

# **Interoperability for data and document exchange in multimodal transport aligned to UN standards.**

## **UN project to respond to the COVID-19 crisis**

### **ECE segment: multimodal data exchange harmonization using UN (UN/CEFACT) standards and Multimodal Transport Reference Data Model**

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)

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# Seamless multimodal supply chain

## The transport chain

Transportation of a consignment through different modes

Invoice, packing list, certificate of origin

Bill of Lading  
IMO/FAL forms

CIM,  
SMGS

eCMR,  
eTIR

airwaybill,  
CSD



Trip 1:  
sea

Trip 2:  
rail

Trip 3:  
road

Trip 4:  
air

Ship

Train

Truck

Airplane

Sea

Country 1, 2

Country 2

shipper, forwarder

transport operator,  
freight forwarder

captain, operator,  
driver, pilot

regulatory controls

Consignment information

B2B

To be fed into regulatory Single Window and other  
systems processing  
export and import declarations, transit documents

Information for  
goods control

## Ready standards or standards under preparation

1. Standardized data exchanges (executive guide; business requirement specification; business name structure; subset; CCL structure; XLS guideline structure; XSD schema; UML diagram; HTML index, using as a model the e-CMR standard) [www.unece.org/unecefact/mainstandards.html](http://www.unece.org/unecefact/mainstandards.html), already prepared for the following documents:

- eCMR
  - Cross Industry Invoice
  - Cross Industry Delivery
  - Cross Industry Catalogue
  - Cross Industry Quotation
  - Cross Industry Remittance Advice
  - Cross Industry Scheduling
  - Cross Industry Ordering Process
  - Material Safety Data Sheet Details (MSDS)
  - Contract Financial Execution Management
  - Market Research Information
  - Verified Gross Mass (VERMAS) documents
  - International Forwarding and Transfer documents
  - Smart container information
  - A number of agricultural certificates, accounting and other documents
- These standards you can find at [www.unece.org/trade/unecefact/mainstandards.html](http://www.unece.org/trade/unecefact/mainstandards.html)

2. Standardized data exchanges published in October 2020, making information already in the MMT-RDM more easily discoverable

- Provisional booking
  - Firm booking
  - Booking confirmation
  - Shipping instructions
  - Waybill
  - Status report
  - Status request
  - Packing list
  - RASFF (Rapid Alert for Security of Food and Feed)
- (published at [www.unttc.org](http://www.unttc.org) and [www.unece.org/trade/unecefact/mainstandards.html](http://www.unece.org/trade/unecefact/mainstandards.html))

## Key documents accompanying goods (B2B)

3. Standardized data exchanges to support cross-modal cargo transfers

- Inland water transport contract document: IWT “Bill of Lading”; CMNI consignment note; etc.
- Maritime waybill.
- CIM/SMGS and SMGS Consignment Note;
- CIM/SMGS Wagon List (+ Commercial Act, etc.)
- eCERT (sanitary-phytosanitary certificates and basis for other certificates): aligned to the Buy-Ship-Pay Reference Data Model

4. Air cargo and dangerous goods documents:

- **airwaybill,**
- **dangerous goods declaration, and**
- **consignment security declaration**

FIATA multimodal Bill of Lading +

**Common foundation for all multimodal data & e-docs based on UN/CEFACT standards & reference data models – Stakeholder agencies retain control over their documents and legal frameworks. EU’s eFTI Regulation uses MMT RDM**

# Matrix: data mapping for CIM/SMGS, eCMR, eTIR, eFLATA BL, AWB...

## Air Waybill

X  
X

X  
X  
X  
X  
X  
X  
X  
X  
X  
X  
X  
X  
X  
X  
X

X  
X  
X  
X  
X  
X  
X



Similar mapping matrix and a data set can and will be developed for Dangerous Goods Declarations in the five transport modes

