XDM Core] sub-clause “*Request History Information Document*” for a PCC Document.

5.2.1.15 Forwarding

The PCC Application Usage SHALL support forwarding of a PCC document as described in [OMA XDM Core] sub-clause “*XDM Resource Forwarding Operations*” with the following clarifications:

1. The PCC Application Usage SHALL support forwarding of a complete stored PCC or forwarding of a PCC document with one or more <pcc> elements included selected from a stored PCC Document and
2. The PCC Application Usage SHALL handle the received XDCP Forward and XDCP ForwardRemote requests and do the following:
 - a. Store the received content in the ContactSharePCC.xml document in the corresponding User’s Tree of the recipient, if needs to be stored, subject to the recipient’s preferences residing in the XDM Preferences Document of AB Application Usage;
 - b. Update the <request-notification-list> element corresponding to the AB Application Usage in Forwarding Notification List document [List_XDMS] of the recipients.

5.2.1.16 Restore

Not applicable.

5.3 CAB User Preferences

5.3.1 CAB User Preferences Application Usage

5.3.1.1 Structure

The CAB user preference document SHALL conform to the structure described in this subclause.

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

1. one <cab-upp-set > element:
 - a) MAY include one or more <profile> elements which contain the details of each CAB User Preference profile available to the user. The <profile> element
 - i. SHALL include an ‘id’ attribute that uniquely identifies the CAB user preference profile. If the UPP Directory Application Usage [XDM_UPP_Directory] is used, the ‘id’ attribute value MAY be used as value of the ‘upp-id’ attribute of the CAB profile referenced in the UPP Directory Application Usage [XDM_UPP_Directory], to uniquely identify the 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 Application Usage [XDM_UPP_Directory] is used, the element can also be used to populate the corresponding <display-name> element of the CAB profile element referenced in the UPP Directory Application Usage;
 - iii. MAY include any other attributes or elements from any other namespaces for the purpose of extensibility;
 - iv. MAY include a <auto-synchronize-ab> element indicating whether the AB is synchronized automatically or manually;
 - v. MAY include a <send-notification--contact-added> element indicating whether to send a notification to a new contact when the CAB User adds the new contact (which is a CAB User) in his AB;
 - vi. MAY include a <receive-notification-when-contact-added> element indicating whether to notify the CAB User when another CAB User adds the CAB User in his AB;
 - vii. MAY include a <notify-when-contact-becomes-cab-user> element indicating whether to notify the CAB User when a contact in AB, who was a non-CAB user, becomes a CAB User;
 - viii. MAY include a <notify-when-receive-contact-subscription> element indicating whether to notify the CAB User for incoming Contact Subscription request;
 - ix. MAY include a <notify-on-contact-subscription-update> element indicating whether to notify the CAB User when information resulting from Contact Subscription is received;
 - x. MAY include a <update-ab > element indicating whether the AB is updated automatically when information resulting from different CAB events that cause AB update (e.g. Contact Subscription,) is received;
 - 1) <contact-subscription-update> sub-element indicating whether the AB is updated automatically when information resulting from Contact Subscription is received;
 - 2) <contact-share-update> sub-element indicating whether the AB is updated automatically when information resulting from Contact Share is received;
 - 3) <import-update> sub-element indicating whether the AB is updated automatically when information resulting from import is received;
2. one <subscription-list> element:
- a) MAY contain one or more <entry> elements. Each <entry> :
 - i. SHALL contain a <XUI> element indicating the XCAP User Identifier (XUI) of the contact to subscribe to
 - ii. MAY contain a <filter-set> element per sub-clause 6.1.2.1.2 “XDMC” of [OMA XDM Core].

5.3.1.2 Application Unique ID

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

5.3.1.3 XML Schema

CAB User Preferences document SHALL conform to the XML schema defined in [XSD_cab_user_preferences].

5.3.1.4 Default Namespace

The default element namespace used in the User Preference Application document is "urn:oma:xml:cab:user-prefs".

5.3.1.5 MIME Type

The MIME type for the User Preference document SHALL be “application/vnd.oma.cab-user-prefs+xml”

5.3.1.6 Validation Constraints

5.3.1.7 Data Semantics

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

The <auto-synchronize-ab> element SHALL indicate whether the AB is synchronized automatically or manually. (See CAB-HLF-005 in [CAB RD]). The value is of type “Boolean”. The possible values are:

“false” indicates that the AB is synchronized manually.

“true” indicates that the AB is synchronized automatically.

The default value is “false”.

The <send-notification-contact-added> element SHALL indicate whether to send a notification to a new contact when the CAB User adds the new contact in his AB. (See CAB-HLF-012 in [CAB RD]). 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 CAB User when another CAB User adds the CAB User in his AB. (See CAB-HLF-012 in [CAB RD]). The value is of type “Boolean”. The possible values are:

“false” indicates that the CAB User is not notified.

“true” indicates that the CAB User is notified.

The default value is “false”.

The <notify-when-contact-becomes-cab-user> element SHALL indicate whether to notify the CAB User when a contact in AB, who was a non-CAB user, becomes a CAB User. (See CAB-HLF-013 in [CAB RD]). The value is of type “Boolean”. The possible values are:

“false” indicates that the CAB User is not notified.

“true” indicates that the CAB User is notified.

The default value is “false”.

The <notify-when-receive-contact-subscription> element SHALL indicate whether to notify the CAB User for incoming Contact Subscription request. (See CAB-SUBS-003 in [CAB RD]). The value is of type “Boolean”. The possible values are:

“false” indicates that the CAB User is not notified.

“true” indicates that the CAB User is notified.

The default value is “false”.

The <notify-on-contact-subscription-update> element SHALL indicate whether to notify the CAB User when information resulting from Contact Subscription is received. (See CAB-SUBS-005 in [CAB RD]). The value is of type “Boolean”. The possible values are:

“false” indicates that the CAB User is not notified.

“true” indicates that the CAB User is notified.

The default value is “false”.

The <update-ab > element SHALL indicate whether the AB is updated automatically when information resulting from different CAB events that cause AB update (e.g. Contact Subscription,) is received. It has a <contact-subscription-update> sub-element.

The <contact-subscription-update> sub-element of the <update-ab> element SHALL indicate whether the AB is updated automatically when information resulting from Contact Subscription is received. (See CAB-SUBS-003 in [CAB RD]). The value is of type “Boolean”. The possible values are:

“false” indicates that the AB is not updated automatically..

“true” indicates that the AB is updated automatically to incorporate the received Contact Subscription updates.

The default value is “false”.

The <contact-share-update> sub-element of the <update-ab> element SHALL indicate whether the AB is updated automatically when information resulting from Contact Share is received. The value is of type “Boolean”. The possible values are:

“false” indicates that the AB is not updated automatically..

“true” indicates that the AB is updated automatically to incorporate the received Contact Subscription updates.

The default value is “false”.

The <import-update> sub-element of the <update-ab> element SHALL indicate whether the AB is updated automatically when information resulting from import is received. The value is of type “Boolean”. The possible values are:

“false” indicates that the AB is not updated automatically..

“true” indicates that the AB is updated automatically to incorporate the received Contact Subscription updates.

The default value is “false”.

The <subscription-list> element SHALL indicate the list of <entry> elements to be subscribed.

The <XUI> element indicates a XCAP User Identifier (XUI).

The <filter-set> element is specified in [OMA XDM Core].

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

5.3.1.8 Naming conventions

There SHALL be only one CAB User Preference document per XUI. The name of the CAB User Preference document SHALL be “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 Access Permissions

The Access Permissions for manipulating CAB User Preference documents, i.e. create, delete, retrieve and modify, SHALL conform to [OMA XDM Core] sub-clause 5.6 “Access Permissions Document”

If the Access Permissions document is used, it SHALL conform to [OMA XDM Core] sub-clause “*Access Permissions Document*” with the following restrictions:

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

5.3.1.12 Search Capabilities

Not applicable.

5.3.1.13 XDM Preferences Document

Not applicable.

5.3.1.14 History Information Documents

Not applicable.

5.3.1.15 Forwarding

Not applicable.

5.3.1.16 Restore

Not applicable.

5.4 CAB Feature Handler

5.4.1 CAB Feature Handler Application Usage

This section defines the Application Usage for storing data for CAB User’s feature requests and their response status for the following CAB service features:

- Contact Share
- Scheduled import from Non-CAB address book system(s)

5.4.1.1 Structure

The CAB Feature Handler document SHALL conform to the structure of the “feature handler” document described in this subclause. The schema definition is provided in sub-clause 5.3.2.3

The <feature-handler> element:

1. MAY include one or more <cab-feature> elements indicating an instance of a CAB feature request

Each <cab-feature> element SHALL have an ‘id’ attribute representing a unique ID within the document assigned to each request and:

- a) SHALL include either a <contact-share> or <import-non-cab> element indicating the type of CAB feature request.
- b) SHALL include a <response> element indicating a CAB feature response indicating the status of corresponding CAB feature request type i.e. <contact-share> or <import-non-cab>

Each <contact-share> element indicating a Contact Share request:

- i SHALL contain the <recipients-list> element which includes the <list> child element, indicating the list of recipients to which the contact data is to be shared with. The <list> element SHALL include one or more:
 - 1) <entry> elements with a ‘uri’ attribute indicating the recipient URI
- ii MAY include <note> element which carries the information set by the CAB User.
- iii MAY include <display-name> element which carries the name suggested by the CAB User.
- iv MAY include <delivery-report-request> element to indicate whether the CAB User sharing the contact data would like to request delivery report for the Contact Share request from each of the recipients.
- v MAY include <delivery-report-status> element to indicate the status of the delivery report for the Contact Share request. The <delivery-report-status> element MAY include one or more <delivery-report> elements each indicating the delivery report for the corresponding <recipient-URI>.

