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JSContact: Converting from and to vCard
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Abstract

This document provides an informational guideline for converting the contact card defined by JSContact specification, namely JSCard, from and to vCard.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

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This Internet-Draft will expire on August 14, 2020.

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1. Introduction

1.1. Motivation

The JSContact specification [draft-ietf-jmap-jscontact] has been defined to represent contact card information as a more efficient alternative to vCard [RFC6350] and its JSON format named jCard [RFC7095].

While new applications might adopt JSContact as their main format to exchange contact card data, they are likely to interoperate with services and clients that just support vCard/jCard. Similarly, existing contact data providers and consumers already using vCard/jCard might want to represent their data also according to the JSContact specification.

To facilitate this use cases, this document provides an informational guide about how to convert the card defined in JSContact, namely JSCard, from and to vCard.

1.2. Scope and Caveats

JSContact and vCard have a lot of semantics in common, however some differences must be outlined:

- The JSContact data model defines some contact information that doesn't have a direct mapping with vCard elements.

- The vCard specification includes some features (like parameters) that have been formally removed from JSCard due to a complete refactoring of vCard content. Anyway, the vCard parameters may appear as JSCard properties.

- Some vCard elements represented individually have been modeled as members of JSCard elements.

- The vCard custom elements, identified by the prefix "x-", don't have a direct counterpart in the JSContact specification.

1.3. Conventions Used in This Document

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 RFC 2119 ([RFC2119]).

2. Mapping

This section contains the mapping between vCard and JSCard. The vCard properties are grouped according to the categories defined by RFC6350 [RFC6350].

2.1. General Properties

2.1.1. SOURCE

The vCard SOURCE element is represented in JSCard as a "Resource" item of the "online" array (Figure 1). The "type" and "label" members of the "Resource" object are set to "uri" and "source" respectively.

The PREF and MEDIATYPE parameters can be represented by the "isPreferred" and "mediaType" properties respectively.

```
    BEGIN:VCARD
    VERSION:4.0
    ...
    SOURCE:http://directory.example.com/addressbooks/jdoe/Jean%20Dupont.vcf
    ...
    END:VCARD

    {
    ...
    "online":[
              ...
              {
               "type": "uri",
               "label": "source",
               "value": "http://directory.example.com/addressbooks/jdoe/
Jean%20Dupont.vcf"
              },
              ...
            ],
    ...
    }
```

Figure 1: SOURCE mapping example

2.1.2. KIND

The vCard KIND element is mapped onto the JSCard "kind" property (Figure 2). Such property can contain one of the values, except "group", described in section 6.1.4 of RFC6350 [RFC6350] and extended with the values declared in RFC6473 [RFC6473] and RFC6969 [RFC6869].

A group of cards is represented by a dedicated object named JSCardGroup.

```
    BEGIN:VCARD
    VERSION:4.0
    ...
    KIND:individual
    ...
    END:VCARD

    {
    ...
    "kind": "individual",
    ...
    }
```

Figure 2: KIND mapping example

2.2. Identification Properties

2.2.1. FN

FN is converted into the "fullName" property. The presence of more than one name is implicitly associated with the translation of the full name in various languages. Each translation corresponds to a different entry of the "localizations" map that is an optional member of the "fullName" object (Figure 3).

2.2.2. N and NICKNAME

The vCard elements N and NICKNAME are converted into equivalent items of the JSCard "name" array (Figure 3):

- the N components are transformed into related "NameComponent" items as reported in Table 1; an item for each name component. Name components SHOULD be ordered such that their values joined by whitespace produce a valid full name of this entity;

- NICKNAME is mapped onto an item whose "type" is "nickname"; an item for each nickname.

