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SIP Call-Info Parameters for Rich Call Data

Abstract

This document describes a SIP Call-Info header field usage defined
to include rich data associated with the identity of the calling
party that can be rendered to a called party for providing more
useful information about the caller or the specific reason for the
call. This includes extended comprehensive information about the
caller such as what a jCard object can represent for describing the
calling party or other call specific information such as describing
the reason or intent of the call. The elements defined for this
purpose are intended to be extensible to accommodate related
information about calls that helps people decide whether to pick up
the phone and additionally, with the use of jCard and other
elements, to be compatible with the STIR/PASSporT Rich Call Data
framework.

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1. Introduction

   Traditional telephone network signaling protocols have long
   supported delivering a 'calling name' from the originating side,
   though in practice, the terminating side is often left to derive a
   name from the calling party number by consulting a local address
   book or an external database. SIP similarly can carry a 'display-
   name' in the From header field value from the originating to
   terminating side, though it is an unsecured field that is not
   commonly trusted and often replaced or ignored. The same is often
   true of information in the Call-Info header fields.

   To allow calling parties to initiate, and called parties to receive,
   a more comprehensive, deterministic, and extensible rich call data
   for incoming calls, we describe new tokens for the SIP [RFC3261]
   Call-Info header field and a corresponding "purpose" parameter. We
   also define a new parameter of Call-Info designed for carrying a
   "reason" value. For this document, depending on the policies of the
   communications system, calling parties could either be the end user
   device or an originating service provider, and called parties could
   also similarly be an end user device or the terminating service
   provider acting on behalf of the recipient of the call.

   Used on its own, this specification assumes that the called party
   user agent can trust the SIP network or the SIP provider to deliver
   the correct rich call data (RCD) information. This may not always be
   the case and thus, the entity inserting the Call-Info header field
   and the UAS relying on it SHOULD be part of the same trust domain
   [RFC3324]. Alternatively, and likely the recommended approach, the
   entity inserting the Call-Info header field should also sign the
   caller information via STIR mechanisms [RFC8224] and specifically
   through the [I-D.ietf-stir-passport-rcd]. This STIR signature would
   likely be provided by the caller itself or the originating service
   provider using an authoritative signature to authenticate the
   information is from the originator and hasn't been tampered with in
   transmission.

   [RFC7852] provides a means of carrying additional data about callers
   for the purposes of emergency services (especially its Section 4.4
   "Owner/Subscriber" information). This specification provides an
   overlapping functionality for non-emergency cases. Rather than

overloading its "EmergencyCallData" Call-Info "purpose" parameter
value, this document defines a separate "purpose" parameter for the
more generic delivery of information via jCard [RFC7095]. This
document borrows from [RFC7852] the capability to carry a data
structure as a body, through the use of the "cid" URI scheme
[RFC2392].

2. Terminology

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT",
"SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and
"OPTIONAL" in this document are to be interpreted as described in
BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all
capitals, as shown here.

3. Overview

The Call-Info header field, defined in [RFC3261] Section 20.9,
defines a purpose parameter currently with "info", "icon", and
"card" tokens. This document defines two new purpose values and one
new generic parameter for Call-Info.

The first purpose value defined is "jcard" and is used to associate
rich call data related to the identity of the calling party in the
form of a jCard [RFC7095]. While there is a "card" token that is
already defined with similar purpose, there are two primary reasons
for the definition and usage of jCard and the use of JSON over the
XML based vCard [RFC2426]. First, JSON has become the default and is
generally the widely accepted optimally supported format for
transmission, parsing, and manipulation of data on IP networks.
Second, jCard has also been defined in [I-D.ietf-stir-passport-rcd]
and has been adopted by PASSporT [RFC8225] because of the usage of
JSON Web Tokens (JWT) [RFC7519].

A generic parameter for "call-reason" is to be used to provide a
string or other object that is used to convey the intent or reason
the caller is calling to help the called party understand better the
context of the call and why they may want to answer the call.