Each <delivery-report> element

- 1) SHALL include <entry_report> element with a ‘uri’ attribute to indicate the recipient for which the delivery status is being reported.
- 2) SHALL include <delivery-status> element to indicate the delivery status. The <delivery_status>:
 - (a) SHALL contain a <code> indicating a response status code,
 - (b) MAY contain a <phrase> indicating a phrase associated with the response.

If recipient is a CAB User the <delivery_status> value is aligned with the <delivery-notification-list> in [OMA XDM Core].
- vi SHALL contain a <data> element containing the data or reference to data to be shared

Each <data> element:

- 1) SHALL contain <PCC> and/or <AB> elements

Each <PCC> element MAY contain the following child element:

- (a) a <filter-set> element that contains information about filters to be applied to the CAB User’s PCC before sharing with the recipients

Each <AB> element

- (a) SHALL contain one or more <contact-entry> elements or fields within a contact entry, indicating the contact entry within the CAB User’s address book to be shared.

Each <contact-entry> element:

- (i) SHALL contain a 'contact-entry-reference' attribute indicating the reference to the contact within the CAB User's AB.
- (ii) MAY include <filter-set> element that contains information about filters to be applied to the associated <contact-entry> before sharing with the recipients.

Each <import-non-cab> element contains import data for scheduled Non-CAB address book requests:

- i SHALL contain a <non-CAB-source> element indicating the source (e.g. domain name) of the non-CAB address book system to import the address book data from
- ii SHALL contain a <scheduled-interval> element indicating the interval between the successive accesses to the non-CAB address book system.
- iii SHALL contain an encrypted <credentials> element indicating the credentials necessary to authorize access to the non-CAB address book system

Each <credentials> element:

- 1) SHALL contain a <username> element containing the user name that is used to access the non-CAB address book system
- 2) SHALL contain a <password> element containing the password that is used to access the non-CAB address book system

The security procedures defined in sub clause 5.1.1 *Authentication* [OMA XDM Core] SHALL be supported to ensure secure transfer of <username> and <password> elements over XDM interfaces.

Each <response> element:

- i SHALL contain a <code> indicating a response status code.
- ii MAY contain a <phrase> indicating a phrase associated with the response.

5.4.1.2 Application Unique ID

The AUID SHALL be "org.openmobilealliance.cab-feature-handler".

5.4.1.3 XML Schema

The CAB Feature Handler document SHALL conform to the XML schema in [XSD_cab_feature_handler].

5.4.1.4 Default Namespace

The default element namespace used in the Feature Handler Application document is "urn:oma:xml:cab:feature-handler".

5.4.1.5 MIME Type

The MIME type for the Feature Handler document SHALL be "application/vnd.oma.cab-feature-handler+xml"

5.4.1.6 Validation Constraints

The Feature Handler document SHALL conform to the XML Schema described in sub clause 5.3.2.3 "*XML Schema*",

The <feature-handler> element represents the root node of the Feature Handler App Usage. A 'Feature Handler' document stored in the Users Tree SHALL contain no more than one <feature-handler> element.

If the document proposed by the XDMC includes multiple <feature-handler> elements, then an HTTP “409 Conflict” response including the XCAP error element <constraint-failure> SHALL be returned. If included, the ‘phrase’ attribute SHOULD be set to “No more than one feature-handler element allowed”.

Each <feature-handler> element MAY contain one or more <cab-feature> elements.

Each <cab-feature> element SHALL contain only one of the either a <contact-share> element or an <import-non-cab> element indicating the feature request type.

The <contact-share> element SHALL contain at least one <recipient-URI> element and a <data> element.

The <data> element SHALL contain at least one <PCC> or <AB> element and MAY contain both <PCC> and <AB> elements.

Each <import-non-cab> element SHALL contain only one of each <non-CAB-source>, <credentials> and <scheduled-interval> elements. And each <credentials> element SHALL contain only one of each <username> and <password> elements.

5.4.1.7 Data Semantics

The <feature-handler> element contains a list of one or more <cab-feature> elements in sequence, each representing an instance of a CAB feature request.

The <contact-share> element SHALL indicate that the feature request type is Contact Share.

The ‘uri’ attribute of the <entry> element and of the <entry_report> indicates the URI of the User to which the Contact Share request is targeted. The value SHALL be a valid URI format to support underlying messaging schemes. Example values are “SIP URI”, “TEL URI”, and “mailto” uri.

The <note> element contains free text data to be shared in the Contact Share request. The value SHALL be of type “String”.

The <filter-set> element semantics SHALL conform to [RFC 4661] and [OMA XDM Core] subclause 6.1.1.3.2

The <display-name> element indicates the name suggested by the CAB User to be send with the shared data. The value is of type “String”. This element is intended to be used in the headers of the Contact Share message.

The <delivery-report-request> element indicates the delivery report request preference for the Contact Share request. The value is of type “Boolean”. The possible values:

- “true” if the CAB User requests the delivery report from each of the recipients.
- “false” if the CAB User does not want to receive the delivery report from each of the recipients. This is the default value taken in the absence of <delivery-report-request> element.

The access to <delivery-status> element and its child elements SHALL be set to “read-only” for the CAB Client.

The <code> element of the <delivery-status> is of type String and SHALL contain one of the following values:

- “Pending” indicating that the Contact Share delivery report request is pending
- “Successful” indicating that the Contact Share request is delivered to the recipient
- “Failure” indicating that the Contact Share request could not be delivered to the recipient

The <phrase> element under <delivery-status> indicates a phrase associated with the delivery status. The value SHALL be of type “String”.

The <data> element indicates the data (i.e. PCC and/or AB data) to be shared in the Contact Share request. The <data> element SHALL contain the reference to the data stored in Users Tree of either AB and/or PCC XDMS.

The <PCC> element indicates that the CAB User’s Contact View(s) of his/her own PCC data is being shared with the recipient(s).

The <AB> element indicates that the CAB User's AB data is being shared with the recipients. The <AB> element SHALL include one or more <contact-entry> elements indicating the contact entries from the CAB User's AB to be shared.

Each <contact-entry> SHALL include a 'contact-entry-reference' attribute that indicates a reference to contact entry within the CAB User's address book. The attribute value SHALL be a valid XCAP URI identifying a contact entry reference in the AB.

The <import-non-cab> element SHALL indicate that the feature request type is scheduled import from a non-CAB address book system.

The <non-CAB-source> element indicates the source name (e.g. domain name/address) of the non-CAB address book system. The value SHALL be of type "String". The possible values used for <non-CAB-source> is out of scope of this specification and SHOULD be implemented in an enumeration of values that are subject to service provider's policy.

The <credentials> element indicates the credentials necessary to authorize access to the non-CAB address book system, and contains the following elements

- a) <username> element containing the username identifying the user of the non-CAB address book system. The value SHALL be of type "String".
- b) <password> element containing the password that is used for authentication purposes. The value SHALL be of type "String".

The <scheduled-interval> element indicates the interval between successive accesses to the non-CAB address book system. The value SHALL be of type "Integer", and represents the time in number of hours between each interval. The default value is "0" and SHALL indicate that the request is a one-time non-CAB data import request.

The <response> element SHALL indicate the status of the corresponding CAB feature request. The access to <response> element and its child elements SHALL be set to "read-only" for the CAB Client.

The <code> element SHALL indicate the response status code. The value is of type "String" and SHALL contain one of the following values:

- a) "Success" indicating that the CAB feature request has been successfully processed by the CAB Server.
- b) "Pending" indicating that the CAB feature request is in progress by the CAB Server
- c) "Failure" indicating that the CAB feature request could not be processed by the CAB Server

The <phrase> element indicates a phrase associated with the response. The value SHALL be of type "String".

The 'id' attribute under each of the <contact-share> and <import-non-cab> elements, represents a unique ID within this Application Usage that is assigned to each of the request(s). The value SHALL be of type "String" 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 'id' generation procedure to ensure uniqueness in case of multiple devices assigned by the XDMS at the time of the request. The CAB Feature Handler Application Usage returns the assigned id value in the XCAP response (e.g. 200 OK, 201 Created, 202 Accepted) back to the CAB Client, for each successfully stored request. In case of collisions, the Feature Handler Application Usage SHALL send back an error to the CAB Client as specified in [OMA XDM Core] sub-clause 6.2.1 "Document Management".

Note: The CAB Feature Handler Application Usage may remove the older <cab-feature> requests (i.e. Contact Share and import) with the reference of the "id" attribute if the storage reaches the limit based on the Service Provider's policy.

5.4.1.8 Naming conventions

There SHALL be only one CAB Feature Handler document per XUI. The name of the CAB Feature Handler document SHALL be "feature-handler.xml".

5.4.1.9 Global Documents

This Application Usage defines no Global Document.

5.4.1.10 Resource interdependencies

This Application Usage defines no resource interdependencies.