N component	"type" value
Honorific Prefixes	prefix
Given Names	personal
Family Names	surname
Additional Names	additional
Honorific Suffixes	suffix

Table 1: N components mapping

```
BEGIN:VCARD
VERSION:4.0
...
FN:Mr. John Q. Public\, Esq.
N:Public;John;Quinlan;Mr.;Esq.
NICKNAME:Johnny
...
END:VCARD
```

```
{
...
"fullName":{
           "value": "Mr. John Q. Public, Esq."
           },
"name":[
         { "value":"Mr.", "type": "prefix" },
         { "value":"John", "type": "personal" },
         { "value":"Public", "type": "surname" },
         { "value":"Quinlan", "type": "additional" },
         { "value":"Esq.", "type": "suffix" },
         { "value":"Johnny", "type": "nickname" }
       ],
...
}
```

Figure 3: FN, N, NICKNAME mapping example

2.2.3. PHOTO

The vCard PHOTO element is represented in JSCard as a "Resource" item of the "online" array (Figure 4). The "type" and "label" members are set to "uri" and "photo" respectively.

The PREF and MEDIATYPE parameters can be represented by the "isPreferred" and "mediaType" properties respectively.

```
BEGIN:VCARD
VERSION:4.0
...
PHOTO:http://www.example.com/pub/photos/jqpublic.gif
...
END:VCARD
```

```
{
...
"online":[
          ...
          {
           "type": "uri",
           "label": "photo",
           "value": "http://www.example.com/pub/photos/jqpublic.gif"
          },
          ...
        ],
...
}
```

Figure 4: PHOTO mapping example

2.2.4. BDAY, BIRTHPLACE, DEATHDATE, DEATHPLACE, ANNIVERSARY

The vCard BDAY and ANNIVERSARY elements and the vCard extensions BIRTHPLACE, DEATHDATE, DEATHPLACE described in RFC6474 [RFC6350] are represented in JSCard as "Anniversary" items of the "anniversaries" array (Figure 5):

- BDAY and BIRTHPLACE are mapped onto "date" and "place" where "type" is set to "birth"
- DEATHDATE and DEATHPLACE are mapped onto "date" and "place" where "type" is set to "death"
- ANNIVERSARY is mapped onto "date" where "type" is set to "other" and "label" is set to a value describing in detail the kind of anniversary (e.g. "marriage date" for the wedding anniversary).

Both birth and death places are represented as instances of the Address object. The LANGUAGE parameter values of both BIRTHPLACE and DEATHPLACE elements can be expressed as corresponding entries of the "localizations" map included in the "fullAddress" object.

```
    BEGIN:VCARD
    VERSION:4.0
    ...
    BDAY:19531015T231000Z
    BIRTHPLACE:Mail Drop: TNE QB\n123 Main Street\nAny Town, CA
91921-1234\nU.S.A.
    DEATHDATE:19960415
    DEATHPLACE:4445 Courtright Street\nNew England, ND 58647\nU.S.A.
    ANNIVERSARY:19860201
    ...
    END:VCARD
```

```
    {
    ...
    "anniversaries":[
              {
               "type": "birth",
               "date": "19531015T231000Z",
               "place":
                      {
                      "fullAddress":
                                  {
                                   "value": "Mail Drop: TNE QB\n123 Main
Street\nAny Town, CA 91921-1234\nU.S.A."
                                  }
                      }
              },
              {
               "type": "birth",
               "date": "19531015T231000Z",
               "place":
                      {
                      "fullAddress":
                                  {
                                   "value": "4445 Courtright Street\nNew
England, ND 58647\nU.S.A."
                                  }
                      }
              },
              {
               "type": "other",
               "label": "marriage date",
               "date": "19860201"
              }
             ],
    ...
    }
```

Figure 5: BDAY, BIRTHPLACE, DEATHDATE, DEATHPLACE, ANNIVERSARY mapping example

2.2.5. GENDER

TBD

2.3. Delivery Addressing Properties

2.3.1. ADR

The vCard ADR element is represented in JSCard as an "Address" item of the "addresses" array (Figure 6).

The ADR components are transformed into the "Address" properties as reported in Table 2.

