vCard MIME Directory Profile

Status of this Memo

Abstract

   This memo defines the profile of the MIME Content-Type [MIME-DIR] for
   directory information for a white-pages person object, based on a
   vCard electronic business card. The profile definition is independent
   of any particular directory service or protocol. The profile is
   defined for representing and exchanging a variety of information
   about an individual (e.g., formatted and structured name and delivery
   addresses, email address, multiple telephone numbers, photograph,
   logo, audio clips, etc.). The directory information used by this
   profile is based on the attributes for the person object defined in
   the X.520 and X.521 directory services recommendations. The profile
   also provides the method for including a [VCARD] representation of a
   white-pages directory entry within the MIME Content-Type defined by
   the [MIME-DIR] document.

1.   Overview

   The [MIME-DIR] document defines a MIME Content-Type for holding
   different kinds of directory information. The directory information
   may be based on any of a number of directory schemas. This document
   defines a [MIME-DIR] usage profile for conveying directory
   information based on one such schema; that of the white-pages type of
   person object.

The schema is based on the attributes for the person object defined in the X.520 and X.521 directory services recommendations. The schema has augmented the basic attributes defined in the X.500 series recommendation in order to provide for an electronic representation of the information commonly found on a paper business card. This

schema was first defined in the [VCARD] document. Hence, this [MIME-DIR] profile is referred to as the vCard MIME Directory Profile.

A directory entry based on this usage profile can include traditional directory, white-pages information such as the distinguished name used to uniquely identify the entry, a formatted representation of the name used for user-interface or presentation purposes, both the structured and presentation form of the delivery address, various telephone numbers and organizational information associated with the entry. In addition, traditional paper business card information such as an image of an organizational logo or identify photograph can be included in this person object.

The vCard MIME Directory Profile also provides support for representing other important information about the person associated with the directory entry. For instance, the date of birth of the person; an audio clip describing the pronunciation of the name associated with the directory entry, or some other application of the digital sound; longitude and latitude geo-positioning information related to the person associated with the directory entry; date and time that the directory information was last updated; annotations often written on a business card; Uniform Resource Locators (URL) for a website; public key information. The profile also provides support for non-standard extensions to the schema. This provides the flexibility for implementations to augment the current capabilities of the profile in a standardized way. More information about this electronic business card format can be found in [VCARD].

2.   The vCard Mime Directory Profile Registration

This profile is identified by the following [MIME-DIR] registration template information. Subsequent sections define the profile definition.

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME profile VCARD

Profile name: VCARD

Profile purpose: To hold person object or white-pages type of directory information. The person schema captured in the directory entries is that commonly found in an electronic business card.

Predefined MIME Directory types used: SOURCE, NAME, PROFILE, BEGIN, END, PROFILE.

Predefined MIME Directory parameters used: ENCODING, VALUE, CHARSET, LANGUAGE, CONTEXT.

New types: FN, N, PHOTO, BDAY, ADR, LABEL, TEL, EMAIL, MAILER, TZ, GEO, TITLE, ROLE, LOGO, AGENT, ORG, CATEGORY, NOTE, PRODID, REV, SOUND, URL, UID, VERSION, CLASS, KEY

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New parameters: TYPE

Profile special notes: The type-grouping feature of [MIME-DIR] is supported by this profile to group related vCard properties about a directory entry. For example, vCard properties describing WORK or HOME related characteristics MAY be grouped with a unique group label.

The profile permits the use of non-standard types (i.e., those identified with the prefix string "X-") as a flexible method for implementations to extend the functionality currently defined within this profile.

3.   MIME Directory Features

The vCard MIME Directory Profile makes use of many of the features defined by [MIME-DIR]. The following sections either clarify or extend the content-type definition of [MIME-DIR].

3.1   Predefined Type Usage

The vCard MIME Directory Profile uses the following predefined types from [MIME-DIR].

[3.1.1](#)   BEGIN and END Type

   The content entity MUST begin with the BEGIN type with a value of
   VCARD. The content entity MUST end with the END type with a value of
   VCARD.

[3.1.2](#)   NAME Type

   If the NAME type appears within a MIME entity conforming to this
   profile, it's value is the displayable, presentation text associated
   with the source for the vCard, as specified in the SOURCE type.