The second purpose value defined is "jmin" and is intended to be a
minimal call-info URI specifically for purposes where call-info does
not point to any structured information via URI, but is used to
carry parameters either defined in this document or future
documents.

4. "jcard" Call-Info Token

The use of the new Call-Info Token "jcard" is for the purpose of
supporting RCD associated with the identity of a calling party in a

SIP call [RFC3261] Section 20.9. The format of a Call-Info header
field when using the "jcard" is as follows.

The Call-Info header field is defined to include a URI, where here
the resource pointed to by the URI is a jCard JSON object [RFC7095].
The MIME media type set for the JSON text MUST be set as
application/json with a default encoding of UTF-8 [RFC4627]. A jCard
also MAY be carried in the body of the SIP request bearing this
Call-Info via the "cid" URI scheme [RFC2392]. Alternatively, the URI
MUST define the use HTTPS or a transport that can validate the
integrity of the source of the resource as well as the transport
channel through which the resource is retrieved.

An example of a Call-Info header field is:

Call-Info: <https://example.com/qbranch.json>;purpose=jcard

An example contents of a URL linked jCard JSON file is shown as
follows:

```
["vcard",
  [
    ["version",{},"text","4.0"],
    ["fn",{},"text","Q Branch"],
    ["org",{},"text","MI6;Q Branch Spy Gadgets"],
    ["photo",{},"uri","https://example.com/photos/q-256x256.png"],
    ["logo",{},"uri","https://example.com/logos/mi6-256x256.jpg"],
    ["logo",{},"uri","https://example.com/logos/mi6-64x64.jpg"]
  ]
]
```

An example SIP INVITE using the "cid" URI scheme is as follows.

```
INVITE sip:alice@example.com SIP/2.0
Via: SIP/2.0/TLS pc33.atlanta.example.com;branch=z9hG4bKnashds8
To: Alice <sip:alice@example.com>
From: Bob <sip:12155551000@example.com;user=phone>;tag=1928301774
Call-ID: a84b4c76e66710
Call-Info: <cid:12155551000@example.com>;purpose=jcard;call-reason= \
  "Rendezvous for Little Nellie"
CSeq: 314159 INVITE
Max-Forwards: 70
Date: Fri, 25 Sep 2015 19:12:25 GMT
Contact: <sip:12155551000@gateway.example.com>
Content-Type: multipart/mixed; boundary=boundary1
Content-Length: ...

--boundary1

Content-Type: application/sdp

v=0
o=UserA 2890844526 2890844526 IN IP4 pc33.atlanta.example.com
s=Session SDP
c=IN IP4 pc33.atlanta.example.com
t=0 0
m=audio 49172 RTP/AVP 0
a=rtpmap:0 PCMU/8000

--boundary1

Content-Type: application/vcard+json
Content-ID: <12155551000@example.com>

["vcard",[["version",{},"text","4.0"],["fn",{},"text","Q Branch"],
["org",{},"text","MI6;Q Branch Spy Gadgets"],["photo",{},"uri","ht
tps://example.com/photos/quartermaster-256x256.png"],["logo",{},"u
ri","https://example.com/logos/mi6-256x256.jpg"],["logo",{},"uri",
"https://example.com/logos/mi6-64x64.jpg"]]]
```

5. "call-reason" Call-Info Parameter

   This specification also defines a parameter of the Call-Info header
   called "call-reason". The "call-reason" parameter is intended to
   convey a short textual message suitable for display to an end user
   during call alerting. As a general guideline, this message SHOULD be
   no longer than 64 characters; displays that support this
   specification may be forced to truncate messages that cannot fit
   onto a screen. This message conveys the caller's intention in
   contacting the callee. It is an optional parameter, and the sender
   of a SIP request cannot guarantee that its display will be supported
   by the terminating endpoint. The manner in which this reason is set
   by the caller is outside the scope of this specification.

One alternative approach would be to use the baseline [RFC3261] Subject header field value to convey the reason for the call. Because the Subject header has seen little historical use in SIP implementations, however, and its specification describes its potential use in filtering, it seems more prudent to define a new means of carrying a call reason indication.