5.4.1.11 Access Permissions

The Access Permissions for manipulating CAB Feature Handler documents, i.e. create, delete, retrieve and modify, SHALL conform to [OMA XDM Core] sub-clause 5.6 “*Access Permissions Document*”

If the Access Permissions document is used, it SHALL conform to [OMA XDM Core] Section “*Access Permissions Document*” with the following restrictions:

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

5.4.1.12 Search Capabilities

The Feature Handler Application Usage SHALL support search requests on the Feature Handler documents and the following rules apply in addition to the procedures defined in [OMA XDM Core]:

1. support a collection “org.openmobilealliance.cab-feature-handler/users/[XUI]”, subject to Access Permissions as specified in subclause 5.3.2.11 “Access Permissions”.
2. The basic XQuery expression [OMA XDM Core] supported for this Application Usage SHALL be as follows:
xquery version "1.0";
declare default element namespace "urn:oma:xml:cab:feature-handler";

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].

5.4.1.13 XDM Preferences Document

Not applicable.

5.4.1.14 History Information Documents

Not applicable.

5.4.1.15 Forwarding

Not applicable.

5.4.1.16 Restore

Not applicable.

Appendix A. Change History (Informative)

A.1 Approved Version History

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

A.2 Draft/Candidate Version 1.0 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-TS-CAB_XDM-V1_0	07 May 2009	All	Initial draft
	14 Jul 2009	5	Incorporated the following CRs: OMA-MWG-CAB-2009-0212R01-CR_DocumentStructure_CAB_XDMS_TS, OMA-MWG-CAB-2009-0213R01-CR_AUID_AB, OMA-MWG-CAB-2009-0214R01-CR_AUID_PCC, OMA-MWG-CAB-2009-0215R01-CR_AUID_UserPreference
	25 Jul 2009	5.1.1.4, 5.1.1.12 5.2.1.4, 5.2.1.12 1, 3.2	Incorporated the following CRs: OMA-MWG-CAB-2009-0237R01-INP_Search_in_CAB_XDMSs OMA-MWG-CAB-2009-0242R01-CR_Scope_description
	01 Sept 2009	5.3.1.1	Incorporated the following CRs: OMA-MWG-CAB-2009-0257R02-CR_CAB_User_Preference_Structure
	06 Oct 2009	5.3.2	Incorporated the following CRs: OMA-MWG-CAB-2009-0254R04-CR_Service_Handler_App_Usage_Template.doc
	10 Nov 2009	2.1, 3.2 5.1.1.12, 5.2.1.12 5.3.1.1, 5.3.2.1 5.3.2.5, 5.3.2.6 5.3.2.7, B, B.1, B.2, B.3, B.4, B.5, B.6, B.7	Incorporated the following CRs: OMA-MWG-CAB-2009-0249R02-CR_Description_of_CAB_XDM_Application_Usages, OMA-MWG-CAB-2009-0293R01-CR_TS_XDMS_Normative_References, OMA-MWG-CAB-2009-0338R01-CR_CAB_XDMS_SCR_Table_Update OMA-MWG-CAB-2009-0318R01-CR_Feature_Handler_App_Usage_Semantics_and_others.zip
	27 Nov 2009	5.3.1.7, 5.1.1.13	Incorporated the following CRs: OMA-MWG-CAB-2009-0300R01-CR_TS_User_Preference_Semantics, OMA-MWG-CAB-2009-0309R01-CR_TS_History_for_AB.
	16 Dec 2009	5.1.1.5, 5.1.1.8 5.2.1.5, 5.2.1.8 5.3.1.4, 5.3.1.5 5.3.1.8, 5.3.2.1 5.3.2.4, 5.3.2.6 5.3.2.7	Incorporated the following CRs: OMA-MWG-CAB-2009-0368R01-CR_Contact_Share_Request_details; OMA-MWG-CAB-2009-0369-CR_Import_Non_CAB_Request_details; OMA-MWG-CAB-2009-0381R01-CR_MIME_type_for_AB_and_PCC; OMA-MWG-CAB-2009-0382R01-CR_Default_Namespace_of_UPP; CR_MIME_type_for_AB_and_PCC; OMA-MWG-CAB-2009-0384R01-CR_Naming_Conversations_for_AB_PCC_and_UPP
	11 Jan 2010	5.3.2.1, 5.3.2.7 5.3.2.8, 5.3.2.12	Incorporated the following CRs: OMA-MWG-CAB-2009-0389R01-CR_AI_068_Naming_Conventions_for_Feature_Handler_App_Usage;
	18 Jan 2010	5.4	Incorporated the following CRs: OMA-MWG-CAB-2009-0391R01-CR_AI_069_HLF_013_data_storage
	10 Feb 2010	5.3.1.1 5.3.2.1 5.3.2.7	Incorporated the following CRs: OMA-MWG-CAB-2010-0002R01-CR_adding_details_on_CAB_UP; OMA-MWG-CAB-2010-0030R01-CR_Semantics_of_id_element_in_Feature_handler_App_Usage; OMA-MWG-CAB-2010-0031R01-CR_Semantics_of_response_element_in_Feature_handler_App_Usage
	2 March 2010	2.1 5.2.1.1 5.2.1.7	Incorporated the following CRs: OMA-MWG-CAB-2010-0087R03-CR_PCC_data_communication_address; OMA-MWG-CAB-2010-0066R02-CR_PCC_Structure_Semantics

Document Identifier	Date	Sections	Description
	4 March 2010	2.1 5.1.1.1, 5.1.1.7 5.2.1.1, 5.2.1.7 5.2.1.13	Incorporated the following CRs: OMA-MWG-CAB-2010-0071R01_CR_PCC_XDMS_addition; OMA-MWG-CAB-2010-0072R01_CR_AB_structure; OMA-MWG-CAB-2010-0090R01-CR_PCC_data_address-xAL-types;
	8 March 2010	5.1.1.1, 5.1.1.9 5.1.1.10, 5.2.1.9 5.2.1.10, 5.3.1.1 5.3.1.7, 5.3.1.9 5.3.1.10, 5.3.2.1 5.3.2.9, 5.3.2.10 Appendix B	Incorporated the following CRs: OMA-MWG-CAB-2010-088R01_CR_TS_CAB_XDMS_Global_Resources; OMA-MWG-CAB-2010-089R01_CR_TS_CAB_XDMS_UP_FH_AccessPermission; OMA-MWG-CAB-2010-100R01_CR_Client-contact-subscription-list-user-pref-xdms; OMA-MWG-CAB-2010-123R01_CR_PCC_Name_and_Org_Structure; OMA-MWG-CAB-2010-126_CR_AB_XDMS_Contact_Structure
	23 April 2010	5.1.1.14 5.2.1.7 5.2.1.14	Incorporated the following CRs: OMA-COM-CAB-2010-0154-CR_CONR_Resolution_D0168; OMA-COM-CAB-2010-0175R01-CR_CONR_Resolution_D0193
	16 May 2010	2.1, 2.2, 3.2, 5.1.1.7, 5.1.1.11 5.1.1.13 5.2.1.1 5.2.1.11 5.2.1.13 5.3.1.1, 5.3.1.7 5.3.1.11 5.3.2.11 5.4, Appendix C Appendix D	Incorporated the following CRs: OMA-COM-CAB-2010-0142R04-CR_CONR_Resolution_CAB_XDMS_PCC_structure; OMA-COM-CAB-2010-0195-CR_Remove_allow_research_element_under_access_permissions; OMA-COM-CAB-2010-0202R02-CR_CONR_Resolution_HLF_013; OMA-COM-CAB-2010-0208R01-CR_CONRR_CAB_XDMS_D007_to_D013; OMA-COM-CAB-2010-0210R01-CR_D037_section_5_1_1_1_XDMS_TS; OMA-COM-CAB-2010-0217R01-CR_CONR_Resolution_CAB_XDMS_TS_filter_subscription; OMA-COM-CAB-2010-0218R01-CR_CAB_XDMS_D0290_to_D0292
	23 May 2010	5.2.1.6	Incorporated the following CRs: OMA-COM-CAB-2010-0142R04-CR_CONR_Resolution_CAB_XDMS_PCC_structure;
	28 May 2010	2.1, 5.3.2 5.3.2.1, 5.3.2.3 5.3.2.7	Incorporated the following CRs: OMA-COM-CAB-2010-0213R04-CR_CONR_Resolution_CAB_Feature_Handler;
	6 June 2010	5.2.1.13, 5.2.1.14 5.2.1.15, 5.2.1.16 5.3.1.13, 5.3.1.14 5.3.1.15, 5.3.1.16 5.3.2.1, 5.3.2.13 5.3.2.14, 5.3.2.15 5.3.2.16	Incorporated the following CRs: OMA-COM-CAB-2010-0213R04-CR_CONR_Resolution_CAB_Feature_Handler; OMA-COM-CAB-2010-0231R02-CR_CONR_Resolution_D0190_to_D0195; OMA-COM-CAB-2010-0232R02-CR_CONR_Resolution_D0233_to_D0237; OMA-COM-CAB-2010-0233R02-CR_CONR_Resolution_D0260_to_D0263;
	23 June 2010	2.1 5.2.1.7 5.3.1.1	Incorporated the following CRs: OMA-COM-CAB-2010-0226R01-CR_CONR_Resolution_D086; OMA-COM-CAB-2010-0254-CR_UserPreference_XDMS;
	10 July 2010	2.1, 5.1.1.7 5.1.1.11 5.2.1.1, 5.2.1.7 5.2.1.11 5.3.1.1, 5.3.1.3 5.3.1.12 Appendix B Appendix D	Incorporated the following CRs: OMA-COM-CAB-2010-0256R01-CR_resolution_AI_A022_TS_CAB_XDMS; OMA-COM-CAB-2010-0270R01-CR_Action_Item_A021; OMA-COM-CAB-2010-0287R01-CR_XDMS_TS_AB_Personalization; OMA-COM-CAB-2010-0290R01-CR_CAB_XDMS_Appendix_D; OMA-COM-CAB-2010-0296-CR-CONR_Resolution_D0200_D0201_D0217_D0218_D0224_D0231
	22 Jul 2010	5.1.1	Incorporated CR: OMA-COM-CAB-2010-0251R05
	06 August 2010	2.1, 5.1.1	Incorporated CR: Fixed implementation errors for OMA-COM-CAB-2010-0251R05 OMA-COM-CAB-2010-0324R03-CR_closing_comments_section_5.2 OMA-COM-CAB-2010-0308R01-CR_resolution_AI_A028_XDMS_TS
	13 Aug 2010	5.2.1.1 5.2.1.7	Incorporated the following CRs: OMA-COM-CAB-2010-0285R02-CR_Resolution_D167_Cal_type

