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

2023 Meeting - UN/LOCODE Advisory Group
11th May 2023, Geneva, Switzerland
UN/CEFACT Web Vocabulary and UN/LOCODE

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.
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.
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:

```json
{
    "@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.
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.

```json
{
  "@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/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!