An example of a Call-Info header field value with the "call-reason" parameter follows:

Call-Info: <https://example.com/jbond.json>;purpose=jcard;
  call-reason="For your ears only"

Refer to the next section that extends call-reason and, in particular, discusses reasoning for the use of "call-reason" parameter versus considering "jinfo" with an included "call-reason" key value.

6. "jmin" Call-Info Token

This specification defines a token for the Call-Info header field called "jmin". The "jmin" call-info URI is intended to address the need for scenarios where there it is not needed to use the URI value of call-info but only necessary to use defined call-info parameters, one example being the "call-reason" parameter defined in this document. The URI referenced value by "jmin" is defined as a minimal JSON formatted object that MUST be the specific value "{}". The JSON object "{}" is a valid JSON object per [RFC8259] but specifically contains no keys or values. The MIME media type for this minimal JSON object text MUST be set as application/json with a default encoding of UTF-8 [RFC4627]. The "jmin" minimal JSON object string MAY be carried in the body of the SIP request bearing this Call-Info via the "cid" URI scheme [RFC2392]. Alternatively, the URI MUST define the use HTTPS or a transport that can validate the integrity of the source of the resource as well as the transport channel through which the resource is retrieved.

We define this minimal JSON object for the express purpose of being a valid URI that will not break implementations that are not implementing this specification that reference the URI per procedures defined in [RFC3261] Section 20.9. However, for implementations that do support this specification, because the value referenced by the URI MUST be "{}", as an optimization, implementations of this specification MAY consider it a shortcut to not reference the URI and trust that the value referenced will always be "{}".

An example of a Call-Info header field using "jmin" purpose and call-reason parameter is:

```
Call-Info: <https://example.com/min.json>;purpose=jmin;
  call-reason="For your ears only"
```

   The resource referenced by the URL for the above example would be a
   file containing:

   `{}`

   An example SIP INVITE using the "cid" URI scheme equivalent to the
   above example is as follows.

```
INVITE sip:alice@example.com SIP/2.0
Via: SIP/2.0/TLS pc33.atlanta.example.com;branch=z9hG4bKnashds8
To: Alice <sip:alice@example.com>
From: Bob <sip:12155551000@example.com;user=phone>;tag=1928301774>
Call-ID: a84b4c76e66710
Call-Info: <cid:12155551000@example.com>;purpose=jmin;call-reason=
  "For your ears only"
CSeq: 314159 INVITE
Max-Forwards: 70
Date: Fri, 25 Sep 2015 19:12:25 GMT
Contact: <sip:12155551000@gateway.example.com>
Content-Type: multipart/mixed; boundary=boundary1
Content-Length: ...

--boundary1

Content-Type: application/sdp

v=0
o=UserA 2890844526 2890844526 IN IP4 pc33.atlanta.example.com
s=Session SDP
c=IN IP4 pc33.atlanta.example.com
t=0 0
m=audio 49172 RTP/AVP 0
a=rtpmap:0 PCMU/8000

--boundary1

Content-Type: application/json
Content-ID: <12155551000@example.com>

{}
```

7. Usage of jCard and property specific usage

   Beyond the definition of the specific properties or JSON arrays
   associated with each property. This specification defines a few
   rules above and beyond [RFC7095] specific to the use of jCard for
   Call-Info and Rich Call Data making sure there is a minimum level of

supported properties that every implementation of this specification should adhere to. This includes support for interpreting the value of this property and the ability to render in some appropriate form the display capabilities of common telephone devices, as well as apps, and also includes requirements specific to either textual displays and graphics capable displays.