Document Identifier	Date	Sections	Description
	16 Aug 2010	5.1.1.1 5.1.1.7	Incorporated the following CRs: OMA-COM-CAB-2010-0350- CR_reactive_authorization_e_vote_Option_B_CAB_XDMS_TS
	31 Aug 2010	5.1.1.1, 5.1.1.7 5.1.1.11 5.2.1.7, 5.2.1.11 5.2.1.12, 5.2.1.13 5.2.1.15, 5.3.1.1, 5.3.1.7, 5.3.2.7 Appendix C.	Incorporated the following CRs: OMA-COM-CAB-2010-0391R01- CR_TS_XDMS_CONRR_D0284to289_SCR_table; OMA-COM-CAB-2010-0387R01- CR_Action_Item_A035_Part_2_CAB_XDMS; OMA-COM-CAB-2010-0392R01-CR_Action_Item_A054; OMA-COM-CAB-2010-0397R01-CR_Action_Item_A053; OMA-COM-CAB-2010-0378R02-CR_Action_Item_A037; OMA-COM-CAB-2010-0355-CR_TS_CAB_XDMS_Search; OMA-COM-CAB-2010-0322R01-CR_CONR_Resolution_C0104_C0122; OMA-COM-CAB-2010-0382-CR_CONR_XDMS_TS_D228_D229;
	6 Sept. 2010	2 5.1.1.1 5.1.1.3 5.1.1.6 5.1.1.7 5.1.1.15 5.2.1.1 5.2.1.3 5.2.1.7 5.2.1.11 5.3.1.1 5.3.1.7	Incorporated the following CRs: OMA-COM-CAB-2010-0386R03-CR_CONRR_PCC_schema; OMA-COM-CAB-2010-0352R01-CR_D057_XDMS_TS; OMA-COM-CAB-2010-0363R02-CR_Contact_Id; OMA-COM-CAB-2010-0401R03-CR_CONRR_AB-schema; OMA-COM-CAB-2010-0356-CR_new_sub_element_to_web_resources; OMA-COM-CAB-2010-0361R01- CR_TS_CAB_XDMS_CONRR_D0166_resolution; OMA-COM-CAB-2010-0360R01- CR_TS_CAB_XDMS_CONRR_D084_D0165_resolution; OMA-COM-CAB-2010-0362R01- CR_TS_CAB_XDMS_CONRR_D0202_resolution; OMA-COM-CAB-2010-0389R01- CR_TS_XDMS_CONRR_D29_shareByReference; OMA-COM-CAB-2010-0414R01-CR_CONRR_PCC-schema-was-386R03; OMA-COM-CAB-2010-0384R01-CR_CONRR_Closure_D96_D159_D204;
	7 Sept. 2010		Clean up and Restructure for CAB Feature Handler to align with CAB AD
	8 Sept. 2010	5.2.1.1	Remove the text from OMA-COM-CAB-2010-0356- CR_new_sub_element_to_web_resources; Cleanup through the document
	9 Sept. 2010	5.1.1.13, 5.1.1.14 5.1.1.16, 5.2.1.15 5.2.1.16, 5.3.1.1, 5.3.1.7	Incorporated the following CR: OMA-COM-CAB-2010-0375R04-CR_CONR_Resolution_TS_XDMS
	10 Sept. 2010		Remove Editor's Notes through all the sections with no action.
Candidate Version: OMA-TS-CAB_XDM-V1_0	19 Oct 2010	All	Status changed to Candidate by TP: OMA-TP-2010-0431-INP_CAB_V1_0_ERP_for_Candidate_Approval Editorial fixes

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].

Editor's Note: the following XML examples and filters need to be aligned with the final PCC structure.

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

```
<pcc type="individual">
  <person-details>
    <name view-type='work'>
      <title>Mr</title>
      <given>Joe</given>
      <family>Smith</family>
      <degree>PhD</degree>
      <display-name>Joe Smith</display-name>
    </name>
    <name view-type="personal">
      <given>Joe</given>
      <family>Smith</family>
      <display-name>Joe</display-name>
    </name>
    <address view-type="work">
      <addr-location>
        <location-label> GPS for ABC Consulting </location-label>
        <latitude>
          <degrees-measure>25</degrees-measure>
          <minutes-measure>50</minutes-measure>
          <lat-sign>N</lat-sign >
        </latitude>
        <longitude>
          <degrees-measure>93</degrees-measure>
          <minutes-measure>31</minutes-measure>
          <long-sign>W</long-sign >
        </ longitude >
        <time-zone>
          <tz-label> My work timezone </tz-label>
          <utc-offset> -8 </utc-offset>
          <tz-url>maps.example.com/1234</tz-url>
        </time-zone>
      </addr-location>
    </address>
  </person-details>
</pcc>
```

```
</time-zone>
</addr-location>
<country> USA </country>
<region>TX </region>
<street>
  <str-name> Washington Avenue </str-name>
  <str-number> 1000 </street-number>
</street>
<postal-code>
  <postal-code-main> 11111</postal-code-main>
  <sub-postal-code> 1111 <sub-postal-code>
</postal-code>
</address>
<address view-type="personal">
  <addr-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>
  </addr-location>
  <country> USA </country>
  <region>TX</region>
  <street>
    <str-name> Colorado Blvd </str-name>
    <str-number> 1000 </street-number>
  </street>
  <postal-code>
    <postal-code-main> 22222 </postal-code-main>
    <sub-postal-code> 2222 <sub-postal-code>
  </postal-code>
</address>
<comm-addr>
  <addr-uri addr-uri-type='email'> joe.smith@example.com</addr-uri>
  <comm-label> Personal Email </comm-label>
  <addr-uri addr-uri-type='SIP URI'> SIP:joe.smith@example.com</addr-uri>
  <comm-label> Digital phone </comm-label>
  <tel tel-type='mobile' view-type="work">
```

```

        <tel-nb>
            <tel-str> +1-222-222-2222</tel-str>
        </tel-nb>
    </tel>
    <tel tel-type='home' view-type='personal'>
        <tel-nb>
            <tel-str> +1-111-111-1111</tel-str>
        </tel-nb>
    </tel>
    <tel tel-type='other' view-type="personal, work">
        <tel-nb>
            <tel-str> +1-333-333-3333</tel-str>
        </tel-nb>
    </tel>
</comm.-addr>

```

```

.....
.....
.....
.....

```

</person-details>

<organization-details>

```

.....
.....
.....

```

</organization-details>

</pcc>

Example 1 – Creation of ‘Personal’ Contact View using a filter

```

<?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 cp:id="Personal View">
      <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="Personal View">
      <fi:what>
        <fi:include type="xpath"//pcc:pcc/pcc:person-details/pcc:name[2]</fi:include>
        <fi:include type="xpath"//pcc:pcc/pcc:person-details/pcc:address[2]</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: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

```

<?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 cp:id="Work View">
      <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="Work View">
            <fi:what>
              <fi:include type="xpath"//pcc:pcc/pcc:person-details/pcc:name[1]</fi:include>
              <fi:include type="xpath"//pcc:pcc/pcc:person-details/pcc:address[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 cp:id="Personal View">
      <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="Personal View">
            <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 cp:id="Work View">
      <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="Work View">
            <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>
```

```
</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:

- AB Application Usage
- PCC Application Usage
- CAB User Preference Application Usage
- CAB Feature Handler Application Usage

C.1 AB Application Usages for XDMS

Item	Function	Reference	Requirement
CAB_AB-XOP-S-001-M	Support AB Application Usage	5.1.1	CAB_AB-XOP-S-002-M and CAB_AB-XOP-S-003-M and CAB_AB-XOP-S-004-M and CAB_AB-XOP-S-005-M and CAB_AB-XOP-S-006-M and CAB_AB-XOP-S-007-M and CAB_AB-XOP-S-008-M and CAB_AB-XOP-S-009-M and CAB_AB-SEC-S-001-M and CAB_AB-SRC-S-001-M and CAB_AB-HIS-S-001-M and CAB_AB-FW-S-001-M
CAB_AB-XOP-S-002-M	Support AB document structure	5.1.1.1	CAB_AB-XOP-S-001-M and XDM_Core-XOP-S-001-M
CAB_AB-XOP-S-003-M	Support Application Unique ID of AB document	5.1.1.2	
CAB_AB-XOP-S-004-M	Support XML schema of AB document	5.1.1.3	
CAB_AB-XOP-S-005-M	Support default name space of AB document	5.1.1.4	
CAB_AB-XOP-S-006-M	Support MIME type of AB document	5.1.1.5	
CAB_AB-XOP-S-007-M	Support validation constraints of AB document	5.1.1.6	
CAB_AB-XOP-S-008-M	Support data semantics of AB document	5.1.1.7	
CAB_AB-XOP-S-009-M	Support naming conventions for AB document	5.1.1.8	
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
CAB_AB-SRC-S-001-M	Support search capabilities for AB document	5.1.1.12	CAB_AB-XOP-S-001-M and XDM_Core-SRC-S-001-O and XDM_Core-SRC-S-002-O and