[3.1.3](#)   PROFILE Type

   If the PROFILE type appears within a MIME entity conforming to this
   profile, it s value must be "VCARD".

[3.1.4](#)   SOURCE Type

   If the SOURCE type appears within a MIME entity conforming to this
   profile, it's value provides information how to find the source for
   the vCard.

[3.2](#)   Predefined Type Parameter Usage

   The vCard MIME Directory Profile uses the following predefined types
   parameters as defined by [[MIME-DIR](#)].

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        · LANGUAGE

        · ENCODING

        · VALUE

[3.3](#)   VALUE Type Parameter Extensions

The predefined data type values specified in [MIME-DIR] have been
extended by the vCard profile to include a number of value types that
are specific to this profile.

3.3.1 BINARY

The "binary" value type specifies that the type value is inline,
encoded binary data. This value type may be specified in the PHOTO,
LOGO, SOUND, and KEY types.

If inline, encoded binary data is specified, the ENCODING type
parameter must be used to specify the encoding format.

The value type is defined by the following notation:

    binchar = <Any character valid in the base64 or quoted-printable
    encoding>
    binary   = *binchar   ;A base64 or quoted-printable
    encoding of the binary information

3.3.2 VCARD

The "vcard" value type specifies that the type value is another
vCard. This value type may be specified in the AGENT type. The value
type is defined by this specification.

3.3.3 PHONE-NUMBER

The "phone-number" value type specifies that the type value is a
telephone number. This value type may be specified in the TEL type.
The value type is a text value that has the semantics of a telephone
number.

3.3.4 UTC-OFFSET

The "utc-offset" value type specifies that the type value is a signed
offset from UTC. This value type may be specified in the TZ type.

The format of the offset from UTC is defined by [DATETIME]. The value
type is an offset from Coordinated Universal Time (UTC). It is
specified as a positive or negative difference in units of hours and
minutes (e.g., +hh:mm). The time is specified as a 24-hour clock.
Hour values are from 00 to 23, and minute values are from 00 to 59.
Hour and minutes are 2-digits with high order zeroes required to

maintain digit count. The extended format for ISO 8601 UTC offsets MUST be used. The extended format makes use of a colon character as a separator of the hour and minute text fields.

The value is defined by the following notation:

```
time-hour      = 2DIGIT        ;00-23
time-minute    = 2DIGIT        ;00-59
utc-offset     = ("+" / "-") time-hour ":" time-minute
```

3.4   Structured Type Values

Compound type values are delimited by a field delimiter, specified by the SEMI-COLON character (ASCII decimal 59). A SEMI-COLON in a component of a compound property value must be escaped with a BACKSLASH character (ASCII decimal 92).

Lists of values are delimited by a list delimiter, specified by the COMMA character (ASCII decimal 44). A COMMA character in a value must be escaped with a BACKSLASH character (ASCII decimal 92).

This profile supports the type grouping mechanism defined in [MIME-DIR]. Grouping of related types is a useful technique to communicate common semantics concerning the properties of a vCard.

4.   vCard Profile Features

The vCard MIME Directory Profile Type contains directory information, typically pertaining to a single directory entry. The information is described using an attribute schema that is tailored for capturing personal contact information. The vCard can include attributes that describe identification, delivery addressing, telecommunications addressing, geographical, organizational, general explanatory and security and access information about the particular object associated with the vCard.

4.1   Identification Types

These types are used in the vCard profile to capture information associated with the identification and naming of the person or resource associated with the vCard.

4.1.1   FN Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type FN

Type name:FN

Type purpose: To specify the formatted text corresponding to the name
of the object the vCard represents.

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Type encoding: The default is 8bit. May also be reset to 7bit or
quoted-printable.

Type value: text.

Type special notes: This type is based on the semantics of the X.520
Common Name attribute.

Type example:

          FN:Mr. John Q. Public, Esq.

[4.1.2](#)   N Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type N

Type name: N

Type purpose: To specify the structured components of the name of the
object the vCard represents.

Type encoding: The default is 8bit. May also be reset to 7bit or
quoted-printable.