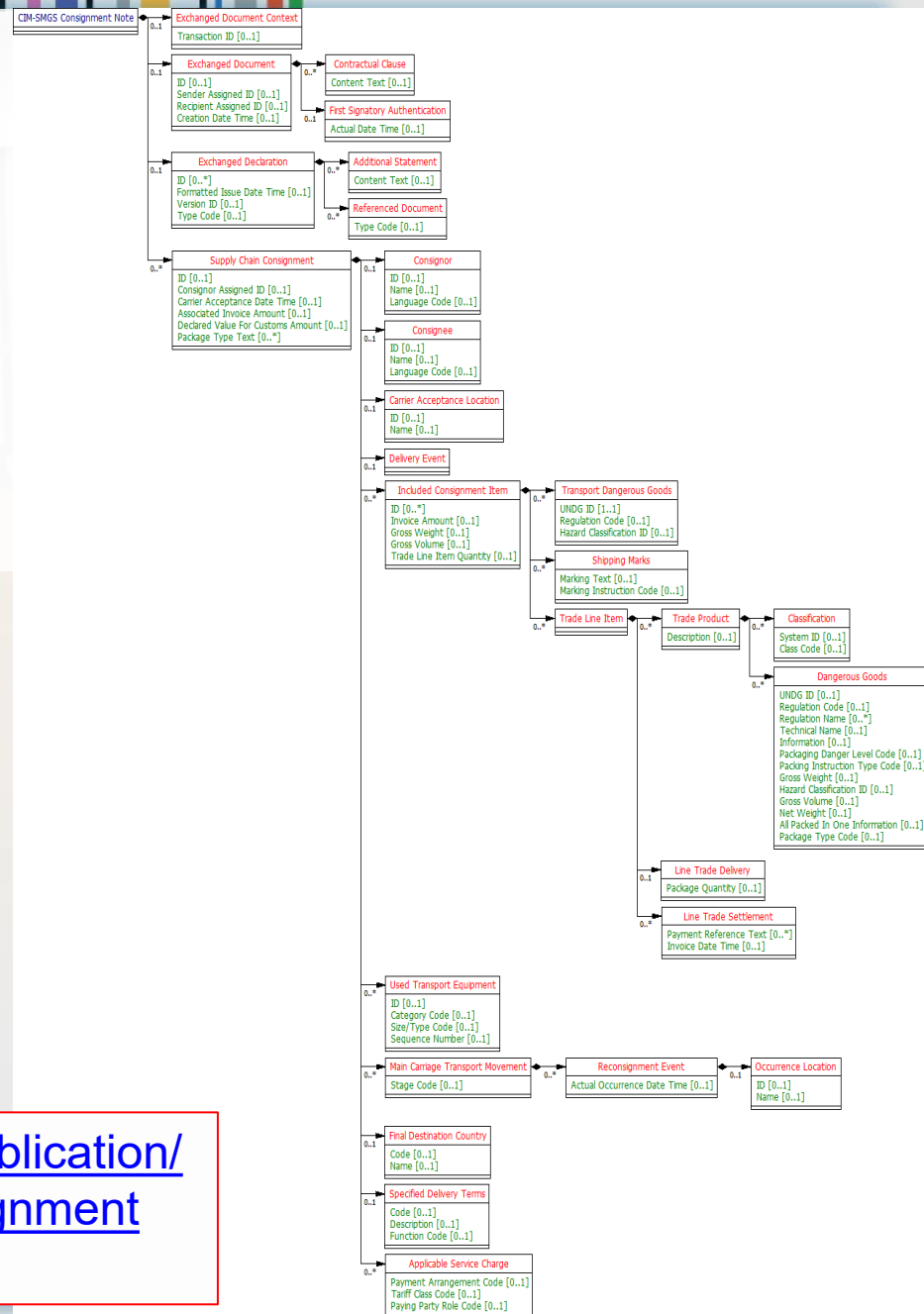
**For example:  
the CIM-SMGS railway consignment  
note referenced to the UN/CEFACT  
Multi-Modal Transport Reference  
Data Model, according to the  
prepared XML schema for CIM-  
SMGS**

**Subsets for the CIM-SMGS  
consignment note and the consignment  
note under UNECE's work on the  
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>





# Digitalization of air cargo transport information as part of interoperability for multimodal data

## UNDA project: [unttc.org](https://unttc.org) web site


**UNTTTC**

Transport and trade connectivity in the age of pandemics

About Partners Highlights Contact

Working together to better respond to pandemics through resilient supply chains, transport and trade.



