Converged Address Book Specification – Format Adaptation

Approved Version 1.0 – 21 Jun 2018

Open Mobile Alliance

OMA-TS-CAB_FormatAdapt-V1_0-20180621-A

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1. Scope

This document is intended to supplement the Converged Address Book (CAB) 1.1 Enabler Technical Specification as specified in [CAB 1.1 TS], by describing additional behaviors and metadata necessary to enable format adaptation.

The scope of this document is limited to the interfaces and metadata required to achieve format adaptation between CAB Format and Legacy Format(s).

2. References

2.1 Normative References

[CAB 1.1 AD] "Converged Address Book Architecture", Version 1.1, Open Mobile Alliance™, OMA-AD-CAB-V1_1, URL:http://www.openmobilealliance.org/

[CAB 1.1 RD] "Converged Address Book Requirements", Version 1.1, Open Mobile Alliance™, OMA-RD-CAB-V1_1, URL:http://www.openmobilealliance.org/

[CAB 1.1 TS] "Converged Address Book (CAB) Specification", OMA-TS-CAB-V1_1, URL:http://www.openmobilealliance.org/

[RFC2119] "Key words for use in RFCs to Indicate Requirement Levels", S. Bradner, March 1997, URL:http://www.ietf.org/rfc/rfc2119.txt

[RFC2425] A MIME Content-Type for Directory Information. T. Howes, M. Smith, F. Dawson. September 1998. URL: http://www.ietf.org/rfc/rfc2425.txt

[RFC2426] vCard MIME Directory Profile. F. Dawson, T. Howes. September 1998.URL: http://www.ietf.org/rfc/rfc2426.txt

[RFC4234] "Augmented BNF for Syntax Specifications: ABNF", D. Crocker, Ed., P. Overell. October 2005, URL:http://www.ietf.org/rfc/rfc4234.txt

[RFC5646] "Tags for Identifying Languages", A. Phillips et al, September 2009, URL:http://www.ietf.org/rfc/rfc5646.txt

[SCRRULES] "SCR Rules and Procedures", Open Mobile Alliance™, OMA-ORG-SCR_Rules_and_Procedures, URL:http://www.openmobilealliance.org/

[vCard2.1] "vCard The Electronic Business Card Version 2.1", A versit Consortium Specification, September 18, 1996 URL: http://www.imc.org/pdi/vcard-21.doc

[W3C-XML] W3C Recommendation "Extensible Markup Language (XML) 1.0", Tim Bray et al, 26 November, 2008, World Wide Web Consortium (W3C), URL: http://www.w3.org/TR/2008/REC-xml-20081126/

2.2 Informative References

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

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

CAB Format	Uses definition from [CAB 1.1 TS].
Enabler	Use definition from [OMADICT].
Legacy Formats	Uses definition from [CAB 1.1 RD].

3.3 Abbreviations

CAB	Converged Address Book
OMA	Open Mobile Alliance
PCC	Personal Contact Card
XML	eXtensible Markup Language

4. Introduction

The OMA Converged Address Book (CAB) 1.1 Enabler provides consistent mechanisms to manage contact information in both user facing applications as well as in support of network facing activities. At the core of the CAB Enabler is a network-based contact repository which a user can use to store contact information. This contact information can be retrieved and utilized by any authorized CAB-enabled device. The network-based contact repository is also able to provide specific contact information to other users and to keep them up-to-date, when the data is updated.

As the CAB Enabler is expected to support many different types of information, it is expected to utilize a data model that is both flexible and extensible. Further, the data model should provide additional support for existing or legacy data formats (e.g. vCard) as a means to exchange data with users who are not already served by the CAB Enabler.

This document specifies the necessary metadata and interactions to support format adaptation between CAB Format and Legacy Format(s).