Type value: text.

Type special note: The type value is structured text corresponding,
in sequence, to the Family Name, Given Name, Additional Names,
Honorific Prefixes, and Honorific Suffixes. The text components are
delimited by the SEMI-COLON character (ASCII decimal 59) and possibly

one or more LWSP. This type is based on the semantics of the X.520
individual name attributes.

Type example:

                N:Public;John;Quinlan;Mr.;Esq.

4.1.3 PHOTO Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type PHOTO

Type name: PHOTO

Type purpose: To specify an image or photograph information that
annotates some aspect of the object the vCard represents.

Type encoding: The default is 8bit. May also be reset to base64 in
order to permit inline, encoded binary data.

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Type value: The default is binary. It may also be reset to url. The
url value may be used to specify a value outside of this MIME entity.

Type special notes: The type MAY include the type parameter "TYPE" to
specify the graphic image format type. The TYPE parameter values MUST
be one of the IANA registered image formats or a non-standard image
format.

Type example:

        PHOTO;VALUE=url:=http://www.abc.com/pub/photos
         /jqpublic.gif

4.1.4 BDAY Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type BDAY

Type name: BDAY

Type purpose: To specify the birthdate of the object the vCard
represents.

Type encoding: 8bit.

Type value: The default is date. It may also be reset to date-time.

Type examples:

        BDAY:1996-04-15

        BDAY:1953-10-15T23:10:00

        BDAY:1987-09-27T08:30:00-06:00

4.2   Delivery Addressing Types

These types are concerned with information related to the delivery
addressing or label for the object the vCard represents.

4.2.1   ADR Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type ADR

Type name: ADR

Type purpose: To specify the structured components of the delivery
address for the object the vCard represents.

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Type encoding: The default is 8bit. It may also be reset to 7bit or
quoted-printable.

Type value: text.

Type special notes: The type value is structured text consisting of a
sequence of address components (i.e., post office box, extended
address, street address, locality, region, postal code, and country

name) separated by the SEMI-COLON character (ASCII decimal 59) and
optionally one or more LWSP.

The type may include the type parameter "TYPE" to specify the
delivery address type. The TYPE parameter values may include "dom" to
indicate a domestic delivery address; "intl" to indicate an
international delivery address; "postal" to indicate a postal
delivery address; "parcel" to indicate a parcel delivery address;
"home" to indicate a delivery address for a residence; "work" to
indicate delivery address for a place of work; and "pref" to indicate
the preferred delivery address when more than one address is
specified. These type parameter values may be specified as a
parameter list (i.e., "TYPE=dom;TYPE=postal") or as a value list
(i.e., "TYPE=dom,postal"). This type is based on semantics of the
X.520 geographical and postal addressing attributes. The default is
"TYPE=intl,postal,parcel,work". The default can be overridden to some
other set of values by specifying one or more alternate values. For
example, the default can be reset to "TYPE=dom,postal,work,home" to
specify a domestic delivery address for postal delivery to a
residence that is also used for work.

Type example:

        ADR;TYPE=dom,home,postal,parcel:;;123 Main
         Street;Any Town;CA;91921-1234

4.2.2   **LABEL Type Definition**

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type LABEL

Type name: LABEL

Type purpose: To specify the formatted text corresponding to delivery
address of the object the vCard represents.

Type encoding: The default is 8bit. It may also be reset to 7bit or
quoted-printable.

Type value: text.

Type special notes: The type value is formatted text that may be used
to present a delivery address label for the object the vCard
represents.

The type may include the type parameter "TYPE" to specify delivery
label type. The TYPE parameter values may include "dom" to indicate a
domestic delivery label; "intl" to indicate an international delivery
label; "postal" to indicate a postal delivery label; "parcel" to
indicate a parcel delivery label; "home" to indicate a delivery label
for a residence; "work" to indicate delivery label for a place of
work; and "pref" to indicate the preferred delivery label when more
than one label is specified. These type parameter values may
specified as a parameter list (i.e., "TYPE=dom;TYPE=postal") or as a
value list (i.e., "TYPE=dom,postal"). This type is based on semantics
of the X.520 geographical and postal addressing attributes. The
default is "TYPE=intl,postal,parcel,work". The default can be
overridden to some other set of values by specifying one or more
alternate values. For example, the default can be reset to
"TYPE=intl,post,parcel,home" to specify an international delivery
label for both postal and parcel delivery to a residencial location.