ADR component	Address property
p.o. box	postOfficeBox
extended address	extension
street address	street
locality	locality
region	region
postal code	postcode
country name	country

Table 2: ADR components mapping

The LABEL parameter is converted into the "fullAddress" property.

The PREF parameter is converted into the "isPreferred" property.

The GEO parameter is converted into the "coordinates" property.

The TZ parameter is converted into by the "timeZone" property.

The TYPE parameter is converted into the "context" property. The "home" value is replaced by the "private" value.

The LANGUAGE parameter values can be represented as different entries of the "localizations" map that is an optional member of the "fullAddress" object.

The CC parameter defined by RFC8605 [RFC8605] is converted into the "countryCode" property.

```
BEGIN:VCARD
VERSION:4.0
...
ADR;TYPE=work;CC=US:;;54321 Oak St;Reston;VA;20190;USA
ADR;TYPE=home;CC=US:;;12345 Elm St;Reston;VA;20190;USA
...
END:VCARD
```

```
{
...
"addresses": [
      {
       "context": "work",
       "fullAddress":
                    {
                     "value": "54321 Oak St\nReston\nVA\n20190\USA"
                    },
       "street": "54321 Oak St",
       "locality": "Reston",
       "region": "VA",
       "country": "USA",
       "postcode": "20190",
       "countryCode": "US"
      },
      {
       "context": "private",
       "fullAddress":
                    {
                     "value": "12345 Elm St\nReston\nVA\n20190\USA"
                    },
       "street": "12345 Elm St",
       "locality": "Reston",
       "region": "VA",
       "country": "USA",
       "postcode": "20190",
       "countryCode": "US"
      }
]
...
}
```

Figure 6: ADR mapping example

2.4. Communications Properties

2.4.1. TEL

The vCard TEL element is represented in JSCard as a "Resource" item of the "phones" array (Figure 7). The vCard "type-param-tel" values are represented by the "type" member while the "type-param" values are represented by the "context" member. The "home" value is replaced by the "private" value.

The PREF parameter can be represented by the "isPreferred" member.

```
BEGIN:VCARD
VERSION:4.0
...
TEL;VALUE=uri;PREF=1;TYPE="voice,home":tel:+1-555-555-5555;ext=5555
TEL;VALUE=uri;TYPE=home:tel:+33-01-23-45-67
...
END:VCARD
```

```
{
...
"phones":[
          {
           "type": "voice",
           "context": "private",
           "value": "tel:+1-555-555-5555;ext=5555",
           "isPreferred": true
          },
          {
           "type": "voice",
           "context": "private",
           "value": "tel:+33-01-23-45-67"
          }
        ],
...
}
```

Figure 7: TEL mapping example

2.4.2. EMAIL

The vCard EMAIL element is represented in JSCard as a "Resource" item of the "emails" array (Figure 8). The vCard "type-param" values are represented by the "context" member. The "home" value is replaced by the "private" value.

The PREF parameter can be represented by the "isPreferred" member.

```
BEGIN:VCARD
VERSION:4.0
...
EMAIL;TYPE=work:jqpublic@xyz.example.com
EMAIL;PREF=1:jane_doe@example.com
...
END:VCARD
```

```
{
...
"emails":[
          {
           "context": "work",
           "value": "jqpublic@xyz.example.com",
          },
          {
           "context": "private",
           "value": "jane_doe@example.com"
           "isPreferred": true
          }
        ],
...
}
```

Figure 8: EMAIL mapping example

2.4.3. IMPP

The vCard IMPP element is represented in JSCard as a "Resource" item of the "online" array (Figure 9). The "type" and "label" members are set to "username" and "XMPP" respectively.