4.1 Version 1.0

This version includes rules relating to format adaptation between CAB Format and Legacy Format(s), which SHALL be supported by the interworking functions as described in [CAB 1.1 TS] "*Interworking Function*". The Legacy Format(s) referred to include:

- vCard 2.1; and
- vCard 3.0.

5. Format Adaptation

Format adaptation between CAB Format and Legacy Format(s) SHALL be supported by the interworking function as described in [CAB 1.1 TS] "*Interworking Function*".

Legacy Format(s) supported by the CAB interworking function SHALL include:

- vCard 2.1; and
- vCard 3.0.

5.1 vCard 2.1/vCard 3.0

The following sub-section details the supported properties and corresponding semantics between CAB Format and Legacy Format vCard objects, [vCard 2.1], [RFC2425], [RFC2426].

As all vCard 2.1, or vCard 2.0 properties support a LANGUAGE parameter, it is assumed that the LANGUAGE parameter corresponds implicitly to the "xml:lang" [W3C-XML] attribute which is permitted for all Contacts and PCC properties (both "xml:lang" and LANGUAGE refer to [RFC5646]).

5.1.1 CAB Format and Legacy Format vCard Mapping

The following table provides a mapping between CAB Format and Legacy Format vCard objects.

Contacts or PCC Property or attribute	**vCard 2.1 Property/parameter**	**vCard 3.0 Property/parameter**
For PCCs only <pcc>		
"pcc-type" attribute		
For Contacts only <contact>		
<contact-status> Cardinality: (0,1)		
<contact-type> Cardinality: (0,1)		
<type> Cardinality: (1,1)		
<contact-type-source> Cardinality: (0,1)		
<entry-status> Cardinality: (0,1)		
<updated> Cardinality: (0,n)		
<temporary> with "contactIdRef" attribute Cardinality: (0,1)		
"contactIdRef" attribute		
<contact-subscription-status> Cardinality: (0,1)		
<contact-source> Cardinality: (0,1)		
<common-connections> Cardinality: (0,1)		
<connection> Cardinality: (1,n)		
<display-name> Cardinality: (1,1)		

<XUI> Cardinality: (1,1)	
<type-list> Cardinality: (1,1)	
<type> Cardinality: (1,n)	