7.1. Usage of URIs in jCard

When one or more URIs are used in a jCard, it is important to note that any URI referenced data, with the exception of the top-level usage of "jcl" as a URI to the jCard itself (unless updated by any future extensions of this specification) MUST NOT contain any URI references. In other words, the jCard can have URI references as defined in the jCard specification and this document, but the content referenced by those URIs MUST NOT have any URIs, and therefore MUST be enforced by the client to not follow those URI references or not render that content to the user if any URI are present in that specific URI linked content. The purpose of this is to control the security and more specifically align with the content integrity mechanism defined in [I-D.ietf-stir-passport-rcd]. It is the belief of the authors that there isn't a scenario that deeper URI references would be required or even supported by the current set of properties for the typical use of jCard properties, but because jCard is extensible, this rule is set to restrict further extension without the proper consideration of security and integrity properties of both Call-Info usage as well as the Rich Call Data and STIR signing of the data [I-D.ietf-stir-passport-rcd], [RFC8224].

7.2. Usage of multimedia data in jCard

There are a few cases where jCards incorporate URIs or directly include via Base64 encoding of digital images and sounds. We specify a few recommended conventions to facilitate more consistent support of the successful rendering of these images.

For images, such as for the photo and logo properties, the default image formats SHOULD be png or jpg. These files are mostly commonly used to support 24-bit RGB images which should consequently be the default. There are some older telephone devices that may only support bmp type of images with lower bit-range (e.g. 16-bit or 8-bit or 1-bit), also with potentially only grayscale or 1-bit black and white color displays. These exceptions are should considered optional to support or even recommended not to support and at least at the time of writing this document are becoming increasingly rare (i.e. typically displays on devices are either color or color-aware graphical displays that support png or jpg formats or exclusively textual displays).

In addition, vector images are increasingly popular in their use for icons and the need for scalable images without having to send multiple resolutions. SVG format and [W3C SVG 1.2 Tiny or higher] specifically appropriate for this specification has gained wide support as of the writing of this document, as a common format for vector images and should be supported as an additional default format for devices that support this specification.

For the cases where image files are referenced by URIs as file resources, this document defines a character string that SHOULD be concatenated on to the end of a file name, before the file extension that signals the height and width of the image to the end device for the convenience of determining the appropriate resolution to retrieve without the need to retrieve all the image files. It is also recommended that images are square ratio formatted with equal height and width and with a power of two value for the number of pixels (e.g. 32x32, 128x128, 512x512). The format of the string should be "filename-HxW" where filename represents the unique string representing the file and H represents the height in pixels and W represents the width in pixels.

Because this is a complex and often debated topic that has evolved over the many years of advances in image coding and display technologies, we likely suggest relying on either future specifications or industry forum specifications that might correspond to supporting particular classes of devices to further define how URIs can reference appropriate image formats and files.

For audio files, the recommendation is to provide mp3, m4a, or wav files, although the usage of sound is not well defined in this specification as, for example, a special ring tone for a particular caller, and future documents should consider both usage and potential security risks of playing sounds that are not specifically authorized by a device user.

7.3. Cardinality

Property cardinalities are indicated, for convenience, using the following notation and follow the guidance of jCard [RFC7095] and vCard [RFC6350], which is based on ABNF (see [RFC5234], Section 3.6):

```
+-------------+----------------------------------------------------+
| Cardinality | Meaning                                            |
+-------------+----------------------------------------------------+
|      1      | Exactly one instance per jCard MUST be present.    |
|     *1      | Exactly one instance per jCard MAY be present.     |
|     1*      | One or more instances per jCard MUST be present.   |
|      *      | One or more instances per jCard MAY be present.    |
+-------------+----------------------------------------------------+
```

7.4. Identification properties

These types are used to capture information associated with the
identification and naming of the entity associated with the jCard.
They are initially defined in [RFC6350], but the following list of
properties included and repeated in this Section is a subset of the
properties defined for jCard with properties selected for this
document that have relevance to telephone and messaging
applications. jCard is an extensible object and therefore, there may
also be future specifications that extend the set of properties that
may be relevant to the set of communications applications that
utilize this specification.

7.4.1. "fn" property

The "fn" property has the intent of providing a formatted text
corresponding to the name of the object the jCard represents.
Reference [RFC6350] Section 6.2.1.

Value type: A single text value.