Item	Function	Reference	Requirement
			XDM_Core-SRC-S-003-O
CAB_AB-HIS-S-001-M	Support History for AB document	5.1.1.13	CAB_AB-XOP-S-001-M and XDM_Core-MHI-S-001-O and XDM_Core-RHI-S-001-O
CAB_AB-FW-S-001-M	Support Forwarding for AB document	5.1.1.14	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

C.2 AB Application Usages for XDMC

Item	Function	Reference	Requirement
CAB_AB-SEC-C-001-M	Support access permissions of AB document	5.1.1.11	CAB_AB-XOP-C-001-O and XDM_Core-SEC-C-005-O
CAB_AB-SRC-C-001-M	Support search capabilities for AB document	5.1.1.12	CAB_AB-XOP-C-001-O and XDM_Core-SRC-C-001-O and XDM_Core-SRC-C-002-O and XDM_Core-SRC-C-003-O

C.3 AB Application Usages for XDM Agent

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

Item	Function	Reference	Requirement
CAB_AB-XOP-A-006-M	Support MIME type of AB document	5.1.1.5	
CAB_AB-XOP-A-007-M	Support validation constraints of AB document	5.1.1.6	
CAB_AB-XOP-A-008-M	Support data semantics of AB document	5.1.1.7	
CAB_AB-XOP-A-009-M	Support naming conventions for AB document	5.1.1.8	
CAB_AB-SEC-A-001-M	Support access permissions of AB document	5.1.1.11	CAB_AB-XOP-A-001-M and XDM_Core-SEC-A-004-O
CAB_AB-SRC-A-001-M	Support search capabilities for AB document	5.1.1.12	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
CAB_AB-HIS-A-001-M	Support History for AB document	5.1.1.13	CAB_AB-XOP-A-001-M and XDM_Core-MHI-A-001-O and XDM_Core-RHI-A-001-O
CAB_AB-FW-A-001-M	Support Forwarding for AB document	5.1.1.14	CAB_AB-XOP-A-001-M and XDM_Core-FWD-C-001-O and XDM_Core-FWD-C-001-O

C.4 PCC Application Usages for XDMS

Item	Function	Reference	Requirement
CAB_PCC-XOP-S-001-M	Support PCC Application Usages	5.2.1	CAB_PCC-XOP-S-002-M and CAB_PCC-XOP-S-003-M and CAB_PCC-XOP-S-004-M and CAB_PCC-XOP-S-005-M and CAB_PCC-XOP-S-006-M and CAB_PCC-XOP-S-007-M and CAB_PCC-XOP-S-008-M and CAB_PCC-XOP-S-009-M and CAB_PCC-SEC-S-001-M and CAB_PCC-SRC-S-001-M and CAB_PCC-PRF-S-001-M and CAB_PCC-HIS-S-001-M and CAB_PCC-FW-S-001-M
CAB_PCC-XOP-S-002-M	Support PCC document structure	5.2.1.1	CAB_PCC-XOP-S-001-M and XDM_Core-XOP-S-001-M
CAB_PCC-XOP-S-003-M	Support Application Unique ID of PCC document	5.2.1.2	
CAB_PCC-XOP-S-004-M	Support XML schema of PCC document	5.2.1.3	
CAB_PCC-XOP-S-005-M	Support default name space of PCC document	5.2.1.4	

Item	Function	Reference	Requirement
CAB_PCC-XOP-S-006-M	Support MIME type of PCC document	5.2.1.5	
CAB_PCC-XOP-S-007-M	Support validation constraints of PCC document	5.2.1.6	
CAB_PCC-XOP-S-008-M	Support data semantics of PCC document	5.2.1.7	
CAB_PCC-XOP-S-009-M	Support naming conventions for PCC document	5.2.1.8	
CAB_PCC-SEC-S-001-M	Support access permissions of PCC document	5.2.1.11	CAB_PCC-XOP-S-001-M and XDM_Core-SEC-S-003-O
CAB_PCC-SRC-S-001-M	Support search capabilities for PCC document	5.2.1.12	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
CAB_PCC-PRF-S-001-M	Support XDM Preference Document for PCC document	5.2.1.13	CAB_PCC-XOP-S-001-M and XDM_Core-PRF-S-001-O
CAB_PCC-RHI-S-001-M	Support Request History Information for PCC document	5.2.1.14	CAB_PCC-XOP-S-001-M and XDM_Core-RHI-S-001-O
CAB_PCC-FW-S-001-M	Support Forwarding for PCC document	5.2.1.15	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

C.5 PCC Application Usages for XDMC

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

Item	Function	Reference	Requirement
CAB_PCC-XOP-C-003-M	Support Application Unique ID of PCC document	5.2.1.2	
CAB_PCC-XOP-C-004-M	Support XML schema of PCC document	5.2.1.3	
CAB_PCC-XOP-C-005-M	Support default name space of PCC document	5.2.1.4	
CAB_PCC-XOP-C-006-M	Support MIME type of PCC document	5.2.1.5	
CAB_PCC-XOP-C-007-M	Support validation constraints of PCC document	5.2.1.6	
CAB_PCC-XOP-C-008-M	Support data semantics of PCC document	5.2.1.7	
CAB_PCC-XOP-C-009-M	Support naming conventions for PCC document	5.2.1.8	
CAB_PCC-SEC-C-001-M	Support access permissions of PCC document	5.2.1.11	CAB_PCC-XOP-C-001-M and XDM_Core-SEC-C-005-O
CAB_PCC-SRC-C-001-M	Support search capabilities for PCC document	5.2.1.12	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
CAB_PCC-PRF-C-001-M	Support XDM Preference Document for PCC document	5.2.1.13	CAB_PCC-XOP-C-001-M and XDM_Core-PRF-C-001-O

C.6 PCC Application Usages for XDM Agent

Item	Function	Reference	Requirement
CAB_PCC-XOP-A-001-M	Support PCC Application Usages	5.2.1	CAB_PCC-XOP-A-002-M and CAB_PCC-XOP-A-003-M and CAB_PCC-XOP-A-004-M and CAB_PCC-XOP-A-005-M and CAB_PCC-XOP-A-006-M and CAB_PCC-XOP-A-007-M and CAB_PCC-XOP-A-008-M and CAB_PCC-XOP-A-009-M and CAB_PCC-SEC-A-001-M and CAB_PCC-SRC-A-001-M and CAB_PCC-PRF-A-001-M and CAB_PCC-HIS-A-001-M and CAB_PCC-FW-A-001-M
CAB_PCC-XOP-A-002-M	Support PCC document structure	5.2.1.1	CAB_PCC-XOP-A-001-M and XDM_Core-XOP-A-003-M
CAB_PCC-XOP-A-003-M	Support Application Unique ID of PCC document	5.2.1.2	
CAB_PCC-XOP-A-004-M	Support XML schema of	5.2.1.3	

Item	Function	Reference	Requirement
	PCC document		
CAB_PCC-XOP-A-005-M	Support default name space of PCC document	5.2.1.4	
CAB_PCC-XOP-A-006-M	Support MIME type of PCC document	5.2.1.5	
CAB_PCC-XOP-A-007-M	Support validation constraints of PCC document	5.2.1.6	
CAB_PCC-XOP-A-008-M	Support data semantics of PCC document	5.2.1.7	
CAB_PCC-XOP-A-009-M	Support naming conventions for PCC document	5.2.1.8	
CAB_PCC-SEC-A-001-M	Support access permissions of PCC document	5.2.1.11	CAB_PCC-XOP-A-001-M and XDM_Core-SEC-A-004-O
CAB_PCC-SRC-A-001-M	Support search capabilities for PCC document	5.2.1.12	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
CAB_PCC-PRF-A-001-M	Support XDM Preferences Document for PCC document	5.2.1.13	CAB_PCC-XOP-A-001-M and XDM_Core-PRF-A-001-O
CAB_PCC-RHI-A-001-M	Support Request History Information Documents for PCC document	5.2.1.14	CAB_PCC-XOP-A-001-M and XDM_Core-RHI-A-001-O
CAB_PCC-FW-A-001-M	Support forwarding for PCC document	5.2.1.15	CAB_PCC-XOP-A-001-M and XDM_Core-FWD-C-001-O and XDM_Core-FWD-C-002-O

C.7 CAB User Preference Application Usages for XDMS

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

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

C.8 CAB User Preference Application Usages for XDMC

Item	Function	Reference	Requirement
CAB_UP-XOP-C-001-M	Support CAB User Preference Application Usage	5.3.1	CAB_UP-XOP-C-002-M and CAB_UP-XOP-C-003-M and CAB_UP-XOP-C-004-M and CAB_UP-XOP-C-005-M and CAB_UP-XOP-C-006-M and CAB_UP-XOP-C-007-M and CAB_UP-XOP-C-008-M and CAB_UP-XOP-C-009-M and CAB_UP-SEC-C-001-M
CAB_UP-XOP-C-002-M	Support CAB User Preference document structure	5.3.1.1	CAB_UP-XOP-C-001-M and XDM_Core-XOP-C-003-M
CAB_UP-XOP-C-003-M	Support Application Unique ID of CAB User Preference document	5.3.1.2	
CAB_UP-XOP-C-004-M	Support XML schema of CAB User Preference document	5.3.1.3	
CAB_UP-XOP-C-005-M	Support default name space of CAB User Preference document	5.3.1.4	
CAB_UP-XOP-C-006-M	Support MIME type of CAB User Preference document	5.3.1.5	
CAB_UP-XOP-C-007-M	Support validation constraints of CAB User	5.3.1.6	