For PCCs and Contacts <pcc> and <contacts>

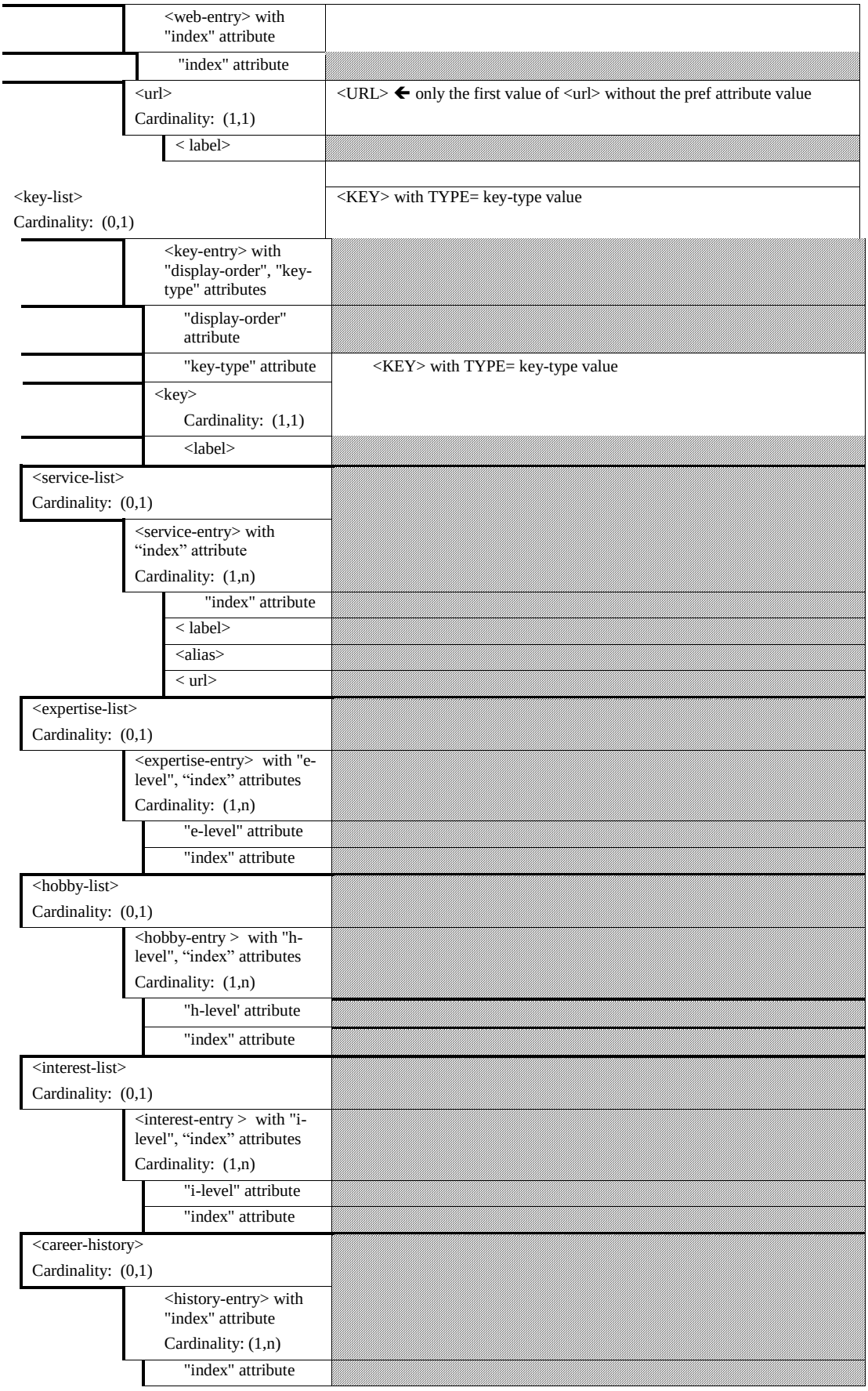
<person-details> with "index" attribute PCC: Cardinality: (0,n) Contact: Cardinality: (0,1)	See conditions & details below The mapping corresponds to one <person-details>.	
"index" attribute		
<name> with "pref" , "name-type" , "index" attributes Cardinality: (1,n)	<N> without the Pref attribute value and without name-type attribute value ← only the one with minimum pref value	<N> (or <Nickname> when name-type='KnownAs') , without the Pref attribute value and without name-type attribute value ← only the one with minimum pref value (without name-type)
"pref" attribute		
"name-type" attribute		
"index" attribute		
<title> with 'display-order' attribute Cardinality: (0,n)	<N>; Name Prefix (fourth field)	<N>; Honorific Prefix (fourth field)
"display-order" attribute		
"phonetic" Cardinality: (0,1)		
<given> with 'display-order' attribute Cardinality: (0,n)	<N>; Given Name (second field)	
"display-order" attribute		
"phonetic" Cardinality: (0,1)		
<middle> with 'display-order' attribute Cardinality: (0,n)	<N>; Additional Names (third field)	
"display-order" attribute		
"phonetic" Cardinality: (0,1)		
<family> with 'display-order' attribute Cardinality: (0,n)	<N>; Family Name (first field)	
"display-order" attribute		
"phonetic" Cardinality: (0,1)		
<gen-id> with "display-order" attribute Cardinality: (0,n)	<N>; Name Suffix (fifth field)	<N>; Honorific Suffix (fifth field)
"display-order" attribute		
"phonetic" Cardinality: (0,1)		