The PREF and MEDIATYPE parameters can be represented by the "isPreferred" and "mediaType" properties respectively.

```
BEGIN:VCARD
VERSION:4.0
...
IMPP;PREF=1:xmpp:alice@example.com
...
END:VCARD
```

```
{
...
"online":[
          ...
          {
           "type": "username",
           "label": "XMPP",
           "value": "alice@example.com"
          },
          ...
        ],
...
}
```

Figure 9: IMPP mapping example

2.4.4. LANG

The vCard LANG element is represented in JSCard through the "preferredContactLanguages" map (Figure 10): an entry for each language that may be used for contacting the entity associated with the JSCard. The entry keys correspond to the language tags, the corresponding entry values are arrays of ContactLanguage items.

The TYPE and PREF parameters can be represented by, respectively, the ContactLanguage properties "type" and "preference".

If both PREF and TYPE parameters are missing, the array of ContactLanguage items MUST be empty.

```
BEGIN:VCARD
VERSION:4.0
...
LANG;TYPE=work;PREF=1:en
LANG;TYPE=work;PREF=2:fr
LANG;TYPE=home:fr
...
END:VCARD
```

```
{
...
"preferredContactLanguages" : {
                                "en": [
                                       {
                                        "type": "work",
                                        "preference": 1
                                       }
                                      ],
                                "fr": [
                                       {
                                        "type": "work",
                                        "preference": 2
                                       },
                                       {
                                        "type": "home",
                                       }
                                      ]
                               },
...
}
```

Figure 10: LANG mapping example

2.5. Geographical Properties

The GEO and TZ elements are not directly mapped into equivalent topmost JSCard elements because the same information is represented through equivalent "Address" properties.

2.6. Organizational Properties

2.6.1. TITLE

The vCard TITLE element is mapped onto the JSCard "jobTitle" array; an item for each title (Figure 11).

The LANGUAGE parameter values can be expressed as corresponding entries of the "localizations" map included in each "Resource" item.

```
BEGIN:VCARD
VERSION:4.0
...
TITLE:Research Scientist
...
END:VCARD

{
...
"jobTilte":[
            {
             "value": "Research Scientist"
            }
           ],
...
}
```

Figure 11: TITLE mapping example

2.6.2. ROLE

The vCard ROLE element is mapped onto the JSCard "role" array; an item for each role (Figure 12).

The LANGUAGE parameter values can be expressed as corresponding entries of the "localizations" map included in each "Resource" item.

```
BEGIN:VCARD
VERSION:4.0
...
ROLE:Project Leader
...
END:VCARD

{
...
"role":[
        {
         "value": "Project Leader"
        }
       ],
...
}
```

Figure 12: ROLE mapping example

2.6.3. LOGO

The vCard LOGO element is represented in JSCard as a "Resource" item of the "online" array (Figure 13). The "type" and "label" members are set to "uri" and "logo" respectively.

The PREF and MEDIATYPE parameters can be represented by the "isPreferred" and "mediaType" properties respectively.

```
BEGIN:VCARD
VERSION:4.0
...
LOGO:http://www.example.com/pub/logos/abccorp.jpg
...
END:VCARD
```

```
{
...
"online":[
          ...
          {
           "type": "uri",
           "label": "logo",
           "value": "http://www.example.com/pub/logos/abccorp.jpg"
          },
          ...
        ],
...
}
```

Figure 13: LOGO mapping example

2.6.4. ORG

The vCard ORG element is mapped onto the JSCard "organization" array; an item for each organization (Figure 14). The organization name includes the organizational units if any.

The LANGUAGE parameter values can be expressed as corresponding entries of the "localizations" map included in each "Resource" item.

```
BEGIN:VCARD
VERSION:4.0
...
ORG:ABC\, Inc.;North American Division;Marketing
...
END:VCARD
```

```
{
...
"organization":[
            {
             "value": "ABC, Inc.;North American Division;Marketing"
             }
            ],
...
}
```