Item	Function	Reference	Requirement
	Preference document		
CAB_UP-XOP-C-008-M	Support data semantics of CAB User Preference document	5.3.1.7	
CAB_UP-XOP-C-009-M	Support naming conventions for CAB User Preference document	5.3.1.8	
CAB_UP-SEC-C-001-M	Support access permissions of CAB User Preference document	5.3.1.11	

C.9 CAB User Preference Application Usages for XDM Agent

Item	Function	Reference	Requirement
CAB_UP-XOP-A-001-M	Support CAB User Preference Application Usage	5.3.1	CAB_UP-XOP-A-002-M and CAB_UP-XOP-A-003-M and CAB_UP-XOP-A-004-M and CAB_UP-XOP-A-005-M and CAB_UP-XOP-A-006-M and CAB_UP-XOP-A-007-M and CAB_UP-XOP-A-008-M and CAB_UP-XOP-A-009-M and CAB_UP-SEC-A-001-M
CAB_UP-XOP-A-002-M	Support CAB User Preference document structure	5.3.1.1	CAB_UP-XOP-A-001-M and XDM_Core-XOP-A-003-M
CAB_UP-XOP-A-003-M	Support Application Unique ID of CAB User Preference document	5.3.1.2	
CAB_UP-XOP-A-004-M	Support XML schema of CAB User Preference document	5.3.1.3	
CAB_UP-XOP-A-005-M	Support default name space of CAB User Preference document	5.3.1.4	
CAB_UP-XOP-A-006-M	Support MIME type of CAB User Preference document	5.3.1.5	
CAB_UP-XOP-A-007-M	Support validation constraints of CAB User Preference document	5.3.1.6	
CAB_UP-XOP-A-008-M	Support data semantics of CAB User Preference document	5.3.1.7	
CAB_UP-XOP-A-009-M	Support naming conventions for CAB User Preference document	5.3.1.8	
CAB_UP-SEC-A-001-M	Support access	5.3.1.11	CAB_UP-XOP-A-001-M and

Item	Function	Reference	Requirement
	permissions of CAB User Preference document		XDM_Core-SEC-A-004-O

C.10 CAB Feature Handler Application Usage for XDMS

Item	Function	Reference	Requirement
CAB_FH-XOP-S-001-M	Support CAB Feature Handler Application Usage	5.3.2	CAB_FH-XOP-S-002-M and CAB_FH-XOP-S-003-M and CAB_FH-XOP-S-004-M and CAB_FH-XOP-S-005-M and CAB_FH-XOP-S-006-M and CAB_FH-XOP-S-007-M and CAB_FH-XOP-S-008-M and CAB_FH-XOP-S-009-M and CAB_FH-SEC-S-001-M and CAB_FH-SRC-S-001-M
CAB_FH-XOP-S-002-M	Support CAB Feature Handler document structure	5.3.2.1	CAB_FH-XOP-S-001-M and XDM_Core-XOP-S-001-M
CAB_FH-XOP-S-003-M	Support Application Unique ID of CAB Feature Handler document	5.3.2.2	
CAB_FH-XOP-S-004-M	Support XML schema of CAB Feature Handler document	5.3.2.3	
CAB_FH-XOP-S-005-M	Support Default Namespace for CAB Feature Handler document	5.3.2.4	
CAB_FH-XOP-S-006-M	Support MIME type of CAB Feature Handler document	5.3.2.5	
CAB_FH-XOP-S-007-M	Support validation constraints of CAB Feature Handler document	5.3.2.6	
CAB_FH-XOP-S-008-M	Support data semantics of CAB Feature Handler document	5.3.2.7	
CAB_FH-XOP-S-009-M	Support naming conventions for Feature Handler document	5.3.2.8	
CAB_FH-SEC-S-001-M	Support access permissions of CAB Feature Handler document	5.3.2.11	CAB_FH-XOP-S-001-M and XDM_Core-SEC-S-003-O
CAB_FH-SRC-S-001-M	Support search capabilities for Feature	5.3.2.12	CAB_FH-XOP-S-001-M and XDM_Core-SRC-S-001-O and

Item	Function	Reference	Requirement
	Handler document		XDM_Core-SRC-S-002-O and XDM_Core-SRC-S-003-O

C.11 CAB Feature Handler Application Usage for XDMC

Item	Function	Reference	Requirement
CAB_FH-XOP-C-001-M	Support CAB Feature Handler Application Usage	5.3.2	CAB_FH-XOP-C-002-M and CAB_FH-XOP-C-003-M and CAB_FH-XOP-C-004-M and CAB_FH-XOP-C-005-M and CAB_FH-XOP-C-006-M and CAB_FH-XOP-C-007-M and CAB_FH-XOP-C-008-M and CAB_FH-XOP-C-009-M and CAB_FH-SEC-C-001-M and CAB_FH-SRC-C-001-M and CAB_FH-ERR-C-001-M and CAB_FH-ERR-C-002-M
CAB_FH-XOP-C-002-M	Support CAB Feature Handler document structure	5.3.2.1	CAB_FH-XOP-C-001-M and XDM_Core-XOP-C-003-M
CAB_FH-XOP-C-003-M	Support Application Unique ID of CAB Feature Handler document	5.3.2.2	
CAB_FH-XOP-C-004-M	Support XML schema of CAB Feature Handler document	5.3.2.3	
CAB_FH-XOP-C-005-M	Support Default Namespace for CAB Feature Handler document	5.3.2.4	
CAB_FH-XOP-C-006-M	Support MIME type of CAB Feature Handler document	5.3.2.5	
CAB_FH-XOP-C-007-M	Support validation constraints of CAB Feature Handler document	5.3.2.6	
CAB_FH-XOP-C-008-M	Support data semantics of CAB Feature Handler document	5.3.2.7	
CAB_FH-ERR-C-001-M	XDMC handling of HTTP “409 Conflict” response from the XDMS	5.3.2.6	
CAB_FH-XOP-C-009-M	Support naming conventions for Feature Handler document	5.3.2.8	

Item	Function	Reference	Requirement
CAB_FH-SEC-C-001-M	Support access permissions of CAB Feature Handler document	5.3.2.11	CAB_FH-XOP-C-001-M and XDM_Core-SEC-C-005-O
CAB_FH-SRC-C-001-M	Support search capabilities for Feature Handler document	5.3.2.12	CAB_FH-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

C.12 CAB Feature Handler Application Usage for XDM Agent

Item	Function	Reference	Requirement
CAB_FH-XOP-A-001-M	Support CAB Feature Handler Application Usage	5.3.2	CAB_FH-XOP-A-002-M and CAB_FH-XOP-A-003-M and CAB_FH-XOP-A-004-M and CAB_FH-XOP-A-005-M and CAB_FH-XOP-A-006-M and CAB_FH-XOP-A-007-M and CAB_FH-XOP-A-008-M and CAB_FH-XOP-A-009-M and CAB_FH-SEC-A-001-M and CAB_FH-SRC-A-001-M and
CAB_FH-XOP-A-002-M	Support CAB Feature Handler document structure	5.3.2.1	CAB_FH-XOP-A-001-M and XDM_Core-XOP-A-003-M
CAB_FH-XOP-A-003-M	Support Application Unique ID of CAB Feature Handler document	5.3.2.2	
CAB_FH-XOP-A-004-M	Support XML schema of CAB Feature Handler document	5.3.2.3	
CAB_FH-XOP-A-005-M	Support Default Namespace for CAB Feature Handler document	5.3.2.4	
CAB_FH-XOP-A-006-M	Support MIME type of CAB Feature Handler document	5.3.2.5	
CAB_FH-XOP-A-007-M	Support validation constraints of CAB Feature Handler document	5.3.2.6	
CAB_FH-ERR-A-001-M	XDMC handling of HTTP “409 Conflict” response from the XDMS	5.3.2.6	
CAB_FH-XOP-A-008-M	Support data semantics of CAB Feature Handler document	5.3.2.7	
CAB_FH-XOP-A-009-M	Support naming	5.3.2.8	

Item	Function	Reference	Requirement
	conventions for Feature Handler document		
CAB_FH-SEC-A-001-M	Support access permissions of CAB Feature Handler document	5.3.2.11	CAB_FH-XOP-A-001-M and XDM_Core-SEC-A-004-O
CAB_FH-SRC-A-001-M	Support search capabilities for Feature Handler document	5.3.2.12	CAB_FH-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
CAB_FH-ERR-A-002-M	XDMC handling of HTTP “409 Conflict” response from the XDMS	5.3.2.12	

Appendix D. Flows

(Informative)

The CAB XDMS document management flows are described in the [CAB TS].