<degree> with "display-order" attribute Cardinality: (0,n)	<N>; Name Suffix (fifth field)	<N>; Honorific Suffix (fifth field)
"display-order" attribute		
"phonetic" Cardinality: (0,1)		
<display-name> Cardinality: (1,1)	<FN>	
<address> with "index", "pref", "addr-type" attributes Cardinality: (0,n)	<ADR> with TYPE=addr-type value without the Index. Pref attributes values Or <LABEL> with TYPE=addr-type value without the Index. Pref attributes values ← only the first value of <address> or the one with minimum pref value see conditions & details below	
"index" attribute		
"pref" attribute		
"addr-type" attribute	TYPE parameter	
<location> Cardinality: (0,1)		
<label> Cardinality: (0,1)		
<addr-string> \Cardinality: (0,1)		
<country> Cardinality: (0,1)	<ADR>; Country (seventh field)	
<region> with "region-type" attribute Cardinality: (0,1)	<ADR>; region (fifth field) ← only the region-name i.e. without the region-type	
"region-type" attribute		
<region-name> Cardinality: (1,1)	<ADR>; region (fifth field)	
<sub-region> with "region-type" attribute		
"region-type" attribute		
<locality> with "locality-type" attribute Cardinality: (0,1)	See conditions & details below	
"location-type" attribute		
<locality-element> Cardinality: (1,1)	<ADR>; locality-element (fourth field)	
<sub-locality> with "sublocality-type" attribute		
"subloc-type" attribute		
<street> Cardinality: (0,1)	<ADR>; Street (third field) "str-name and str-number" are just put one after the other (i.e. without separating comma) Example : ADR;TYPE=home: ;str-name str-number ;……	
< str-name> Cardinality: (1,1)	<ADR>; Street (third field)	
<str-number> Cardinality: (1,1)	<ADR>; Street (third field)	
<intersection>		

<int-name> Cardinality: (1,1)	
<int-number>	
<post_code> Cardinality: (0,1)	See conditions & details below
<post-code-main> Cardinality: (1,1)	<ADR>; post-code-main (sixth field)
<sub-post-code> Cardinality: (1,1)	
<postal-delivery-point> Cardinality: (0,1)	<ADR>; Post Office Box (first field) only the first postal-delivery-point-name without index and pref attributes
<postal-delivery-point-name> with "index", "pref" attributes Cardinality: (1,n)	<ADR>; Post Office Box (first field) only the first postal-delivery-point-name without index and pref attributes
"index" attribute	
"pref" attribute	
<post-office> Cardinality: (0,1)	
<postal- office-name> with "index", "pref" attribute Cardinality : (1,n)	
"index" attribute	
"pref" attribute	
<rural-delivery-point> with "index", "pref" attributesCardinality : (0,1)	
"index" attribute	
"pref" attribute	
<extended-address> with "index" attribute Cardinality : (1,n)	<ADR>; Extended address (second field) ← only the first value of <extended-address> without index attribute
"index" attribute	
<premises> with "premise-type" attribute	<ADR>; Extended address (second field) ← only the first value of <extended-address> without index attribute
"premises-type" attribute	
<premises-name>	
<premises-number>	
<sub-premises> with “sub-premises-type” attribute	
"sub-premises-type" attribute	
<sub-premises-name> Card : (0,n)	
<sub-premises-number> Card : (0,n)	
<location> Cardinality: (0,1)	<GEO> and <TZ> see conditions & details below
< label>	
<latitude>	<GEO>; lat (first field) in decimal form with "decimal value=+/- degrees + minutes/60 + seconds/3600" Decimal value is positive when lat-sign='N', negative when lat-sign='S'
<degrees-measure>	
<minutes-measure>	
<seconds-measure>	
<lat-sign>	
<longitude>	<GEO>; lon (second field) in decimal form with "decimal value=+/- degrees + minutes/60 + seconds/3600"
<degrees-measure>	

