



UN/LOCODE & UN/CEFACT JSON-LD Web Vocabulary



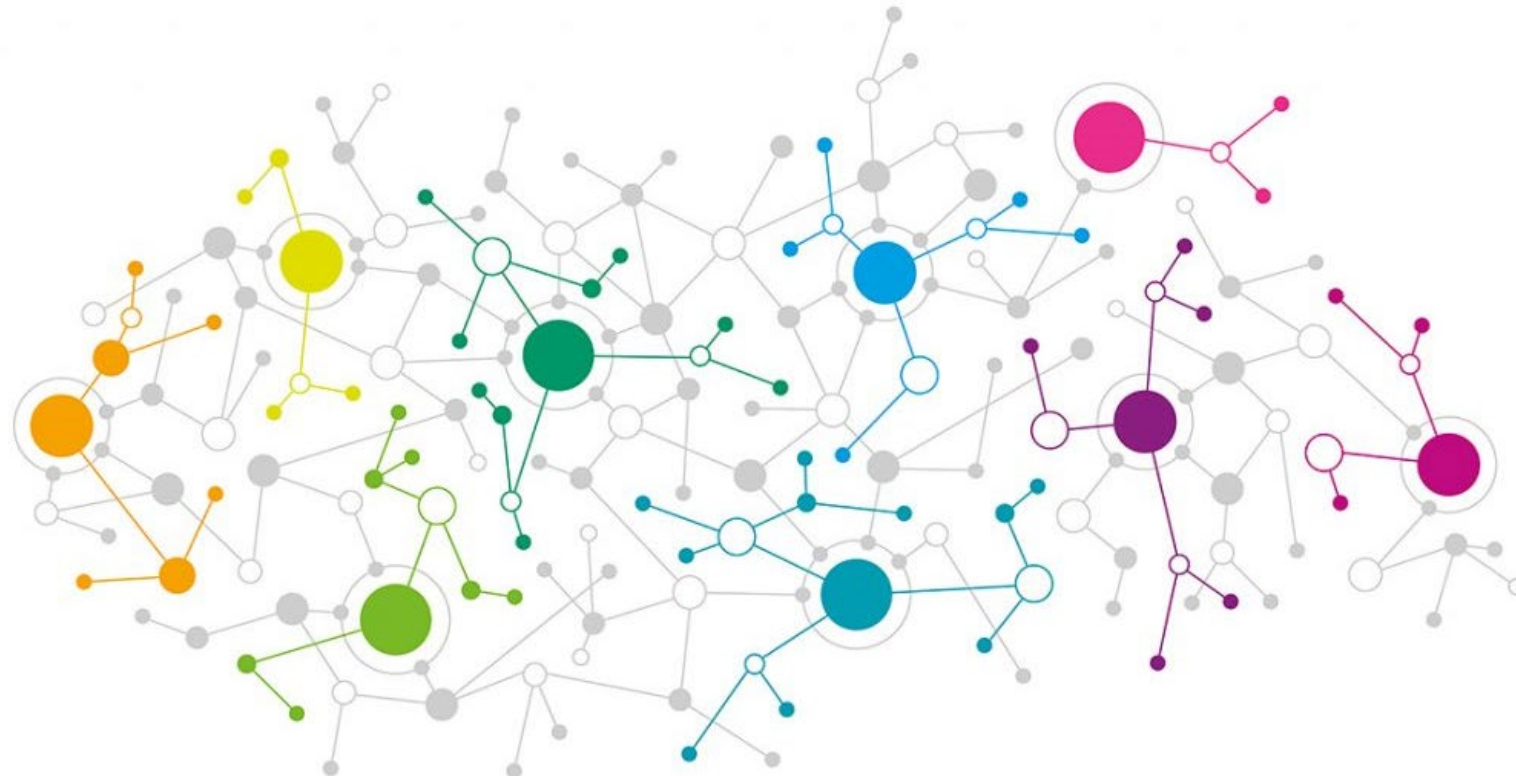
2023 Meeting - UN/LOCODE Advisory Group

11th May 2023, Geneva, Switzerland



Agenda

1. What is JSON-LD
2. JSON-LD? How does it benefit UN/LOCODE?





What is JSON-LD?

JSON-LD stands for "JavaScript Object Notation for Linked Data". It is a way of structuring and embedding machine-readable data into web pages using JSON syntax. JSON-LD allows developers to add metadata to web pages that search engines, social media platforms, and other applications can use to understand the content and its context.

JSON-LD can be used for a variety of applications, including search engine optimization, social media sharing, and data integration. By providing a standardized way to express data, JSON-LD can improve the discoverability and usefulness of information on the web. One of the key advantages of using JSON-LD for code lists is that it allows for the creation of semantic relationships between the different values in the list.