### Contactless solutions

It aims at minimizing physical contact among people in cross-border supply chains by facilitating the flow of goods without spreading the virus.

• eTIR International System application / Interagency multidisciplinary Advisory Group

Electronic trade and transport documents and data

Supporting the implementation of automated road and rail solutions

Support to implementing best practices in TF in times of crisis and epidemic



### Seamless connectivity

It focuses on eliminating obstacles to cross-border trade and transport operations arising from the COVID-19 crisis.

UNCTAD/ASYCUDA Guidelines

Cross-border processes performance management – ASYPM

Facilitate Humanitarian aid flows through efficient and managed coordination – ASYREC

Key international commercial law implications

National TF Committee coordination: general

National TF Committees coordination: best practices in times of crisis and epidemic

National TF Committees: ECE

TRAINS online NTM portal & training

Analysis of NTMs introduced as part of



### Collaborative solutions

It seeks to strengthen regional and sectoral cooperation to facilitate joint actions and solutions in responding to the COVID-19 pandemic.

Asia Pacific Region

Africa Region

West Asia Region

Latin America and the Caribbean Region

Europe and Central Asia Region

Regional Trade Facilitation coordination

Port resilience against invisible threats

Maritime Supply Chain Resilience Tracker and KPIs

### Documents

#### Dnieper – Danube Corridor Pilot Dataset Alignment to International Standards and Data Models and Documents Implementation Prototypes for Use in Eastern Europe

Fulfilling the recommendations of the 2019 and 2020 UNECE "Odessa" seminars to support the development of digital multimodal transport corridors, with a view to increasing the harmonization and standardization of data exchange in international transport, trade and logistics to encourage electronic data exchange and thereby to reduce person-to-person contacts during the COVID-19 crisis and in the post-pandemic recovery, using relevant UN/CEFACT standards, a pilot project under the overall UN Development Account project "Transport and Trade Connectivity in the Age of Pandemic: United Nations solutions for contactless, seamless and collaborative transport and trade produced the following results:

- Analysis of data and documents transported via the Dnieper – Danube route (as a pilot implementation project);
- Development of electronic document equivalents for Inland Water Transport using the DAVID forms of the Danube Commission for inland waterways;
- Analysis of the feasibility of using API in this corridor;
- Test for interoperability.

The aim is to foster the harmonization of electronic data sharing using global (UN/CEFACT) standards for transport, trade and logistics, and to prepare standards for e-documents based on the UN/CEFACT semantic standards and reference data models. The focus will be on the development of electronic document equivalents for the documents mentioned above, using UN/CEFACT tools in the countries developing a digital multimodal transport corridor.

#### Phytosanitary Certificate Standard Package

The Phytosanitary Certificate Standard Package was developed as part of the United Nations response to the challenges of the COVID-19 pandemic under the United Nations multi-agency project "Transport and Trade Connectivity in the Age of Pandemic: UN solutions for contactless, seamless and collaborative transport and trade".

This electronic document equivalent Standard Package consists of the following elements:

- UML Diagram
- XSD Schema
- Guideline Structure
- HTML



## Modal Specific MMT-based Customizations: standards developed



✓ Maritime



✓ Road



✓ Inland Waterway



✓ Rail

information about the standards and tools:

<https://unttc.org/stream/electronic-trade-and-transport-documents-and-data>

# UN/CEFACT Streamlined Standards

## Transport and Logistics

### Multi-Modal Transport Reference Data Model (MMT-RDM)

- White Paper on RDM [English](#) [French](#) [Russian](#)
- RDM Guidelines [PDF](#)
- BRS [PDF](#)
- Executive Guide on RDM [English](#) [French](#) [Russian](#)
- Structure Report / Data Elements [PDF](#)
- XSD Schema [XML](#)
- UML Diagram [UML](#)
- HTML index