Cardinality: 1*

Example:
["fn", {}, "text", "Mr. John Q. Public\, Esq."]

7.4.2. "n" property

The "n" property has the intent of providing the components of the
name of the object the jCard represents. Reference [RFC6350] Section
6.2.2.

Value type: A single structured text value. Each component can have
multiple values.

Cardinality: *1

Example:
["n", {}, "text", "Public;John;Quinlan;Mr.;Esq."]
["n", {}, "text", "Stevenson;John;Philip,Paul;Dr.;Jr.,M.D.,A.C.P."]

7.4.3. "nickname" property

The "nickname" property has the intent of providing the text
corresponding to the nickname of the object the jCard represents.
Reference [RFC6350] Section 6.2.3.

Value type: One or more text values separated by a COMMA character
(U+002C).

Cardinality: *

Example:
["nickname", {}, "text", "Robbie"]
["nickname", {}, "text", "Jim,Jimmie"]
["nickname", {}, "text", "TYPE=work:Boss"]

7.4.4. "photo" property

The "photo" property has the intent of supplying an image or
photograph information that annotates some aspect of the object the
jCard represents. Reference [RFC6350] Section 6.2.4.

In addition to the definition of jCard, and to promote
interoperability and proper formatting and rendering of images, the
photo SHOULD correspond to a square image size of the sizes 128x128,
256x256, 512x512, or 1024x1024 pixels.

Value type: A single URI.

Cardinality: *

Example:
["photo", {}, "uri", "http://www.example.com/jqpublic-256x256.png"]

7.5. Delivery Addressing Properties

These properties are concerned with information related to the
delivery addressing or label for the jCard object.

7.5.1. "adr" property

The "adr" property has the intent of providing the delivery address
of the object the jCard represents. Reference [RFC6350] Section
6.3.1.

Value type: A single structured text value, separated by the
SEMICOLON character (U+003B).

Cardinality: *

Example:
```
["adr", {"type":"work"}, "text",
  ["", "", "3100 Massachusetts Avenue NW", "Washington", "DC",
  "20008", "USA"]
```

7.6. Communications Properties

These properties describe information about how to communicate with
the object the jCard represents.

7.6.1. "tel" property

The "tel" property has the intent of providing the telephone number
for telephony communication of the object the jCard represents.
Reference [RFC6350] Section 6.4.1.

Relative to the SIP From header field value this information may
provide alternate telephone number or other related telephone
numbers for other uses.

It is important to note that any of the potential instances of the
"tel" property should not be considered part of the authentication
or verification part of STIR [RFC8224] or required to match the
"orig" claim in the PASSporT [RFC8225]. These telephone numbers
should be considered for contact, fax, or other purposes aligned
with the general usage of jCard and vCard, although consideration of
confusing the caller with different contact telephone number
information versus the actual verified telephone number should be
made from a general policy point of view.

Value type: By default, it is a single free-form text value (for
backward compatibility with vCard 3), but it SHOULD be reset to a
URI value. It is expected that the URI scheme will be "tel", as
specified in [RFC3966], but other schemes MAY be used.

Cardinality: *

Example:
```
["tel", { "type": ["voice", "text", "cell"], "pref": "1" }, "uri",
  "tel:+1-202-555-1000"]
["tel", { "type": ["fax"] }, "uri", "tel:+1-202-555-1001"]
```

7.6.2. "email" property

The "email" property has the intent of providing the electronic mail
address for communication of the object the jCard represents.
Reference [RFC6350] Section 6.4.2.

Value type: A single text value.

```
   Cardinality: *

Example:
["email", {"type":"work"}, "text", "jqpublic@xyz.example.com"]
["email", {"pref":"1"}, "text", "jane_doe@example.com"]
```

7.6.3. "lang" property

   The "lang" property has the intent of providing the language(s) that
   may be used for contacting of the object the jCard represents.
   Reference [RFC6350] Section 6.4.4.

   Value type: A single language-tag value.

