UN standards for the digitalization of multimodal data exchange, using the UN/CEFACT Multimodal Transport Reference Data Model (MMT RDM)

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UN Development Account project

*Transport and Trade Connectivity in the Age of Pandemics*

- Upgrading existing and developing data exchange standards for key documents accompanying cargo in different modes of transport
- Based on UN/CEFACT Multimodal Transport Reference Data Model
- Pilot applications: e.g. in a digital multimodal transport corridor or documents (FIATA B/L, air cargo, IWT)

[https://unttc.org](https://unttc.org)
Cooperation and teamwork needed

- Challenges: Digitalization efforts fragmented between modes of transport and sectors. Need to stop contacts & COVID-19 infection
- UNECE offers solution: interoperability in data and document exchange between modes & sectors using UN/CEFACT’s Multimodal Transport Reference Data Model (MMT RDM)
- EU eFTI Regulation uses MMT RDM
- Working with organizations (ICAO, IMO, FIATA, OSJD, CIT, RailData, UIC, OTIF, etc.), countries, and the business community
Seamless multimodal supply chain

The transport chain

Transportation of a consignment through various modes

Supported by UN/CEFACT standards

Trip 1: sea
Ship
Port community system
Sea

Trip 2: rail
Train
Country 1, 2

Trip 3: road
Truck
Country 2

Trip 4: air
Airplane

shipper, forwarder
transport operator, freight forwarder
captain, operator, driver, pilot
regulatory controls

Export and import declarations, transit documents

Information for goods control
For example: the CIM-SMGS railway consignment note referenced to the UN/CEFACT Multi-Modal Transport Reference Data Model, according to the prepared XML schema for CIM-SMGS.

The same was prepared for the SMGS consignment note.

Subsets for the CIM-SMGS and SMGS consignment notes and the consignment note under UNECE’s work on a Unified Railway Law (URL) developed MS Excel and UML diagram, XSDs and html publication prepared

Standards for CIM/SMGS wagon list finalized

https://service.unece.org/trade/uncefact/publication/Transport and Logistics/CIM-SMGS_Consignment Note/HTML/001.htm
Documents/dataset mappings to MMT RDM:
1. Air Waybill (AWB)
2. Dangerous Goods Declaration (DGD)
3. Consignment Security Declaration (CSD)

Plan:
Two phases
1. Standards – Drafts Done
2. Implementations – In progress

Now:
- Draft Standards Reviewed by Experts
- Baselined and Artefacts Produced
- Ready for Bureau Approval (pre-publishing)

1. Standards:
Follows UN/CEFACT MMT RDM
- Business Requirements Specifications (BRS)
- Core Component Library (CCL) Structure
- Dataset alignment with other ‘document’ objects
- XLS guideline structure
- XSD schema
- UML diagrams
- HTML index
- JSON-LD schema (future development across UN/CEFACT)

2. Pilots:
In collaboration with ICAO
- Identify/outreach to candidate ‘corridors’
- Engage. Educate. Assist – with deployments
Railway documents and data

Basic data mappings

CIM
URL
CIM/SMGS
SMGS
EDIFACT

Common railway data elements
E.g. pilot project Europe - Asia

1. Multimodal interoperability
2. Compatibility of data exchange on cargo transported by railway (EAEU – W.Europe)

• Legal framework: negotiations – agreements
• Technology neutral solution – EDI, XML, JSON API – for blockchain
• Call to all stakeholders to collaborate/use standards
• Move from documents to data exchange
Matrix: data mapping for CIM/SMGS, eCMR, eTIR, eFIATA BL, AWB...

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Similar mapping matrix and a data set can and will be developed for Dangerous Goods Declarations in the five transport modes.
FIATA best practice experience – electronic FIATA Bill of Lading eFBL

1. Summer 2020: Decision to base eFBL standard on UN/CEFACT semantic standards & Multimodal Transport Reference Data Model (MMT RDM)

2. 2020: Data mapping to the MMT RDM by an informal group of UN/CEFACT & FIATA technical & business experts in 2020

3. Early 2021: First draft of eFBL standard released

4. Feb.-Aug. 2021: eFBL tested - proof of concept, involving seven software providers

5. Autumn 2021: Open source standard available on Git Hub (open for comments) at https://github.com/FIATA/eFBL
FIATA best practice experience: eFBL

- Keyword: “interoperability” for seamless exchange of data & documents for all modes of transport using UN/CEFACT semantic standards and the MMT RDM
- Next steps: implementation of eFBL; possible extension of the solution using MMT RDM to other documents: FIATA’s Forwarders Certificate of Receipt (FCR), Warehouse Receipt (FWR), non-negotiable Multimodal Transport Waybill (FWB), as well as the House Bill of Lading and other documents
Thanks!

Further Information:

Standards and reports available on UNTTC.org project and UN/CEFACT pages.

On the project web site (unttc.org), we upload information on the standards and tools at https://unttc.org/stream/electronic-trade-and-transport-documents-and-data

A streamlined web presentation of the UN/CEFACT standards can be found at https://unece.org/trade/uncefact/standards. Information on the UN/CEFACT projects: https://unefact.unece.org/display/unefactpublic/Transport+Modal+Views+of+MMT

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