Figure 14: ORG mapping example

2.6.5. MEMBER

According to the JSContact specification, a group of contact cards is represented by a dedicated object named JSCardGroup (Figure 15). The contact cards composing the group are included in the "cards" array. Therefore, the vCard MEMBER element doesn't have a direct match with a corresponding JSCard element.

```
BEGIN:VCARD
VERSION:4.0
KIND:group
FN:The Doe family
MEMBER:urn:uuid:03a0e51f-d1aa-4385-8a53-e29025acd8af
MEMBER:urn:uuid:b8767877-b4a1-4c70-9acc-505d3819e519
END:VCARD
BEGIN:VCARD
VERSION:4.0
FN:John Doe
UID:urn:uuid:03a0e51f-d1aa-4385-8a53-e29025acd8af
END:VCARD
BEGIN:VCARD
VERSION:4.0
FN:Jane Doe
UID:urn:uuid:b8767877-b4a1-4c70-9acc-505d3819e519
END:VCARD
```

```
{
"uid": "urn:uuid:ab4310aa-fa43-11e9-8f0b-362b9e155667",
"name": "The Doe family",
"cards": [
          {
           "name": {
                    "fullName": {
                                 "value": "John Doe"
                                }
                   },
            "uid": "urn:uuid:03a0e51f-d1aa-4385-8a53-e29025acd8af"
           },
           {
            "name": {
                     "fullName": {
                                  "value": "Jane Doe"
                                 }
                    },
            "uid": "urn:uuid:b8767877-b4a1-4c70-9acc-505d3819e519f"
           }
          ]
}
```

Figure 15: Group example

2.6.6. RELATED

The vCard RELATED element is converted into the "relatedTo" map (Figure 16): an entry for each entity the entity described by the

JSCard is associated with. The map keys are the UUIDs of the associated cards.

Each map value is an object including only the "relation" property represented as a set of relation types described in section 6.6.6 of RFC6350 [RFC6350].

If the relation type is unspecified, the "relation" is empty.

```
BEGIN:VCARD
VERSION:4.0
...
RELATED;TYPE=friend:urn:uuid:f81d4fae-7dec-11d0-a765-00a0c91e6bf6
RELATED;TYPE=contact:http://example.com/directory/jdoe.vcf
RELATED;VALUE=text:Please contact my assistant Jane Doe for any inquiries.
...
END:VCARD
```

```
{
...
"relatedTo":{
               {
                "urn:uuid:f81d4fae-7dec-11d0-a765-00a0c91e6bf6":
                     {
                      "relation": {
                                   "friend": true
                                  }
                     }
               },
               {
                "http://example.com/directory/jdoe.vcf":
                     {
                      "relation": {
                                   "contact": true
                                  }
                     }
               },
               {
                "Please contact my assistant Jane Doe for any inquiries.":
                     {
                      "relation": { }
                     }
               }
             }
...
}
```

Figure 16: RELATED mapping example

2.6.7. CONTACT-URI

The vCard CONTACT-URI element defined by RFC8605 [RFC8605] is represented in JSCard as a "Resource" item of the "online" array (Figure 17). The "type" and "label" members of the "Resource" object are set to "uri" and "contact-uri" respectively.

The PREF parameter can be represented by the "isPreferred" property.

```
BEGIN:VCARD
VERSION:4.0
...
CONTACT-URI;PREF=1:mailto:contact@example.com
...
END:VCARD
```

```
{
...
"online":[
          ...
          {
           "type": "uri",
           "label": "contact-uri",
           "value": "mailto:contact@example.com",
           "isPreferred": true
          },
          ...
        ],
...
}
```

Figure 17: CONTACT-URI mapping example

2.7. Personal Information Properties

2.7.1. EXPERTISE

The vCard EXPERTISE element defined by RFC6715 [RFC6715] is represented in JSCard as a "PersonalInformation" item of the "personalInfo" array (Figure 18). The "type" property is set to "expertise".

The LEVEL parameter can be represented by the "level" property with following mapping:

- "beginner" is converted into "low";
- "average" is converted into "medium";
- "expert" is converted into "high".