   Cardinality: *

```
Example:
["lang", {"type":"work", "pref":"1"}, "language-tag", "en"]
["lang", {"type":"work", "pref":"2"}, "language-tag", "fr"]
["lang", {"type":"home"}, "language-tag", "fr"]
```

7.7. Geographical Properties

   These properties are concerned with information associated with
   geographical positions or regions associated with the object the
   jCard represents.

7.7.1. "tz" property

   The "tz" property has the intent of providing the time zone of the
   object the jCard represents. Reference [RFC6350] Section 6.5.1.

   Note: the up-to-date reference for where time-zone names are
   maintained is, at the authoring of this document, at this web
   address, https://www.iana.org/time-zones.

   Value type: The default is a single text value. It can also be reset
   to a single URI or utc-offset value.

   Cardinality: *

```
Example:
["tz", {}, "text", "Raleigh/North America"]
```

7.7.2. "geo" property

   The "geo" property has the intent of providing the global
   positioning of the object the jCard represents. Reference [RFC6350]
   Section 6.5.2.

Value type: A single URI.

    Cardinality: *

Example:
["geo", {}, "uri", "geo:37.386013,-122.082932"]

7.8. Organizational Properties

    These properties are concerned with information associated with
    characteristics of the organization or organizational units of the
    object that the jCard represents.

7.8.1. "title" property

    The "title" property has the intent of providing the position or job
    of the object the jCard represents. Reference [RFC6350] Section
    6.6.1.

    Value type: A single text value.

    Cardinality: *

Example:
["title", {}, "text", "Research Scientist"]

7.8.2. "role" property

    The "role" property has the intent of providing the position or job
    of the object the jCard represents. Reference [RFC6350] Section
    6.6.2.

    Value type: A single text value.

    Cardinality: *

Example:
["role", {}, "text", "Project Leader"]

7.8.3. "logo" property

    The "logo" property has the intent of specifying a graphic image of
    a logo associated with the object the jCard represents. Reference
    [RFC6350] Section 6.6.3.

    Value type: A single URI.

    Cardinality: *

Example:

```
["logo", {}, "uri", "http://www.example.com/abccorp-512x512.jpg"]

["logo", {}, "uri", "data:image/jpeg;base64,MIICajCCAdOgAwIBAgIC
      AQEEBQAwdzELMAkGA1UEBhMCVVMxLDAqBgNVBAoTI05ldHNjYXBlIENvbW11bm
      ljYXRpb25zIENvcnBvcmF0aW9uMRwwGgYDVQQLExNJbmZvcm1hdGlvbiBTeXN0
      <...the remainder of base64-encoded data...>"]
```

7.8.4. "org" property

   The "org" property has the intent of specifying the organizational
   name and units of the object the jCard represents. Reference
   [RFC6350] Section 6.6.2.

   Value type: A single structured text value consisting of components
   separated by the SEMICOLON character (U+003B).

   Cardinality: *

Example:

```
["org", {}, "text", "ABC\, Inc.;North American Division;Marketing"]
```

7.9. Explanatory Properties

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

7.9.1. "categories" property

   The "categories" property has the intent of specifying application
   category information about the object the jCard represents.
   Reference [RFC6350] Section 6.7.1.

   Value type: One or more text values separated by a COMMA character
   (U+002C).

   Cardinality: *

Example:

```
["categories", {}, "text", "TRAVEL AGENT"]

["categories", {}, "text", "INTERNET,IETF,INDUSTRY"]
```

7.9.2. "note" property

   The "note" property has the intent of specifying supplemental
   information or a comment about the object the jCard represents.
   Reference [RFC6350] Section 6.7.2.

Value type: A single text value.

       Cardinality: *

Example:
["note", {}, "text", "This fax number is operational 0800 to 1715
            EST\, Mon-Fri."]

7.9.3. "sound" property

   The "sound" property has the intent of specifying a digital sound
   content information that annotates some aspect of the object the
   jCard represents. This property is often used to specify the proper
   pronunciation of the name property value of the jCard. Reference
   [RFC6350] Section 6.7.5.