JSON-LD is a data format that is both human and machine-readable. It uses a syntax that is familiar to developers working with JSON data, making it easy to read and write by hand. At the same time, it also includes semantic annotations in the form of linked data, which provides additional context and meaning to the data. These annotations can be used by machines to automatically process and interpret the data, allowing for more efficient data integration and interoperability across different systems and applications.





What is the UN/CEFACT JSON-LD Web Vocabulary ?

The UN/CEFACT Web Vocabulary is a linked data representation of the UN/CEFACT Buy-Ship-Pay Reference Data Model. The BSP RDM generalizes concepts of Multi-Modal Transport Reference Data Model (MMT-RDM) and the Supply Chain Reference Data Model (SCRDM), which can be applied by country and regional administrations and industries.

The contexts and vocabularies that are developed and maintained by the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) to facilitate the exchange of data between different systems and organizations involved in international trade.

The UNLOCODE is included in the UN/CCL (Core Component Library) because it is a widely used standard for identifying and representing locations in international trade transactions.



UN/CEFACT Web Vocabulary

<https://vocabulary.uncefact.org/>

About

The UN/CEFACT Web Vocabulary is a linked data representation of the UN/CEFACT [Buy-Ship-Pay Reference Data Model](#). The BSP RDM generalizes concepts of Multi-Modal Transport Reference Data Model (MMT-RDM) and the Supply Chain Reference Data Model (SCRDM), which can be applied by country and regional administrations and industries.

Version

The vocabulary reflects BSP version 22A.

Contexts

JSON-LD Context files are available here:

<https://vocabulary.uncefact.org/unece-context.jsonld>

<https://vocabulary.uncefact.org/unlocode-vocab-context.jsonld>

Content Negotiation

Machine readable JSON-LD term definitions are accessible using HTTP content negotiation:

```
curl https://vocabulary.uncefact.org/ -H 'Accept: application/ld+json'
```

```
curl https://vocabulary.uncefact.org/unlocode# -H 'Accept: application/ld+json'
```

Links

<https://unece.org/trade/uncefact/mainstandards>

<https://github.com/uncefact>



JSON-LD? How does it benefit UN/LOCODE?

Using JSON-LD can improve UN/LOCODE by making it easier for applications to consume and process the information contained within it.

By including JSON-LD structured data within UN/LOCODE, the location information can be more easily understood and utilized by search engines and other applications. This can lead to improved search results and better integration with other systems.

For example, a transportation company could use the UN/LOCODE codes to identify the locations of ports and airports for their shipments. By including JSON-LD structured data within the UN/LOCODE codes, the transportation company could more easily integrate this information with their own internal systems, such as their shipping management software or logistics systems.

LOCODE	Location name	Sub-div	Function	Co-ordinates
IN	AAA Sample name	TN	x	0045N-00404S
SW	AAA Sample name	BD	x x	0066N-00894W
CH	AAA Sample name	GE	x	0457N-01545S



```
    "age" : {
      "value" : 37,
      "units" : "years"
    },
    "children" : {
      "breadcrumb": "Homepage > Category > Wonderful Things",
      "@type": "Person",
      "first name": "Josephine",
      "last name": "Schmoe",
      "age" : {
        "value" : 1,
        "units" : "years"
      }
    }
  }
  <script type="application/ld+json">
  {
    ... random random random ...
  }
  Store": "http://example123.com/store",
  Product": "http://example123.com/product",
  "@type": "WebPage",
  <script type="application/ld+js
  {
    ... random random random ...
  }
```

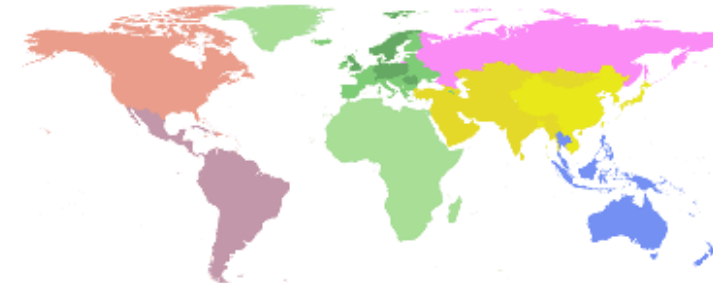


JSON-LD? How does it benefit UN/LOCODE?

In addition, JSON-LD can provide a standardized way to describe the meaning and relationships between different elements of UN/LOCODE data. This can make it easier for developers to build applications that consume and process UN/LOCODE information, leading to increased adoption and use of this important standard.