Appendix E. CAB XDMS documents examples (Informative)

E.1 Address Book XML documents

The following is an example of a AB XML document.

```

<address-book xmlns="urn:oma:xml:cab:address-book">
  <contact>
    <person-details id="gt4fd890bu8">
      <name pref="1" xml:lang="en" name-type="LegalName">
        <title>Mr.</title>
        <given>Joesph</given>
        <middle>Samuel</middle>
        <family>Bloggs</family>
        <gen-id>Jr.</gen-id>
        <display-name>Joesph Bloggs</display-name>
      </name>
      <address pref="2" addr-type="other" xml:lang="en">
        <country>US</country>
        <region region-type="state">Alabama</region>
        <locality loc-type="City">Huntsville</locality>
        <postal-delivery-point>
          <postal-delivery-point-name>P.O. Box</postal-delivery-point-name>
          <postal-delivery-name>2367</postal-delivery-name>
        </postal-delivery-point>
        <postal-code>
          <postal-code-main>35811</postal-code-main>
          <sub-postal-code>2367</sub-postal-code>
        </postal-code>
      </address>
      <comm-addr xml:lang="en">
        <addr-uri pref="1" addr-uri-type="email">
          mailto:sjboggs@xmail.com<comm-label>Joe Boggs</comm-label>
        </addr-uri>
        <addr-uri pref="1" addr-uri-type="email">
          mailto:jboggs@email.net<comm-label>Joe Boggs</comm-label>
        </addr-uri>
        <addr-uri pref="3" addr-uri-type="IM">
          joe.boggs@message.com<comm-label>Joe Boggs</comm-label>
        </addr-uri>
        <tel tel-type="Mobile">
          <tel-nb>
            <tel-str>3341234567<tel-str>
          </tel-nb>
        </tel>
        <tel pref="1" tel-type="Home">
          <tel-nb>
            <comm-label>Home Phone</comm-label>
            <E-164>
              <cc>1</cc>
              <ndc>256</ndc>
              <sn>1234567</sn>
            </E-164>
          </tel-nb>
        </tel>
        <tel pref="2" tel-type="Mobile">
          <tel-nb>
            <comm-label>Personal Phone</comm-label>
            <tel-str>1234567<tel-str>
          </tel-nb>
        </tel>
        <tel pref="4" tel-type="Work">
          <tel-nb>

```

```

        <comm-label>Work Phone</comm-label>
        <tel-str>2569230567</tel-str>
        <extension>30567</extension>
    </tel-nb>
</tel>
</comm-addr>
<note xml:lang="en">Wifes name is Mary Jo</note>
<media-list xml:lang="en">
    <media media-content="photo" media-type="image">joel.jpg
        <media-label>Funny Picture</media-label></media>
</media-list>
<public-note xml:lang="en">Another boring Monday :-(</public-note>
</person-details>
<organization-details id="px6fc236bu9">
    <org-name pref="1" org-name-type="OfficialName">
        <display-name>AB Inc.</display-name>
        <entity>Any Biz Inc.</entity>
        <unit>SE Region Sales</unit>
    </org-name>
    <organization-member xml:lang="en">
        <member>CTO</member>
        <position> Technology Development</position>
        <role>Manager</role>
    </organization-member>
    <address pref="2" addr-type="work" xml:lang="en">
        <country>US</country>
        <region region-type="state">Alabama</region>
        <locality loc-type="City">Huntsville</locality>
        <street>
            <str-name>Technology Blvd</str-name>
            <str-number>200</str-number>
        </street>
        <postal-code>
            <postal-code-main>35811</postal-code-main>
        </postal-code>
    </address>
    <comm-addr xml:lang="en">
        <addr-uri addr-uri-type="email">
            sam.boggs@AB.com<comm-label>Samuel Boggs</comm-label>
        </addr-uri>
        <addr-uri pref="1" addr-uri-type="email">
            service@AB.com<comm-label>AB Service</comm-label>
        </addr-uri>
        <tel pref="8" tel-type="Work">
            <tel-nb>
                <comm-label>Customer Service</comm-label>
                <tel-str>2569230500</tel-str>
            </tel-nb>
        </tel>
    </comm-addr>
</organization-details>
<contact-status>
    <contact-type>CAB</contact-type>
    <contact-subscription-status>active</contact-subscription-status>
</contact-status>
</contact>
<contact>
    <person-details id="ab6fd123bg9">
        <name xml:lang="en">
            <title>Ms.</title>
            <given>Mary</given>
            <family>Smith</family>
            <display-name>Mary Smith</display-name>
        </name>
        <address addr-type="Home" xml:lang="en">
            <country>US</country>
            <region region-type="state">Alabama</region>
            <locality loc-type="City">Huntsville</locality>
            <street>
                <str-name>NE Folsom Lane</str-name>
                <str-number>6245</str-number>
            </street>
        </address>
    </person-details>

```

```

    <postal-code>
      <postal-code-main>35845</postal-code-main>
    </postal-code>
  </address>
  <comm-addr xml:lang="en">
    <tel tel-type="Mobile">
      <tel-nb>
        <tel-str>3456667</tel-str>
      </tel-nb>
    </tel>
  </comm-addr>
</person-details>
<contact-status>
  <contact-source>xmail</contact-source>
</contact-status>
</contact>
</address-book>

```

E.2 PCC XML documents

The following is an example of a PCC XML document.

```

<pcc xmlns="urn:oma:xml:cab:pcc">
  <person-details id="gt4fd890bu8">
    <name pref="1" xml:lang="en" name-type="LegalName">
      <title>Mr.</title>
      <given>Joesph</given>
      <middle>Samuel</middle>
      <family>Bloggs</family>
      <gen-id>Jr.</gen-id>
      <degree>PE</degree>
      <phonetic-given>XXXX</phonetic-given>
      <phonetic-family>XXXX</phonetic-family>
      <display-name>Joesph Bloggs</display-name>
    </name>
    <name pref="2" xml:lang="en" name-type="KnownAs">
      <given>Joe</given>
      <family>Bloggs</family>
      <display-name><Joe Bloggs</display-name>
    </name>
    <address pref="1" addr-type="home" xml:lang="en">
      <addr-location>
        <location>
          <location-label>Crib</location-label>
          <latitude>
            <degrees-measure>34</degrees-measure>
            <minutes-measure>38</minutes-measure>
            <seconds-measure>58</seconds-measure>
            <lat-sign>north</lat-sign>
          </latitude>
          <longitude>
            <degrees-measure>86</degrees-measure>
            <minutes-measure>46</minutes-measure>
            <seconds-measure>35</seconds-measure>
            <lat-sign>-</lat-sign>
          </longitude>
          <altitude>216</altitude>
          <time-zone>
            <tz-lable>Central Time Zone</tz-lable>
            <utc-offset>-6</utc-offset>
            <tz-url>XXXX@XXXX</tz-url>
          </time-zone>
        </location>
      </addr-location>
      <country>US</country>
      <region region-type="state">Alabama <sub-region region-type="XXXX">XXXX</sub-region></region>

```

```

<locality loc-type="City">Huntsville <sub-locality subloc-type="XXXX">XXXX</sub-
locality></locality>
  <street>
    <str-name>SE Blossom Lane</str-name>
    <str-number>12345</str-number>
  </street>
  <postal-code>
    <postal-code-main>35811</postal-code-main>
    <sub-postal-code>2367</sub-postal-code>
  </postal-code>
</address>
<address pref="2" addr-type="other" xml:lang="en">
  <country>US</country>
  <region region-type="state">Alabama</region>
  <locality loc-type="City">Huntsville</locality>
  <postal-delivery-point>
    <postal-delivery-point-name>P.O. Box</postal-delivery-point-name>
    <postal-delivery-name>2367</postal-delivery-name>
  </postal-delivery-point>
  <postal-code>
    <postal-code-main>35811</postal-code-main>
    <sub-postal-code>2367</sub-postal-code>
  </postal-code>
</address>
<address pref="3" addr-type="work" xml:lang="en">
  <country>US</country>
  <region region-type="state">Alabama</region>
  <locality loc-type="City">Huntsville</locality>
  <street>
    <str-name>Technology Blvd</str-name>
    <str-number>220</str-number>
  </street>
  <postal-code>
    <postal-code-main>35811</postal-code-main>
    <sub-postal-code>1378</sub-postal-code>
  </postal-code>
  <post-office>
    <postal-code-name>Mailstop: ALHUD0402-4B666</postal-code-name>
  </post-office>
</address>
<address pref="4" addr-type="other" xml:lang="en">
  <country>US</country>
  <region region-type="state">Alabama</region>
  <locality loc-type="City">Huntsville</locality>
  <postal-delivery-point>
    <postal-delivery-point-name>In Care Of</postal-delivery-point-name>
    <postal-delivery-name>Joesph</postal-delivery-name>
    <postal-delivery-name>Blogs</postal-delivery-name>
    <postal-delivery-name>Sr.</postal-delivery-name>
  </postal-delivery-point>
  <street>
    <str-name>Edwards Avenue</str-name>
    <str-number>4908</str-number>
  </street>
  <postal-code>
    <postal-code-main>35814</postal-code-main>
    <sub-postal-code>2376</sub-postal-code>
  </postal-code>
</address>
<location xml:lang="en">
  <location-label>Current Location</location-label>
  <latitude>
    <degrees-measure>34</degrees-measure>
    <minutes-measure>38</minutes-measure>
    <seconds-measure>58</seconds-measure>
    <lat-sign>north</lat-sign>
  </latitude>
  <longitude>
    <degrees-measure>86</degrees-measure>
    <minutes-measure>46</minutes-measure>
    <seconds-measure>35</seconds-measure>
    <lat-sign>-</lat-sign>