<minutes-measure>	Decimal value is positive when long-sign='E', negative when long-sign='W'
<seconds-measure>	
<long-sign>	
<altitude>	
<time-zone>	See conditions & details below
<tz-label>	
<utc-offset>	<TZ>
<tz-url>	
<comm.-addr> Cardinality: (1,1)	<TEL> and <EMAIL> with parameter PREF See conditions & details below
< uri-entry> with “index”, "pref", "addr-uri-type", attributes Cardinality: (0,n)	See conditions & details below
"index" attribute	
"pref" attribute	a) When addr-uri-type = 'email' <EMAIL>;PREF;TYPE=addr-uri-type values:uri PREF is only used for the uri with the minimum "pref" value b) When addr-uri-type="SIP URI" or "IM" or "pres URI" <IMPP>;PREF:uri PREF is only used for the uri with the minimum "pref" value
"addr-uri-type" attribute	
<addr-uri> Cardinality: (1,1)	
< label> (i.e communication mean)	
<tel> with “index”, "pref", "tel-type" Cardinality: (0,n)	See conditions & details below
"index" attribute	
"pref" attribute	<TEL>;PREF;TYPE=tel-type: tel-nb and extension translated to an X500 value PREF is only used for the tel with the minimum "pref" value
"tel-type" attribute	
<tel-nb> which is <tel-str> or <tel-uri> or <E.164> Cardinality: (1,1)	
<extension>	
<label>	
<birth> Cardinality: (0,1)	<BDAY> see conditions & details below
< date> Cardinality: (0, 1)	<BDAY>
<non-greg-date> with "cal-type" attribute Cardinality: (0,n)	
"cal-type" attribute	
"index" attribute	
<place>> with "index" attribute Cardinality: (1,n)	
"index" attribute	
<anniversary-list> Cardinality: (0,1)	
<anniversary-entry> Cardinality: (1,n)	
"index" attribute	

<anniversary-date> Cardinality: (0,1)		
<date> Cardinality: (0,1)		
<non-greg-date> with "cal-type" and index attributes Cardinality: (0,n)		
"cal-type" attribute		
"index" attribute		
< label>		
<gender> Cardinality: (0,1)		
<language-list> Cardinality: (0,1)		
<language-entry> with "language-proficiency-type", "language-fluency-type", "index"attributes Cardinality: (1,n)		
"language-proficiency-type" attribute		
"language-fluency-type" attribute		
"index" attribute		
"pref" attribute		
<media-list> Cardinality: (0,1)	<SOUND> and <LOGO> and <PHOTO> see conditions & details below	
<media-entry> with "media-content", "media-type" , “index”, “pref” attributes Cardinality: (1,n)	See conditions and details below	
	When media-content is "video"	
"media-content" attribute		
"media-type" attribute		
"index" attribute		
"pref" attribute		
"media"	When media-content is "sound" or "logo" or "photo" <SOUND> or <LOGO> or <PHOTO> with TYPE="a translation of media-type attribute i.e TYPE=the media type value when media-content = photo or logo (see RFC4288)"	
<media-label>		
<category-list> Cardinality: (0,1)		<CATEGORIES>
<category-entry> with “index” attribute Cardinality: (1,n)		<CATEGORIES>
"index" attribute		
<web resources> Cardinality: (0,1)	<URL> see conditions & details below	



<history-description> with "history-type" attribute Cardinality: (1,1)	
"history-type" attribute	
<start-date> with "cal-type"	
"cal-type" attribute	
"end-date" with "cal-type" attribute	
"cal-type" attribute	
<note> Cardinality: (0,1)	<NOTE>
<public-note> Cardinality: (0,1)	
Any other elements	
<service-provider-specific-list> Cardinality: (0,1)	
<sp-specific-entry> with "index" attribute Cardinality: (1,n)	
"index" attribute	
<sp-specific-label> Cardinality: (1,1)	
<sp-data> Cardinality: (1,1)	

