44th Meeting of the IEC-ISO-ITU-UNECE eB MoU/MG

Report from UN/CEFACT M+T PDA

Background

The United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) Methodologies and Technologies (M+T) Programme Development Area supports technical development and implementation of specific recommendations and standards in trade facilitation and electronic business, providing a syntax-neutral Common Reference Data Model that can be consistently applied for paper, UN/EDIFACT, XML, and now JSON and API deliverables as well.

The Methodology and Technology PDA builds upon the structures and work items formerly established by the TMG, ATG, ICG and its predecessor within the UNECE Working Party 4 which was founded in the 1960s.

Under this area of activity, UN/CEFACT develops and maintains e-business standards related to methodology and technology support areas. These include key themes such as:

- The Core Component Library (UN/CCL) and UN/Schema
- United Nations Electronic Data Interchange for Administrations, Commerce and Transport (UN/EDIFACT) directories
- Validation
- Core Component Technical Specification (CCTS)
- Core Component Data Type Catalogue
- Core Component Business Document Assembly (CCBDA)
- UML Profile for Core Components
- UN/CEFACT Modelling Methodology (UMM)
- XML Naming and Design Rules
- JSON Naming and Design Rules
- OpenAPI Naming and Design Rules
- JSON-LD Vocabulary
- The Business Requirement Specification template
- The Requirement Specification Mapping template
- Reference Data Model Guideline
- Code Management User Guide

Recent achievements of UN/CEFACT M+T.

Publication of UN/EDIFACT Directories 22B

Nine DMRs, along with seven Code Requests and two Code Changes are being processed and entered into UN/EDIFACT for the release 22B which has been finalized and published.

Application Programming Interface Technical Specification (API TechSpec)

Multiple groups within UN/CEFACT wish to develop standard Application Programming Interfaces (APIs) as part of the set of technical deliverables from their respective projects. A previous project, RDM2API, demonstrated the possibility of delivering the semantics of UN/CEFACT as APIs. This project developed

the required technical specifications enabling a standardized API to use the richness of information residing in the Reference Data Models (RDMs) and derived deliverables.

This project published two main deliverables;

The JSON Schema Naming and Design Rules technical specification defines an architecture and a set of rules necessary to define, describe and use JSON to consistently express business information exchanges namely via APIs. It is based on the JSON Schema team's specification and the UN/CEFACT Core Components Technical Specification. This specification will be used by UN/CEFACT to define JSON Schema and JSON Schema documents, which will be published as UN/CEFACT standards. It will also be used by other organisations who are interested in maximizing inter- and intra-industry interoperability.

The OpenAPI Naming and Design Rules technical specification defines an architecture and a set of rules necessary to specify, describe and implement APIs based on an OpenAPI specification to consistently express business information. It is based on the OpenAPI specification and the UN/CEFACT Core Components Technical Specification. This specification describes the requirements that UN/CEFACT compliant APIs should fulfil. It will be used by other organisations who are interested in maximizing inter- and intra-industry interoperability.

Current and Upcoming activity

JSON-LD Web Vocabulary

The aim of this project is to expose the rich UN/CEFACT semantics so it can be used in conjunction with modern linked data technologies to express precise, machine readable semantics for diverse applications such as Knowledge Graphs, Digital Twins, and Machine Learning. The intended audience of the UN/CEFACT vocab includes other UN/CEFACT projects as well as anyone else in the world expressing trade and transport data.

The JSON-LD Web Vocabulary project builds upon the work done on the RDM2API work stream between 2018 and 2021, resulting among other deliverables in a draft vocabulary: https://vocabulary.uncefact.org/.

Currently, the project is finalizing NDRS, transformation code, and deployment of JSON-LD output.

Semantic harmonization

The UN/CEFACT M+T PDA are happy to assist the IEC/TC 57 on the development of the Core Component needs. This is in line with the eB-MoU/MG resolution R16/09.