```

```

    </longitude>
    <altitude>216</altitude>
    <time-zone>
      <tz-lable>Central Time Zone</tz-lable>
      <utc-offset>-6</utc-offset>
    </time-zone>
  </location>
  <comm-addr xml:lang="en">
    <addr-uri pref="1" addr-uri-type="email">
      mailto:jboggs@email.net<comm-label>Joe Boggs</comm-label>
    </addr-uri>
    <addr-uri pref="2">
      mailto:joe.boggs@emails.com<comm-label>J Boggs</comm-label>
    </addr-uri>
    <addr-uri pref="3" addr-uri-type="IM">
      joe.boggs@message.com<comm-label>Joe Boggs</comm-label>
    </addr-uri>
    <addr-uri pref="9" addr-uri-type="SIP URI">
      sip:+13348453579@voip.com;user=phone<comm-label>Joe Boggs IP Phone</comm-label>
    </addr-uri>
    <tel pref="1" tel-type="Home">
      <tel-nb>
        <comm-label>Home Phone</comm-label>
        <E-164>
          <cc>1</cc>
          <ndc>256</ndc>
          <sn>1234567</sn>
        </E-164>
      </tel-nb>
    </tel>
    <tel pref="2" tel-type="Mobile">
      <tel-nb>
        <comm-label>Personal Phone</comm-label>
        <tel-str>1234567</tel-str>
      </tel-nb>
    </tel>
    <tel pref="3" tel-type="pager">
      <tel-nb>
        <comm-label>Personal Pager</comm-label>
        <tel-uri>tel:+1-334-423-6789</tel-uri>
      </tel-nb>
    </tel>
    <tel>
      <tel-nb>
        <comm-label>Work Pager</comm-label>
        <tel-uri>tel:7042;phone-context=mobilephone.com</tel-uri>
      </tel-nb>
    </tel>
    <tel pref="4" tel-type="Work">
      <tel-nb>
        <comm-label>Work Phone</comm-label>
        <tel-str>2569230567</tel-str>
        <extension>30567</extension>
      </tel-nb>
    </tel>
    <tel pref="9" tel-type="fax">
      <tel-nb>
        <comm-label>Work Fax</comm-label>
        <tel-str>2569232000</tel-str>
        <extension>4205</extension>
      </tel-nb>
    </tel>
  </comm-addr>
  <birth xml:lang="en">
    <birth-date>1957-07-09T06:01:00</birth-date>
    <birth-date cal-type="lunar calendar">1957-06-12T06:01:00</birth-date>
    <birth-place>Saint Joesph Hospital Little Rock, Arkansas</birth-place>
  </birth>
  <anniversary xml:lang="en">
    <anniversary-date>1987-11-14T00:00:00</anniversary-date>
    <anniversary-date cal-type="lunar calendar">1987-09-23T00:00:00</anniversary-date>
    <anniversary-label>Marriage</anniversary-label>
  </anniversary>

```

```

</anniversary>
<gender xml:lang="en">1</gender>
<lang xml:lang="en">
  <language pref="6">English</language>
  <language>Spanish</language>
  <language>Latin</language>
</lang>
<media-list xml:lang="en">
  <media media-content="photo" media-type="image">joe.jpg
    <media-label>My Picture</media-label></media>
  <media media-content="photo" media-type="image">joel.jpg
    <media-label>Funny Picture</media-label></media>
  <media media-content="photo" media-type="video">crash.mp3
    <media-label>Look Out</media-label></media>
</media-list>
<categories xml:lang="en">
  <category>Fishing</category>
  <category>Boating</category>
  <category>Sky Diving</category>
</categories>
<note xml:lang="en">BCCE password DungFly</note>
<web resources xml:lang="en">
  <url>mypics&photolog.com <url-label>JBloggs</url-label></url>
  <url pref="4">mywebsite&webmaker.net <url-label>SBloggs</url-label></url>
</web resources>
<keys xml:lang="en">
  <key key-type="XXXX">X01H3@7<key>
</keys>
<aliases xml:lang="en">
  <service-alias>
    <alias-label>FaceTime</alias-label>
    <alias>SJBloggs</alias>
    <alias-url>sjbloggs476@facetime.com</alias-url>
  </service-alias>
</aliases>
<expertise xml:lang="en">
  <qualifications q-level="expert">Electrical Engineer</qualifications>
  <qualifications>Auto Mechanic</qualifications>
</expertise>
<hobbies xml:lang="en">
  <hobby h-level="high">Coin collecting</hobby>
  <hobby>Flying model planes</hobby>
</hobbies>
<interests xml:lang="en">
  <interest i-level="medium">Travel</interest>
  <interest>Food</interest>
</interests>
<career-history xml:lang="en">
  <school display-order="2">Hayden High School</school>
  <school display-order="1">University of Alabama</school>
  <workplace display-order="1">Joes Tavern</workplace>
</career-history>
<public-note xml:lang="en">Another boring Monday :-(</public-note>
</person-details>
<person-details id="Zm7ht842by9">
  <name xml:lang="en">
    <title>Mr.</title>
    <given>Josey</given>
    <family>Bloggo</family>
    <display-name>Viper</display-name>
  </name>
  <address xml:lang="en">
    <addr-location>
      <location>
        <location-label>stash</location-label>
      </location>
    </addr-location>
    <country>US</country>
    <region>New<sub-region>York</sub-region></region>
    <locality>South<sub-locality>Bronx</sub-locality></locality>
    <street>
      <str-name>Park Avenue</str-name>

```

```

    <str-number>1</str-number>
  </street>
  <postal-code>
    <postal-code-main>10001</postal-code-main>
  </postal-code>
  <extended-address>
    <premises premises-type="apartment">
      <premises-name>Ward Center</premises-name>
      <premises-number>10</premises-number>
      <sub-premises sub-premises-type="suite">
        <sub-premises-name>Suite</sub-premises-name>
        <sub-premises-number>4720</sub-premises-number>
      </sub-premises>
    </extended-address>
  </address>
  <comm-addr xml:lang="en">
    <addr-uri>
      joey.boggo@game.com<comm-label>Joey B</comm-label>
    </addr-uri>
  </comm-addr>
  <gender xml:lang="en">0</gender>
  <anniversary xml:lang="en">
    <anniversary-date>1994-04-10T00:00:00</anniversary-date>
    <anniversary-label>Made</anniversary-label>
  </anniversary>
  <media-list xml:lang="en">
    <media media-content="photo" media-type="image">viper.jpg
    <media-label>Viper Strikes</media-label></media>
  </media-list>
  <public-note xml:lang="en">Make my day</public-note>
</person-details>
<organization-details id="px6fc236bu9">
  <org-name pref="1" org-name-type="OfficialName">
    <display-name>AB Inc.</display-name>
    <entity>Any Biz Inc.</entity>
    <unit>SE Region Sales</unit>
  </org-name>
  <organization-member xml:lang="en">
    <member>CTO</member>
    <position> Technology Development</position>
    <role>Manager</role>
  </organization-member>
  <address pref="2" addr-type="work" xml:lang="en">
    <country>US</country>
    <region region-type="state">Alabama</region>
    <locality loc-type="City">Huntsville</locality>
    <street>
      <str-name>Technology Blvd</str-name>
      <str-number>200</str-number>
    </street>
    <postal-code>
      <postal-code-main>35811</postal-code-main>
    </postal-code>
  </address>
  <org-name pref="2" language="en-US" org-name-type="LegalName">
    <display-name>PTJ</display-name>
    <entity>Part Time Job</entity>
  </org-name>
  <organization-member xml:lang="en">
    <role pref="6">Sales Coordinator</role>
  </organization-member>
  <address pref="3" addr-type="work" xml:lang="en">
    <country>US</country>
    <region region-type="state">Alabama</region>
    <locality loc-type="City">Huntsville</locality>
    <street>
      <str-name>Flower Street</str-name>
      <str-number>1501</str-number>
    </street>
    <postal-code>
      <postal-code-main>35811</postal-code-main>
    </postal-code>
  </address>

```

```

</address>
<comm-addr xml:lang="en">
  <addr-uri pref="1" addr-uri-type="email">
    mailto:service@AB.com<comm-label>AB Service</comm-label>
  </addr-uri>
  <addr-uri addr-uri-type="email">
    mailto:sam.boggs@AB.com<comm-label>Samuel Boggs</comm-label>
  </addr-uri>
  <addr-uri pref="4" addr-uri-type="email">
    mailto:inbox@PTJ.com<comm-label>inbox@PTJ.com</comm-label>
  </addr-uri>
  <tel pref="8" tel-type="Work">
    <tel-nb>
      <comm-label>Customer Service</comm-label>
      <tel-str>2569230500</tel-str>
    </tel-nb>
  </tel>
  <tel pref="4" tel-type="Work">
    <tel-nb>
      <comm-label>Johns Desk</comm-label>
      <tel-str>2564423067</tel-str>
    </tel-nb>
  </tel>
</comm-addr>
<media-list xml:lang="en">
  <media media-content="Logo" media-type="image">AB.jpg
  <media-label>Company Logo</media-label></media>
  <media media-content="Logo" media-type="image">PTJ.jpg
  <media-label>Company Logo</media-label></media>
</media-list>
</organization-details>
<group-details id="zy6fc566bu9">
  <group-name xml:lang="en">Wine Club<display-name>WC</display-name></group-name>
  <group-members xml:lang="en">
    <member>mailto:John_Smith@xyz.com</member>
    <member>456@im.net</member>
    <member>/resource-lists/users/sip:joebloggs@example.com/index</member>
    <member>tel:+1-334-675-8898</member>
    <member>IB There</member>
  </group-members>
  <group-uri>RWDC.net</group-uri>
  <comm-addr xml:lang="en">
    <addr-uri>mailto:8002458120@blog.com<comm-label>WC Blog</comm-label></addr-uri>
  </comm-addr>
</group-details>
</pcc>

```

E.3 CAB User preferences XML documents

E.4 CAB Feature Handler XML documents