The INDEX parameter is represented by the position of the expertise among the declared expertises.

```
BEGIN:VCARD
VERSION:4.0
...
EXPERTISE;LEVEL=beginner;INDEX=2:chinese literature
EXPERTISE;INDEX=1;LEVEL=expert:chemistry
...
END:VCARD
```

```
{
...
"personalInfo":[
                ...
                {
                 "type": "expertise",
                 "value": "chemistry",
                 "level": "high"
                },
                {
                 "type": "expertise",
                 "value": "chinese literature",
                 "level": "low"
                }
                ...
               ]
...
}
```

Figure 18: EXPERTISE mapping example

2.7.2. HOBBY

The vCard HOBBY element defined by RFC6715 [RFC6715] is represented in JSCard as a "PersonalInformation" item of the "personalInfo" array (Figure 19). The "type" property is set to "hobby".

The LEVEL parameter can be represented by the "level" property with a direct mapping.

The INDEX parameter is represented by the position of the hobby among the declared hobbies.

```
BEGIN:VCARD
VERSION:4.0
...
HOBBY;INDEX=1;LEVEL=high:reading
HOBBY;INDEX=2;LEVEL=high:sewing
...
END:VCARD
```

```
{
...
"personalInfo":[
                ...
                {
                 "type": "hobby",
                 "value": "reading",
                 "level": "high"
                },
                {
                 "type": "hobby",
                 "value": "sewing",
                 "level": "high"
                }
                ...
               ]
...
}
```

Figure 19: HOBBY mapping example

2.7.3. INTEREST

The vCard INTEREST element defined by RFC6715 [RFC6715] is represented in JSCard as a "PersonalInformation" item of the "personalInfo" array (Figure 20). The "type" property is set to "interest".

The LEVEL parameter can be represented by the "level" property with a direct mapping.

The INDEX parameter is represented by the position of the interest among the declared interests.

```
BEGIN:VCARD
VERSION:4.0
...
INTEREST;INDEX=1;LEVEL=medium:r&b music
INTEREST;INDEX=2;LEVEL=high:rock 'n' roll music
...
END:VCARD
```

```
{
...
"personalInfo":[
                ...
                {
                 "type": "interest",
                 "value": "r&b music",
                 "level": "medium"
                },
                {
                 "type": "interest",
                 "value": "rock 'n' roll music",
                 "level": "high"
                }
                ...
               ]
...
}
```

Figure 20: INTEREST mapping example

2.7.4. ORG-DIRECTORY

The vCard ORG-DIRECTORY element is represented in JSCard as a "Resource" item of the "online" array (Figure 21). The "type" and "label" members are set to "uri" and "org-directory" respectively.

The PREF parameter can be represented by the "isPreferred" property.

The INDEX parameter is represented by the position of the directory among the online resources with the "label" property set to "org-directory".

```
    BEGIN:VCARD
    VERSION:4.0
    ...
    ORG-DIRECTORY;INDEX=1:http://directory.mycompany.example.com
    ORG-DIRECTORY;PREF=1:ldap://ldap.tech.example/
o=Example%20Tech,ou=Engineering
    ...
    END:VCARD
```

```
    {
    ...
    "online":[
              ...
              {
               "type": "uri",
               "label": "org-directory",
               "value": "http://directory.mycompany.example.com"
              },
              {
               "type": "uri",
               "label": "org-directory",
               "value": "ldap://ldap.tech.example/
o=Example%20Tech,ou=Engineering",
               "isPreferred": true
              },
              ...
            ],
    ...
    }
```

Figure 21: ORG-DIRECTORY mapping example

2.8. Explanatory Properties

2.8.1. CATEGORIES

The vCard CATEGORIES element is converted into the JSCard "categories" array (Figure 22); an item for each category.

```
BEGIN:VCARD
VERSION:4.0
...
CATEGORIES:INTERNET,IETF,INDUSTRY,INFORMATION TECHNOLOGY
...
END:VCARD
```

```
{
...
"categories":[
              "INTERNET",
              "IETF",
              "INDUSTRY",
              "INFORMATION TECHNOLOGY"
             ]
...
}
```

Figure 22: CATEGORIES mapping example

2.8.2. NOTE

The vCard NOTE element is mapped onto the JSCard "notes" array (Figure 23); an item for each note.