<org-details> with "index" attribute PCC: Cardinality: (0,n) Contact: Cardinality: (0,1)	See conditions & details below The mapping corresponds to one <organization-details>
"index" attribute	
<org-name> with "pref", "org-name-type", "index"attributes Cardinality: (1,n)	<ORG> see conditions & details below
"pref" attribute	
"org-name-type" attribute	
"index" attribute	
<display-name> Cardinality: (0,1)	<ORG> ← only the display-name and unit values included in the first occurrence of <org-name> without the pref, "index" and org-name-type attributes values
<unit> Cardinality: (0,1)	
<entity> Cardinality: (0,1)	
<org-member-list> Cardinality: (0,1)	
<org-directory> Cardinality: (0,1)	
<comm-addr> Cardinality: (0,1)	
<media-list> Cardinality: (0,1)	
<web-resources>	

Cardinality: (0,1)	
<key-list> Cardinality: (0,1)	
Any other elements	

<group-details> with "index" attribuute PCC: Cardinality: (0,n) Contact : Cardinality : (0,1)	
"index" attribute	
<group-name> Cardinality: (1,n)	
<group-member-list> Cardinality: (0,1)	
<group-uri> Cardinality: (0,1)	
<comm-addr> Cardinality: (0,1)	
<media-list> Cardinality: (0,1)	
<web-resources> Cardinality: (0,1)	
<key-list> Cardinality: (0,1)	
Any other elements	

Any other elements	

Table 1: Mapping between CAB Format and Legacy Format(s)

Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
OMA-TS-CAB_FormatAdapt-V1_0-20180621-A	21 Jun 2018	Status changed to Approved by COM Doc Ref # OMA-COM-2018-0003-INP_CAB_V1_1_ERP_for_final_Approval

Appendix B. Static Conformance Requirements (Normative)

The notation used in this appendix is specified in [SCRRULES].

B.1 SCR for CAB Client

Item	Function	Reference	Requirement

B.2 SCR for CAB Server

Item	Function	Reference	Requirement
CAB-SYNC-S-004-O	Support for Format Adaptation	Section 5.1 Section 5.2	
CAB-IWF-S-008-Y	Support for the format adaptation between CAB format and Legacy format(s)	Section 5.1 Section 5.2	

Appendix C. X-CAB parameters and fields definitions (Informative)

This annex defines informative vCard extensions (i.e. X-CAB based) that may be applied when format adaptation between CAB Format and Legacy Format is performed.

C.1 CAB Format Elements - extensions

Note: The following table includes extensions for some of the CAB format elements, but it is not exhaustive.

CAB attributes	Initial vCard parameter	vCard extensions (parameters)
"pcc-type"		Used as a property not as a parameter (see 2nd table below)
"contactIdRef"		X-CAB-CONTACT-ID-REF (used in X-CAB-CONTACT-STATUS to indicate, when temporary element is used, a reference to the Contact Entry to which the contact activity-status is associated with)
"index"		X-CAB-INDEX (possible values : token)
"language-proficiency-type"		X-CAB-LANGUAGE-PROFICIENCY-TYPE (possible values : "read only", "speak", "read/write")
"language-fluency-type"		X-CAB-LANGUAGE-FLUENCY-TYPE (possible values : "beginner", "average", "fluent")
"q-level"		"X-CAB-LEVEL" (possible values : "beginner", "average", "expert")
"h-level"		"X-CAB-LEVEL" (possible values : "high", "medium", "low")
"i-level"		"X-CAB-LEVEL" (possible values : "high", "medium", "low")
"org-name-type"	"TYPE"	as in last vCard specification with specific values (possible values : "LegalName", "FormerName", OfficialName")

PCC document attribute	Initial Vcard property	vCard extensions (fields)
pcc-type		X-CAB-PCC-TYPE Purpose: To specify the kind of object the vCard represents. Value type: A single text value. Cardinality: (0,1) Special note: The value may be one of: "individual", "group" and "organization" . If this property is absent, "individual" MUST be assumed as default.