   Value type: A single URI.

   Cardinality: *

Example:
["sound", {}, "uri", "http://www.example.com/pub/logos/abccorp.mp3"]

["sound", {}, "uri", "data:audio/basic;base64,MIICajCCAdOgAwIBAgICBE
      AQEEBQAwdzELMAkGA1UEBhMCVVMxLDAqBgNVBAoTI05ldHNjYXBlIENvbW11bm
      ljYXRpb25zIENvcnBvcmF0aW9uMRwwGgYDVQQLExNJbmZvcm1hdGlvbiBTeXN0
      <...the remainder of base64-encoded data...>"]

7.9.4. "uid" property

   The "uid" property has the intent of specifying a globally unique
   identifier corresponding to the object the jCard represents.
   Reference [RFC6350] Section 6.7.6.

   Value type: A single URI value. It MAY also be reset to free-form
   text.

   Cardinality: *1

Example:
["uid", {}, "uri", "urn:uuid:f81d4fae-7dec-11d0-a765-00a0c91e6bf6"]

7.9.5. "url" property

   The "url" property has the intent of specifying a uniform resource
   locator associated with the object the jCard represents. Reference
   [RFC6350] Section 6.7.8.

   There is potential security and privacy implications of providing
   URLs with telephone calls. The end client receiving a jCard with a

URL property MUST only display the URL and not automatically follow
the URL or provide automatic preview of the URL, and generally
provide good practices in making it clear to the user it is their
choice to follow the URL in a browser context consistent with all of
the common browser security and privacy practices available on most
consumer OS environments.

Value type: A single uri value.

Cardinality: *

Example:
["url", {}, "uri", "https://example.org/french-rest/chezchic.html"]

7.9.6. "version" property

The "version" property MUST be included and is intended to specify
the version of the vCard specification used to format this vCard.
Reference [RFC6350] Section 6.7.9.

Value type: A single text value.

Cardinality: 1

Example:
["version", {}, "text", "4.0"]

8. Extension of jCard

Part of the intent of the usage of jCard is that it has its own
extensibility properties where new properties can be defined to
relay newly defined information related to a caller. This capability
is inherently supported as part of standard extensibility. However,
usage of those new properties should be published and registered
following [RFC7095] Section 3.6 or new specifications.

9. Acknowledgements

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members of the SIPCORE and STIR working group for helpful
suggestions and comments for the creation of this draft.

10. IANA Considerations

10.1. SIP Call-Info Header Field Purpose Token Request

[this RFC] defines the "jcard" token for use as a new token in the
Call-Info header in the "Header Field Parameters and Parameter
Values" registry defined by [RFC3968].

```
+--------------+----------------+------------------+-----------+
| Header Field | Parameter Name | Predefined Values | Reference |
+--------------+----------------+------------------+-----------+
| Call-Info    | jcard          | No               | [this RFC] |
+--------------+----------------+------------------+-----------+
```

10.2. SIP Call-Info Header Field Purpose Token Request

[this RFC] defines the "call-reason" generic parameter for use as a
new parameter in the Call-Info header in the "Header Field
Parameters and Parameter Values" registry defined by [RFC3968]. The
parameter's token is "call-reason" and it takes the value of a
quoted string.

11. Security Considerations

Revealing information such as the name, location, and affiliation of
a person necessarily entails certain privacy risks. SIP and Call-
Info has no particular confidentiality requirement, as the
information sent in SIP is in the clear anyway. Transport-level
security can be used to hide information from eavesdroppers, and the
same confidentiality mechanisms would protect any Call-Info or jCard
information carried or referred to in SIP.

The security framework of signing and providing integrity to this
data should be followed [I-D.ietf-stir-passport-rcd], with the idea
that the use of constraints and other certificate based associations
should be considered. This includes considerations around
information about the calling party being generally constant vs per
call data being more temporal. This also includes the relationship
that certificates with constraints presents to how they relate to
each other and how that information is managed, protected, and
associated with the correct call corresponding to a calling party.

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