Type example:

                LABEL;ENCODING=quoted-printable;TYPE=dom,home,=
                postal,parcel:Mr.John Q. Public, Esq.=0D=0A=
                Mail Drop: TNE QB=0D=0A=
                123 Main Street=0D=0A=
                Any Town, CA 91921-1234=0D=0A=
                U.S.A.

4.3   Telecommunications Addressing Types

These types are concerned with information associated with the
telecommunications addressing of the object the vCard represents.

4.3.1   TEL Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type TEL

Type name: TEL

Type purpose: To specify the telephone number for telephony
communication with the object the vCard represents.

Type encoding: 8bit.

Type value: phone-number.

Type special notes: .The value of this type is specified in a
canonical form in order to specify an unambiguous representation of
the globally unique telephone endpoint. This type is based on the
X.500 Telephone Number attribute.

The type may include the type parameter "TYPE" to specify intended
use for the telephone number. The TYPE parameter values may include:

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"home" to indicate a telephone number associated with a residence,
"msg" to indicate the telephone number has voice messaging support,
"work" to indicate a telephone number associated with a place of
work, "pref" to indicate a preferred-use telephone number, "voice" to
indicate a voice telephone number, "fax" to indicate a facsimile
telephone number, "cell" to indicate a cellular telephone number,
"video" to indicate a video conferencing telephone number, "pager" to
indicate a paging device telephone number, "bbs" to indicate a
bulletin board system telephone number, "modem" to indicate a MODEM
connected telephone number, "car" to indicate a car-phone telephone
number, "isdn" to indicate an ISDN service telephone number, "pcs" to
indicate a personal communication services telephone number. The
default type is "voice". These type parameter values may specified as
a parameter list (i.e., "TYPE=work;TYPE=voice") or as a value list
(i.e., "TYPE=work,voice"). The default may be overridden to another
set of values by specifying one or more alternate values. For
example, the default TYPE of "voice" can be reset to a WORK and HOME,
VOICE and FAX telephone number by the value list
"TYPE=work,home,voice,fax".

Type example:

            TEL;TYPE=work,voice,pref,msg:+1-213-555-1234

[4.3.2](#)   EMAIL Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type EMAIL

Type name: EMAIL

Type purpose: To specify the electronic mail address for
communication with the object the vCard represents.

Type encoding: 8bit.

Type value: text.

Type special notes: . The type may include the type parameter "TYPE"
to specify the format or preference of the electronic mail address.
The TYPE parameter values may include: "internet" to indicate an
Internet addressing type, "x400" to indicate a X.400 addressing type
or."pref" to indicate a preferred-use email address when more than
one is specified. Another IANA registered address type may also be
specified. The default email type is "internet". A non-standard value
may also be specified.

Type example:

                EMAIL;TYPE=internet:jqpublic@xyz.dom1.com

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                EMAIL;TYPE=internet:jdoe@isp.net
                EMAIL;TYPE=internet,pref:jane_doe@abc.com

4.3.3 MAILER Type Definition

   To: ietf-mime-directory@imc.org

   Subject: Registration of application/directory MIME type MAILER

   Type name: MAILER

   Type purpose: To specify the type of electronic mail software that is
   used by the individual associated with the vCard.

   Type encoding: The default is 8bit. May also be reset to 7bit or
   quoted-printable.

   Type value: text.

   Type special notes: This information may provide assistance to a
   correspondent regarding the type of data representation which can be
   used, and how they may be packaged. This property is based on the
   private MIME type X-Mailer that is generally implemented by MIME user

agent products.

Type example:

        MAILER:PigeonMail 2.1

4.4   Geographical Types

These types are concerned with information associated with
geographical positions or regions associated with the object the
vCard represents.

4.4.1   TZ Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type TZ

Type name: TZ

Type purpose: To specify information related to the time zone of the
object the vCard represents.

Type encoding: 8bit.