Contact-type (type, contact-type-source) &entry-status & Contact-subscription-status & Contact-source		X-CAB-CONTACT-STATUS Purpose: To specify the CAB status of the object the vCard represents. Value type: A single structured value consisting of 5 values separated by the SEMI-COLON character (ASCII decimal 59) : 1 contact-type (possible value : "CAB" if the contact is a CAB user, "non-CAB" if the contact is not a CAB user) 2 contact-type-source (possible values: "presence ", “cab_subscription”, “cab_search”, “other”) 3 entry-status. This field is composed of one or both of the following sub-fields : - updated : indicating that the contact has been updated by the CAB server, as a result of automatic updates from incoming subscription request(s) (possible values : "incoming subscription request") and contact share

		(possible values: “contact share”) (values are separated by commas). - temporary (possible values : "contact subscription", "contact imported", "contact added", "incoming subscription request" and contact share (possible values: “contact share”). This field may include a X-CAB-CONTACT-ID-REF parameter (field value and parameter are separated by a comma). 4 contact-subscription-status (possible values : "active", "pending", "denied", "invalid filter", "not found", "other_error") 5 contact-source indicating the latest source from which the contact data was obtained or updated (default value "CAB") 6 common-connections. This field contains the following sub-field : - Connection : defining the status of the common connection between the user and someone else (display-name, XUI, type-list) Cardinality: (1,1)

C.1.1 Person-details Elements

Gender		X-CAB-SEX Purpose: To specify the sex of the object the vCard represents, as defined in [ISO.5218.2004]. Value type: A single integer value. Cardinality: (0,1) Special note: The value 0 stands for "not known", 1 stands for "male", 2 stands for "female", 3 stands for “other” and 9 stands for "not applicable".
Language-entry		X-CAB-LANG Purpose: To specify the language(s) that may be used for contacting the individual associated with the vCard. Value type: A single language-tag value. Cardinality: (0,n) Special note: This property can include "X-CAB-LANGUAGE-PROFICIENCY-TYPE", "X-CAB-LANGUAGE-FLUENCY-TYPE" parameters. This property can include an "X-CAB-INDEX" parameter.
Service-entry		X-CAB-SERVICE Purpose: To specify the aliases used on different sites by the object that the vCard refers to. Value type: A single structured value consisting of 3 values separated by the SEMI-COLON character (ASCII decimal 59) : 1 label 2 alias 3 url Cardinality: (0,n) Special note: This property can include the "X-CAB-INDEX" parameter
Expertise-entry		X-CAB-EXPERTISE Purpose: To specify the expertise(s) of the object that the vCard refers to. Value type: A single string value. Special note: This property can include the X_CAB-LEVEL parameter (possible values : "beginner", "average", "expert"). This property can include the "X-CAB-INDEX" parameter. Cardinality: (0,n)

Hobby-entry		X-CAB-HOBBY Purpose: To specify the hobbies of the object that the vCard refers to. Value type: A single string value. Special note: This property can include the X_CAB-LEVEL parameter (possible values : "high", "medium", "low"). This property can include the "X-CAB-INDEX" parameter. Cardinality: (0,n)
Interest-entry		X-CAB-INTEREST Purpose: To specify the interest(s) of the object that the vCard refers to. Value type: A single string value Special note: This property can include the X-CAB-LEVEL parameter (possible values : "high", "medium", "low"). This property can include the "X-CAB-INDEX" parameter. Cardinality: (0,n)
Public-note		X-CAB-PUBLICNOTE Purpose: To specify additional information associated with the object the vCard refers to. Value type: A single string value Cardinality: (0,n)

C.1.2 Organization-directory

Org-directory	<ORG>	X-CAB-ORG-DIRECTORY Purpose: To specify the organization-directory of the object the vCard represents. Value type: A single structured value consisting of : - directory (a URI) Cardinality: (0,n) Special note: This property can include the PREF and X-CAB-INDEX parameters.