JSContact:
a more efficient alternative to jCard in RDAP

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JSContact in brief

- A contact card representation alternative to vCard
  - JSON-based
  - vCard content supported, but no direct mapping
  - Highly structured:
    - Main objects: JSCard, JSCardGroup

- Status
  - Co-author: Robert Stepanek of FastMail
  - Current WG: DISPATCH

- Open issues:
  - Gender
  - Information needed for synchronization (PID and CLIENTPIDMAP)
  - Two-level vs. Multi-level preference

- Coming soon:
  - Version 06
  - Informal document about JSContact - vCard mapping
Why JSContact in RDAP?

- Feedback from RDAP Pilot WG ("RDAP Pilot Report", 25 April 2019)
  - The most frequent concern is related to the handling of vCard/jCard:
    - unintuitive
    - very complicated for both consumers and servers
    - uncompliant with REST API standards
    - affecting performance

- JSContact is able to represent the same information as jCard:
  - In particular, it meets the requirements about representing:
    - multilingual information
    - unstructured data

- JSContact is more efficient than jCard:
  - Requires no extra work in serialization/deserialization
  - Is simple to process:
    - follows an object-oriented rather than array-oriented approach
    - includes no jagged arrays
    - prefers maps rather than arrays in implementing collections
  - Defines an unambiguous data model
Mapping – RFC7483

```
"vcardArray": [
    "vcard",
    [
        ["version", {}, "text", "4.0"],
        ["fn", {}, "text", "Joe User"],
        ["kind", {}, "text", "individual"],
        ["lang", {
            "pref": "1"
        }],
        ["language-tag", "fr"],
        ["lang", {
            "pref": "2"
        }],
        ["language-tag", "en"],
        ["org", {
            "type": "work"
        }],
        ["title", {}, "text", "Research Scientist"],
        ["role", {}, "text", "Project Lead"],
        ["adr", {
            "type": "work"
        },
        ["text", {
            "extension": "Suite 1234",
            "street": "4321 Rue Somewhere",
            "locality": "Quebec",
            "region": "QC",
            "postcode": "G1V 2M2",
            "country": "Canada"
        }],
        ["tel", {
            "type": ["work", "voice"],
            "pref": "1"
        },
        ["uri", "tel:+1-555-555-1234;ext=102"],
        ["email", {
            "type": "work"
        },
        ["text", "joe.user@example.com"
    ]
]
"jscard":{
    "uid": <handle value>,
    "updated": <"registration"/"last changed" event value>,
    "name": {
        "fullName": { "value": "Joe User" }
    },
    "kind": "individual",
    "preferredContactLanguages": {
        "fr": { "preference": 1 },
        "en": { "preference": 2 }
    },
    "organization": [{ "value": "Example" }],
    "jobTitle": [{ "value": "Research Scientist" }],
    "role": [{ "value": "Project Lead" }],
    "addresses": [
        {
            "type": "work",
            "extension": "Suite 1234",
            "street": "4321 Rue Somewhere",
            "locality": "Quebec",
            "region": "QC",
            "postcode": "G1V 2M2",
            "country": "Canada"
        }
    ],
    "phones": [
        {
            "type": "voice",
            "label": "work",
            "isPreferred": true,
            "value": "tel:+1-555-555-1234;ext=102"
        }
    ],
    "emails": [
        {
            "type": "work",
            "value": "joe.user@example.com"
        }
    ]
}"
```
"vcardArray": [ 
  "vcard",
  [ 
    "version", {}, "text", "4.0" ],
  [ "fn",
    { "language": "ja", "altid": "1" },
    "text",
    "大久保 正仁"
  ],
  [ "fn",
    { "language": "en", "altid": "1" },
    "text",
    "Okubo Masahito"
  ],
  [ "title",
    { "language": "ja", "altid": "1" },
    "text",
    "事務局長"
  ],
  [ "title",
    { "language": "en", "altid": "1" },
    "text",
    "Secretary General"
  ],
  [ "kind", {}, "text", "individual" ],
  [ "lang", { "pref": "1" }, "language-tag", "ja" ],
  [ "lang", { "pref": "2" }, "language-tag", "en" ]
]

"jscard":{
  "uid": <handle value>,
  "updated": <"registration"/"last changed" event value>,
  "name": { 
    "fullName": { 
      "value": "大久保 正仁",
      "language": "ja",
      "localizations": { 
        "en": "Okubo Masahito"
      }
    }
  },
  "jobTitle": [ 
    { 
      "value": "事務局長",
      "language": "ja",
      "localizations": { 
        "en": "Secretary General"
      }
    }
  ],
  "kind": "individual",
  "preferredContactLanguages": { 
    "ja": { "preference": 1 },
    "en": { "preference": 2 }
  }
}
"vcardArray": [
  "vcard",
  [
    "version": {}, "text": "4.0" ],
  [ "fn",
    { "altid": "1", "language": "zh-Hant-TW" },
    "text",
    "台灣固網股份有限公司"
  ],
  [ "fn",
    { "altid": "1", "language": "en" },
    "text",
    "Taiwan Fixed Network CO., LTD." ]
],
[ "kind", {}, "text", "individual" ],
[ "adr",
  { "label": "8F., No.172-1, Sec.2, Ji-Lung Rd," },
  "text",
  [ "", "", "", "", "", "", "", "" ]
],
[ "tel", { "type": "voice" }, "text", "" ],
[ "tel", { "type": "fax" }, "text", "" ],
[ "email", {}, "text", "" ]
]

"jscard":{
  "uid": <handle value>,
  "updated": <"registration"/"last changed" event value>,
  "name": {
    "fullName": {
      "value": "Taiwan Fixed Network CO., LTD.",
      "language": "en",
      "localizations": {
        "zh-Hant-TW": "台灣固網股份有限公司"
      }
    }
  },
  "kind": "individual",
  "addresses": [
    { "type": "work",
      "fullAddress": {
        "value": "8F., No.172-1, Sec.2, Ji-Lung Rd,"
      }
    }
  ],
  "phones": [
    { "type": "voice",
      "value": ""
    },
    { "type": "fax",
      "value": ""
    }
  ],
  "emails": [
    { "value": "" }
  ]
}
Transition model

- **rdap_level_0:**
  - jCard required
  - jsCard optional
    - requested by query parameter jscard=1
    - "jscard" in place of "vcardArray" in the response
    - "jscard_level_0" added to rdapConformance

- **rdap_level_1:**
  - jCard optional
    - requested by query parameter jcard=1
    - "vcardArray" in place of "jscard" in the response
    - "vcardArray_level_0" added to rdapConformance
  - jsCard required

- **Advantages:**
  - Only one contact representation would be included into the response
  - The response would always be compliant to RFC7483
  - The backward compatibility would be guaranteed throughout the transition
  - Servers and clients could execute their transitions independently