Type value: The default is utc-offset. It may also be reset to text.

Type examples:

        TZ:-05:00

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        TZ;VALUE=text:-05:00; EST; Raleigh/North America

4.4.2   GEO Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type GEO

Type name: GEO

Type purpose: To specify information related to the global positioning of the object the vCard represents.

Type encoding: 8bit.

Type value: Two float values separated by the SEMI-COLON character (ASCII decimal 59).

Type special notes: This type specifies information related to the global position of the object associated with the vCard. The value specifies latitude and longitude, in that order (i.e., "LAT LON" ordering). The longitude represents the location east and west of the prime meridian as a positive or negative real number, respectively. The latitude represents the location north and south of the equator as a positive or negative real number, respectively. The longitude and latitude values must be specified as decimal degrees and should be specified to six decimal places. This will allow for granularity within a meter of the geographical position. The text components are separated by the SEMI-COLON character (ASCII decimal 59). The simple formula for converting degrees-minutes-seconds into decimal degrees is:

   decimal = degrees + minutes/60 + seconds/3600.

Type example:

       GEO:37.386013;-122.082932

4.5   Organizational Types

These types are concerned with information associated with characteristics of the organization or organizational units of the object the vCard represents.

4.5.1   TITLE Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type TITLE

Type name: TITLE

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Type purpose: To specify the job title, functional position or function of the object the vCard represents.

Type encoding: The default is 8bit. May also be reset to 7bit or quoted-printable.

Type value: text.

Type special notes: This type is based on the X.520 Title attribute.

Type example:

        TITLE:Director, Research and Development

[4.5.2](#)   ROLE Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type ROLE

Type name: ROLE

Type purpose: To specify information concerning the role, occupation, or business category of the object the vCard represents.

Type encoding: The default is 8bit. May also be reset to 7bit or quoted-printable.

Type value: text.

Type special notes: This type is based on the X.520 Business Category explanatory attribute. This property is included as an organizational type to avoid confusion with the semantics of the TITLE type and incorrect usage of that type when the semantics of this type is intended.

Type example:

        ROLE:Programmer

[4.5.3](#)   LOGO Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type LOGO

Type name: LOGO

Type purpose: To specify a graphic image of a logo associated with

the object the vCard represents.

Type encoding: The default is 8bit. May also be reset to base64 in
order to permit inline encoded binary data.

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Type value: The default is binary. It may also be reset to url. The
url value may be used to specify a value outside of this MIME entity.

Type special notes: The type MAY include the type parameter "TYPE" to
specify the graphic image format type. The TYPE parameter values MUST
be one of the IANA registered image formats or a non-standard image
format.

Type example:

LOGO;VALUE=URL:http://www.abc.com/pub/logos/abccorp.jpg

4.5.4   AGENT Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type AGENT

Type name: AGENT

Type purpose: To specify information about another person who will
act on behalf of the individual or resource associated with the
vCard.

Type encoding: 8-bit.

Type value: The default is vcard. It may also be reset to text or
url. The text value may be used to specify textual information. The
url value may be used to specify information outside of this MIME
entity.

Type special notes: This type typically is used to specify an area
administrator, assistant, or secretary for the individual associated
with the vCard. A key characteristic of the Agent type is that it
represents somebody or something that is separately addressable.

Type example:

```
      AGENT;VALUE=URL:
       CID:JQPUBLIC.part3.960129T083020.xyzMail@host3.com
```

4.5.5   **ORG Type Definition**

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type ORG

Type name: ORG

Type purpose: To specify the organizational name and units associated
with the vCard.

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Type encoding: The default is 8bit. May also be reset to 7bit or
quoted-printable.

Type value: text.

Type special notes: The type is based on the X.520 Organization Name
and Organization Unit attributes. The type value is a structured text
consisting of the organization name, followed by any organizational
units. The text components are separated the SEMI-COLON character
(ASCII decimal 59).

Type example:

            ORG:ABC, Inc.;North American Division;Marketing

4.6   **Explanatory Types**

These types are concerned with additional explanations, such as that
related to informational notes or revisions specific to the vCard.

4.6.1   **CATEGORIES Type Definition**

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type CATEGORIES

Type name: CATEGORIES

Type purpose: To specify application category information about the
vCard.