The LANGUAGE parameter values can be expressed as corresponding entries of the "localizations" map included in each "Resource" item.

```
BEGIN:VCARD
VERSION:4.0
...
NOTE:This fax number is operational 0800 to 1715 EST\, Mon-Fri.
...
END:VCARD
```

```
{
...
"notes":[
         {
          "value": "This fax number is operational 0800 to 1715 EST, Mon-
Fri."
         }
        ]
...
}
```

Figure 23: NOTE mapping example

2.8.3. PROID

The vCard PRODID element is converted into the JSCard "prodId" property (Figure 24).

```
BEGIN:VCARD
VERSION:4.0
...
PRODID:-//ONLINE DIRECTORY//NONSGML Version 1//EN
...
END:VCARD

{
...
"prodId": "-//ONLINE DIRECTORY//NONSGML Version 1//EN"
...
}
```

Figure 24: PRODID mapping example

2.8.4. REV

The vCard REV element is transformed into the JSCard "updated" property (Figure 25).

```
BEGIN:VCARD
VERSION:4.0
...
REV:19951031T222710Z
...
END:VCARD

{
...
"updated": "19951031T222710Z"
...
}
```

Figure 25: REV mapping example

2.8.5. SOUND

The vCard SOUND element is represented in JSCard as a "Resource" item of the "online" array (Figure 26). The "type" and "label" members are set to "uri" and "sound" respectively.

The PREF and MEDIATYPE parameters can be represented by the "isPreferred" and "mediaType" properties respectively.

```
    BEGIN:VCARD
    VERSION:4.0
    ...
    SOUND:CID:JOHNQPUBLIC.part8.19960229T080000.xyzMail@example.com
    ...
    END:VCARD

    {
    ...
    "online":[
              ...
              {
               "type": "uri",
               "label": "sound",
               "value":
"CID:JOHNQPUBLIC.part8.19960229T080000.xyzMail@example.com"
              },
              ...
            ],
    ...
    }
```

Figure 26: SOUND mapping example

2.8.6. UID

The vCard UID element corresponds to the JSCard "uid" property (Figure 27).

```
       BEGIN:VCARD
       VERSION:4.0
       ...
       UID:urn:uuid:f81d4fae-7dec-11d0-a765-00a0c91e6bf6
       ...
       END:VCARD

       {
       ...
       "uid": "urn:uuid:f81d4fae-7dec-11d0-a765-00a0c91e6bf6"
       ...
       }
```

Figure 27: UID mapping example

2.8.7. PID Parameter and CLIENTPIDMAP

TBD

2.8.8. URL

The vCard URL element is represented in JSCard as a "Resource" item of the "online" array (Figure 28). The "type" and "label" members are set to "uri" and "url" respectively.

The PREF and MEDIATYPE parameters can be represented by the "isPreferred" and "mediaType" properties respectively.

```
 BEGIN:VCARD
 VERSION:4.0
 ...
 URL:http://example.org/restaurant.french/~chezchic.html
 ...
 END:VCARD

 {
 ...
 "online":[
           ...
           {
            "type": "uri",
            "label": "url",
            "value": "http://example.org/restaurant.french/~chezchic.html"
           },
           ...
         ],
 ...
 }
```

Figure 28: URL mapping example

2.9. Security Properties

2.9.1. KEY

The vCard KEY element is represented in JSCard as a "Resource" item of the "online" array (Figure 29). The "type" and "label" members are set to "uri" and "key" respectively.