### International Forwarding and Transfer

### Multimodal Booking

### Multimodal Shipping Instruction

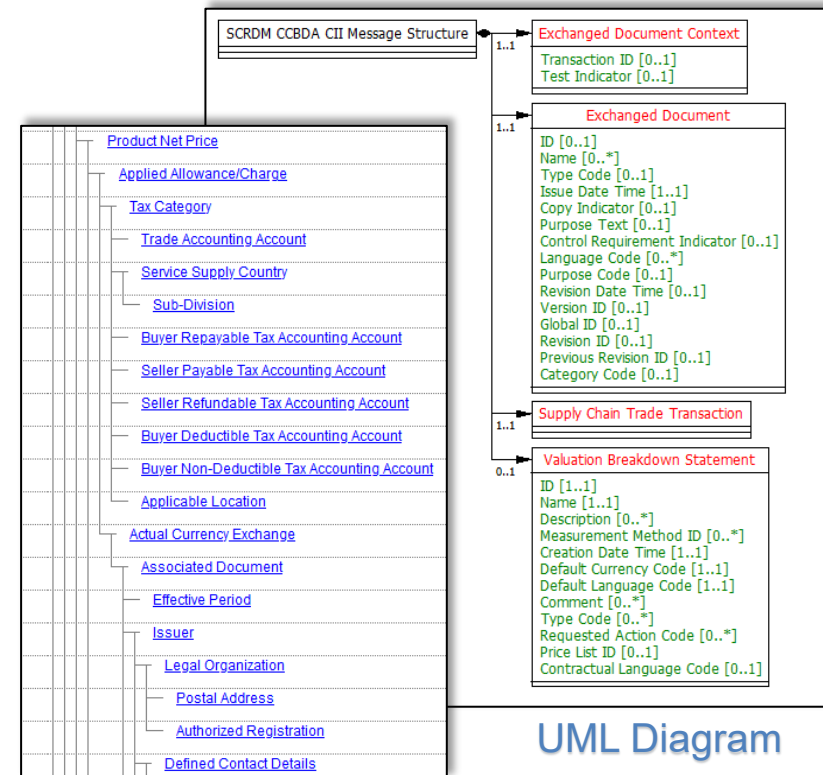
### Multimodal Waybill

### Multimodal Status Report / Request

### Road Consignment Note (eCMR)

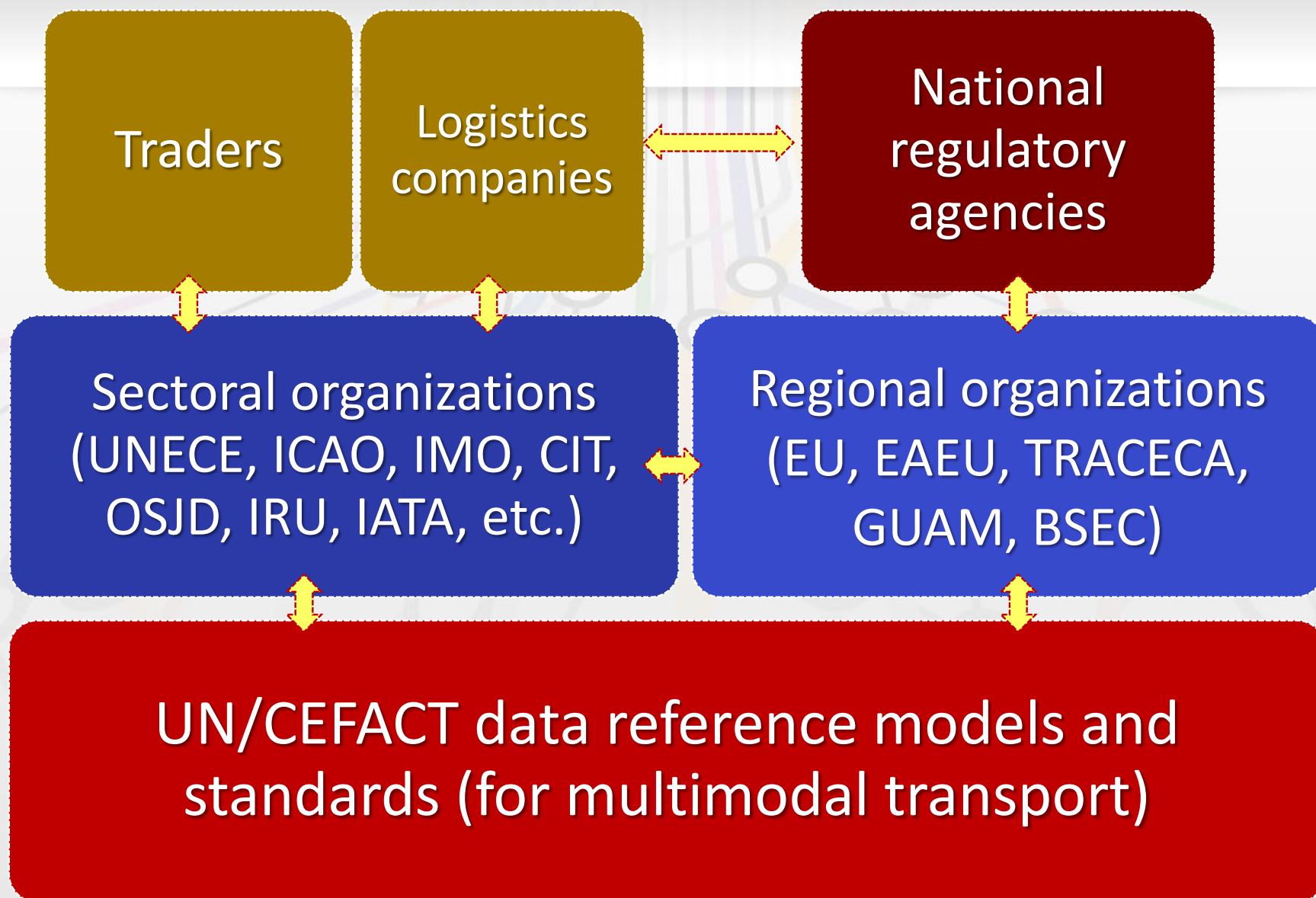
### Maritime Bill of Lading

### Inland Waterway Bill



UML Diagram

Message structure (on HTML index)





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- The diagram illustrates a multimodal transport network across Europe. A central horizontal blue and white checkered line represents the data exchange backbone, spanning from the British Isles to Eastern Europe. A red cloud icon with a downward arrow points to a red document icon with a checklist, which is connected to the central backbone by a vertical double-headed arrow. Six circular icons representing different transport modes are arranged around the backbone: a ship (top left), an airplane (top right), a train (bottom left), a truck (bottom right), a ship (bottom center-left), and a train (bottom center-right). Each transport mode icon is connected to the central backbone by a vertical double-headed arrow, indicating bidirectional data exchange. The background is a map of Europe with color-coded regions: yellow for the British Isles, purple for France and Central Europe, and orange for Eastern Europe and the Balkans.
- 1. Multimodal interoperability**
  - 2. Compatibility of data exchange on cargo transported by railway (EAEU – W.Europe)**
- The legal framework: negotiations – agreements**  
**Call to all stakeholders to join the project, collaborate and use the standards**

# Call to all stakeholders to join the project, collaborate and use the standards



**Pilot case – Dnieper-Danube (sea, railway, road, inland waterways)**

# Thanks!

## Further Information

Standards and reports available on [UNTTC.org](http://unttc.org) project and UN/CEFACT pages.

On the project web site ([unttc.org](http://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://uncefact.unece.org/display/uncefactpublic/Transport+Modal+Views+of+MMT>

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