Type encoding: The default is 8bit. May also be reset to 7bit or
quoted-printable.

Type value: text.

Type special notes: More than one category may be specified as a list
of categories separated by a COMMA (ASCII Decimal 44) character.

Type example:

        CATEGORIES:TRAVEL AGENT

        CATEGORIES:INTERNET,IETF,INDUSTRY,INFORMATION TECHNOLOGY

4.6.2   NOTE Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type NOTE

Type name: NOTE

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Type purpose: To specify supplemental information or a comment that
is associated with the vCard.

Type encoding: The default is 8bit. May also be reset to 7bit or
quoted-printable.

Type value: text.

Type special notes: The type is based on the X.520 Description
attribute.

Type example:

        NOTE:This fax number is operational 0800 to 1715

EST, Mon-Fri.

[4.6.3](#)   **PRODID Type Definition**

     To: ietf-mime-directory@imc.org

     Subject: Registration of application/directory MIME type PRODID

     Type name: PRODID

     Type purpose: To specify the identifier for the product that created
     the vCard object.

     Type encoding: 8-bit.

     Type value: Text.

     Type example:

                  PRODID:-//ONLINE DIRECTORY//NONSGML Version 1//EN

[4.6.4](#)   **REV Type Definition**

     To: ietf-mime-directory@imc.org

     Subject: Registration of application/directory MIME type REV

     Type name: REV

     Type purpose: To specify revision information about the current
     vCard.

     Type encoding: 8-bit.

     Type value: The default is date-time. May also be reset to date.

     Type special notes: The type value is a calendar date and time of day
     in a form conforming to complete representation of ISO 8601 calendar

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     date and time of day format. The value distinguishes the current
     revision of the information defining this vCard.

Type example:

                REV:1995-10-31T22:27:10Z

4.6.5   SOUND Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type SOUND

Type name: SOUND

Type purpose: To specify a digital sound content information that annotates some aspect of the vCard. By default this type is used to specify the proper pronunciation of the name type value of the vCard.

Type encoding: The default is 8bit. May also be reset to base64 in order to permit inline encoded binary data.

Type value: The default is binary. It may also be reset to url. The url value may be used to specify a value outside of this MIME entity.

Type special notes: The type MAY include the type parameter "TYPE" to specify the audio format type. The TYPE parameter values MUST be one of the IANA registered audio formats or a non-standard audio format.

Type example:
                SOUND;TYPE=BASIC;VALUE=URL:CID:JOHNQPUBLIC.part8.
                 19960229T080000.xyzMail@host1.com

4.6.6   URL Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type URL

Type name: URL

Type purpose: To specify a uniform resource locator associated with the object that the vCard refers to.

Type encoding: 8bit.

Type value: url.

Type example:

     URL:http://www.swbyps.restaurant.french/~chezchic.html

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[4.6.7](#)   **UID Type Definition**

   To: ietf-mime-directory@imc.org

   Subject: Registration of application/directory MIME type UID

   Type name: UID

   Type purpose: To specify a value that represents a globally unique
   identifier corresponding to the individual or resource associated
   with the vCard.

   Type encoding: 8bit.

   Type value: text.

   Type special notes: The type is used to uniquely identify the object
   that the vCard represents.

   The type may include the type parameter "TYPE" to specify the format
   of the identifier. The TYPE parameter value may be any IANA
   registered identifier format. The value may also be a non-standard
   format.

   Type example:

              UID:19950401-080045-40000F192713-0052

[4.6.8](#)   **Version Type Definition**

   To: ietf-mime-directory@imc.org

   Subject: Registration of application/directory MIME type VERSION

   Type name: VERSION

   Type purpose: To specify the version of the vCard specification used
   to format this vCard.

   Type encoding: 8bit.

Type value: text.

Type special notes: The value must be "2.2" if the vCard version
corresponds to this specification.

Type example:

                VERSION: 2.2

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4.7   Security Types

These types are concerned with the security of communication pathways
or access to the vCard.

4.7.1   CLASSIFICATION Type Definition

To: ietf-mime-directory@imc.org

Subject: Registration of application/directory MIME type
CLASSIFICATION

Type name: CLASS

Type purpose: To specify the access classification for a vCard
object.