Here's an example JSON-LD code snippet that uses the UN/CEFACT UN/LOCODE Vocabulary Context to represent a UN/LOCODE code for Bridgetown in Barbados:

```
{
  "@context": "https://vocabulary.uncefact.org/unlocode-vocab-
context.jsonld",
  "@type": "Locode",
  "countryCode": "BB",
  "locationName": "Bridgetown",
  "function": "Port",
  "status": "Functioning",
  "coordinates": {
    "@type": "GeoCoordinates",
    "latitude": 13.1037,
    "longitude": -59.6167
  }
}
```





JSON-LD? How does it benefit UN/LOCODE?

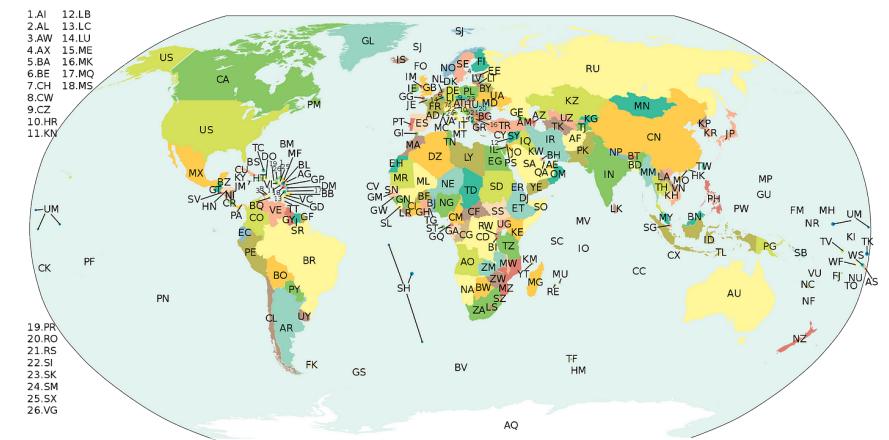
In this example, the '@context' property references the UN/CEFACT UN/LOCODE Vocabulary Context, which defines the terms used in the JSON-LD code, including the 'locode' type and the vocabulary terms for the location properties ('countryCode', 'locationName', 'function', 'status', and 'coordinates').

The @type property indicates that this JSON-LD code represents a 'locode', and the 'countryCode', 'locationName', 'function', and 'status' properties provide information about the location of Bridgetown.

The 'coordinates' property represents the geographic coordinates of Bridgetown, using the 'GeoCoordinates' type and the 'latitude' and 'longitude' properties.

By using the UN/CEFACT UN/LOCODE Vocabulary Context to represent UN/LOCODE codes in JSON-LD format, it becomes easier for applications to consume and process the location information, leading to improved data interoperability and better integration with other systems.

```
{
  "@context": "https://vocabulary.uncefact.org/unlocode-vocab-context.jsonld",
  "@type": "Locode",
  "countryCode": "BB",
  "locationName": "Bridgetown",
  "function": "Port",
  "status": "Functioning",
  "coordinates": {
    "@type": "GeoCoordinates",
    "latitude": 13.1037,
    "longitude": -59.6167
  }
}
```





JSON-LD? How does it benefit UN/LOCODE?

JSON-LD is a data format that is both human and machine-readable. It uses a syntax that is familiar to developers working with JSON data, making it easy to read and write by hand. At the same time, it also includes semantic annotations in the form of linked data, which provides additional context and meaning to the data. These annotations can be used by machines to automatically process and interpret the data, allowing for more efficient data integration and interoperability across different systems and applications.

```

{
  "@context": "https://vocabulary.uncefact.org/unlocode-vocab-context.jsonld",
  "@type": "Locode",
  "countryCode": "BB",
  "locationName": "Bridgetown",
  "function": "Port",
  "status": "Functioning",
  "coordinates": {
    "@type": "GeoCoordinates",
    "latitude": 13.1037,
    "longitude": -59.6167
  }
}
    
```



UN/LOCODE

desc

[Back to the country](#)

Values:

URI	Label	Label With Diacritics	Functions	Country Code	Country Subdivision	Latitude	Longitude
unlcd:BBBGI	Bridgetown		unlcdf:1, unlcdf:4, unlcdf:5	unlcd:BB			
unlcd:BBCCH	Christ Church		unlcdf:3	unlcd:BB	unlcds:BB01	13.083333	-59.533333
unlcd:BBG5B	Brighton		unlcdf:3	unlcd:BB	unlcds:BB10	13.116667	-59.516666
unlcd:BBH9G	Edge Hill		unlcdf:3	unlcd:BB	unlcds:BB08	13.15	-59.6
unlcd:BBHLT	Holetown		unlcdf:3	unlcd:BB	unlcds:BB04	13.183333	-59.633335
unlcd:BBJCK	Jackson		unlcdf:6	unlcd:BB	unlcds:BB08	13.15	-59.6

UN/CEFACT JSON-LD Web Vocabularies provide one more additional source of reference to access the latest UN/LOCODE directory; in a machine + human readable format.



Thank you!