The PREF and MEDIATYPE parameters can be represented by the "isPreferred" and "mediaType" properties respectively.

```
BEGIN:VCARD
VERSION:4.0
...
KEY:http://www.example.com/keys/jdoe.cer
...
END:VCARD
```

```
{
...
"online":[
          ...
          {
           "type": "uri",
           "label": "key",
           "value": "http://www.example.com/keys/jdoe.cer"
          },
          ...
        ],
...
}
```

Figure 29: KEY mapping example

2.10. Calendar Properties

2.10.1. FBURL

The vCard FBURL element is represented in JSCard as a "Resource" item of the "online" array (Figure 30). The "type" and "label" members are set to "uri" and "fburl" respectively.

The PREF and MEDIATYPE parameters can be represented by the "isPreferred" and "mediaType" properties respectively.

```
BEGIN:VCARD
VERSION:4.0
...
FBURL;PREF=1:http://www.example.com/busy/janedoe
FBURL;MEDIATYPE=text/calendar:ftp://example.com/busy/project-a.ifb
...
END:VCARD
```

```
{
...
"online":[
          ...
          {
           "type": "uri",
           "label": "fburl",
           "value": "http://www.example.com/busy/janedoe",
           "isPreferred": true
          },
          {
           "type": "uri",
           "label": "fburl",
           "value": "ftp://example.com/busy/project-a.ifb",
           "mediaType": "text/calendar"
          },
          ...
        ],
...
}
```

Figure 30: FBURL mapping example

2.10.2. CALADRURI

The vCard CALADRURI element is represented in JSCard as a "Resource" item of the "online" array (Figure 31). The "type" and "label" members are set to "uri" and "caladruri" respectively.

The PREF and MEDIATYPE parameters can be represented by the "isPreferred" and "mediaType" properties respectively.

```
BEGIN:VCARD
VERSION:4.0
...
CALADRURI;PREF=1:mailto:janedoe@example.com
CALADRURI:http://example.com/calendar/jdoe
...
END:VCARD
```

```
{
...
"online":[
          ...
          {
           "type": "uri",
           "label": "caladruri",
           "value": "mailto:janedoe@example.com",
           "isPreferred": true
          },
          {
           "type": "uri",
           "label": "caladruri",
           "value": "http://example.com/calendar/jdoe"
          },
          ...
        ],
...
}
```

Figure 31: CALADRURI mapping example

2.10.3. CALURI

The vCard CALURI element is represented in JSCard as a "Resource" item of the "online" array (Figure 32). The "type" and "label" members are set to "uri" and "caluri" respectively.

The PREF and MEDIATYPE parameters can be represented by the "isPreferred" and "mediaType" properties respectively.

```
BEGIN:VCARD
VERSION:4.0
...
CALURI;PREF=1:http://cal.example.com/calA
CALURI;MEDIATYPE=text/calendar:ftp://ftp.example.com/calA.ics
...
END:VCARD
```

```
{
...
"online":[
          ...
          {
           "type": "uri",
           "label": "caluri",
           "value": "http://cal.example.com/calA",
           "isPreferred": true
          },
          {
           "type": "uri",
           "label": "caluri",
           "value": "ftp://ftp.example.com/calA.ics",
           "mediaType": "text/calendar"
          },
          ...
        ],
...
}
```

Figure 32: CALURI mapping example

2.11. Extended Properties

If an extended property is a resource, JSCard already allows to represent it by setting the "type" property to "other" and specifying a value for the "label" property.

Any other property supporting a custom feature MAY be added and its name MUST be prefixed with a specific domain name to avoid conflict, e.g. "example.com/customprop".

2.12. JSCard's Required Properties

While converting a vCard into a JSCard, only the JSCard topmost "uid" property is required.

2.13. JSCard's Unmatched Properties

The "preferredContactMethod" property doesn't match any vCard element.

3. IANA Considerations

This document has no actions for IANA.

4. Security Considerations

This document doesn't report any security consideration.

5. References

5.1. Normative References

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5.2. Informative References

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