Type encoding: The default is 8bit. May also be reset to 7bit or
quoted-printable.

Type value: text.

Type special notes: An access classification is only one component of
the general security model for a directory service. The
classification attribute provides a method of capturing the intent of
the owner for general access to information described by the vCard
object.

Type examples:

```
        CLASS:PUBLIC

        CLASS:PRIVATE

        CLASS:CONFIDENTIAL
```

[4.7.2]   KEY Type Definition

   To: ietf-mime-directory@imc.org

   Subject: Registration of application/directory MIME type KEY

   Type name: KEY

   Type purpose: To specify a public key or authentication certificate
   associated with the object that the vCard represents.

   Type encoding: The default is 8bit. May also be reset to base64.

   Type value: The default is text. May also be reset to binary.

   Type special notes: The type may also include the type parameter TYPE
   to specify the public key or authentication certificate format. The

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   parameter type may specify any IANA registered public key or
   authentication certificate format. The parameter type may also
   specify a non-standard format.

[4.8]   Extended Types

   The types defined by this document can be extended with private types
   using the non-standard, private values mechanism defined in [RFC-
   2045]. Non-standard, private types with a name starting with "X-" may
   be defined bilaterally between two cooperating agents without outside
   registration or standardization.

[5].   Differences With vCard v2.1

   This specification has been reviewed by the IETF community. The
   review process introduced a number of differences with the [VCARD]

version 2.1. These differences are minor, but require that vCard
objects conforming to this specification have a different version
number than a vCard conforming to [VCARD]. The differences include
the following:

  · VERSION value corresponding to this specification must be
    "2.2".

  · The [MIME-DIR] predefined types of PROFILE, SOURCE, NAME are
    allowed.

  · The [MIME-DIR] VALUE type parameter for value data typing is
    allowed.

  · The [VCARD] CHARSET type parameter has been eliminated.
    Character set may only be specified on the CHARSET parameter
    on the Content-Type MIME header field.

  · The [VCARD] support for non-signficant LWSP character been
    eliminated. All LWSP is significant in this specification.

  · LOGO, PHOTO and SOUND multimedia formats need to be either
    IANA registered types or non-standard types.

  · TEL values may be identified as personal communication
    services telephone numbers with the PCS type parameter value.

  · The PRODID, CATEGORIES and CLASS types have been added.

6.   **Formal Grammar**

The following formal grammar is provided to assist developers in
building parsers for the vCard.

This syntax is written according to the form described in RFC 822,
but it references just this small subset of RFC 822 literals:

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    CR   = <ASCII CR, carriage return> ; (15, 13.)
    LF   = <ASCII LF, linefeed>   ; (12,10.)
    CRLF   = CR LF
    SPACE   = <ASCII SP, space>   ; (40,32.)
    HTAB   = <ASCII HT, horizontal-tab>   ; (11,9.)

```
     All literal property names are valid as upper, lower, or mixed case.

     word          = <any printable 7bit us-ascii except []=:., >

     groups        = groups "." word
                    / word

     vcard_entity = 1*(vcard)

     vcard         = "BEGIN" ":" "VCARD" 1*CRLF
                      items *CRLF
                      "END" ":" "VCARD" 1*CRLF

     items         = items *CRLF item
                     / item
         ; these may be "folded"

     item          = [groups "."] name
                       [params] ":" value CRLF
                     / [groups "."] "ADR"
                       [params] ":" addressparts CRLF
                     / [groups "."] "ORG"
                       [params] ":" orgparts CRLF
                     / [groups "."] "N"
                       [params] ":" nameparts CRLF
                     / [groups "."] "AGENT"
                       [params] ":" vcard CRLF
         ; these may be "folded"

     name          = "LOGO" / "PHOTO" / "LABEL" / "FN" / "TITLE"
                     / "SOUND" / "VERSION" / "TEL" / "EMAIL" / "TZ"
                     / "GEO" / "NOTE" / "SOURCE" / "NAME" / "PROFILE"
                     / "URL" / "BDAY" / "ROLE" / "REV" / "UID" / "KEY"
                     / "MAILER" / "CATEGORIES" / "CLASS" / "PRODID"
                     /"X-" word
         ; these may be "folded"

     value         = 7bit / quoted-printable / base64

     7bit          = <7bit us-ascii printable chars, excluding CR LF>

     8bit          = <MIME RFC 2045 8-bit text>

     quoted-printable = <MIME RFC 2045 quoted-printable text>

     base64        = <MIME RFC 2045 base64 text>
         ; the end of the text is marked with two CRLF sequences
```

```
      ; this results in one blank line before the start of the next
      ; property

params       = ";" paramlist

paramlist    = paramlist ";" param
             / param

param        = "TYPE" "=" ptypeval
             / "VALUE" "=" pvalueval
             / "ENCODING" "=" pencodingval
             / "LANGUAGE" "=" langval
             / "X-" word "=" word
             / knowntype / ianatype

ptypeval     = knowntype / "X-" word

pvalueval    = "URL" / "TEXT" / "DATE" / "TIME" / "DATE-TIME"
             / "INTEGER" / "BOOLEAN" / "FLOAT" / "BINARY" /
             / "VCARD" / "PHONE-NUMBER" / "UTC-OFFSET" / "X-" word

pencodingval = "7BIT" / "8BIT" / "QUOTED-PRINTABLE" / "BASE64"
             / "X-" word

langval      = <a language string as defined in RFC 1766>

addressparts = 0*6(strnosemi ";") strnosemi
      ; PO Box, Extended Addr, Street, Locality, Region, Postal Code,
      ; Country Name

orgparts     = *(strnosemi ";") strnosemi
      ; First is Organization Name, remainder are Organization Units.

nameparts    = 0*4(strnosemi ";") strnosemi
      ; Family, Given, Middle, Prefix, Suffix.
      ; Example:Public;John;Q.;Reverend Dr.;III, Esq.

strnosemi    = *(*nonsemi ("\;" / "\" CRLF)) *nonsemi
      ; To include a semicolon in this string, it must be escaped
      ; with a "\" character.

nonsemi      = <any non-control ASCII except ";">

knowntype    = "DOM" / "INTL" / "POSTAL" / "PARCEL" / "HOME" / "WORK"
             / "PREF" / "VOICE" / "FAX" / "MSG" / "CELL" / "PAGER"
             / "BBS" / "MODEM" / "CAR" / "ISDN" / "VIDEO" / "PCS"
```

```
                  / "INTERNET" / "X400" / "X509" / "PGP"

     ianatype      = <Any IANA registered value>
```

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   Daniel Klaussen, Chris Newman, Vinod Seraphin, Michelle Watkins; who
   provided numerous suggestions and comments on this work.

6.2   Authors s Addresses


```
   BEGIN:vCard
   FN:Frank Dawson
   ORG:IBM Corporation;Network Software Division
   ADR;TYPE=WORK,POSTAL,PARCEL:APNA/CC-303/Bldg. 002;
    3039 Cornwallis Rd.;Research Triangle  Park;
    NC;27709;U.S.A.
   TEL;TYPE=VOICE,MSG,WORK: +1 (919) 254-5861
   TEL;TYPE=FAX,WORK: +1-919-543-6822
   EMAIL;TYPE=INTERNET,PREF:fdawson@raleigh.ibm.com
   EMAIL;TYPE=INTERNET:fdawson@earthlink.net
   URL:http://home.earthlink.net/~fdawson
   END:vCard

   BEGIN:vCard
   FN:Tim Howes
   ORG:Netscape Communications Corp.
   ADR;TYPE=WORK: 501 E. Middlefield Rd.;Mountain View;
    CA; 94043;U.S.A.
   TEL;TYPE=VOICE,MSG,WORK:+1-415-937-3419
   TEL;TYPE=FAX,WORK:+1-415-528-4164
   EMAIL;TYPE=INTERNET:howes@netscape.com
   END:vCard
```

6.3   References

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[CCITT E.163] Recommendation E.163 - Numbering Plan for The International Telephone Service, CCITT Blue Book, Fascicle II.2, pp. 128-134, November, 1988.

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