

Standards for trade and multimodal transport data exchange

Mario Apostolov,
Regional Adviser, UNECE
mario.apostolov@un.org



Multi-agency UN Development Account project in response to the COVID-19 crisis. UNECE segment: interoperability of multimodal data exchange using UN/CEFACT standards and reference data models

Upgrading existing and developing new data exchange standards for key documents accompanying goods in various modes of transport

based on UN/CEFACT's multi-modal transport reference data model

Pilot implementation projects: e.g., in a digital multimodal corridor or in various documents (e.g. the FIATA multimodal Bill of Lading, air cargo transportation documents, etc.)

Key partners: UNECE, ICAO, IMO, as well as EC, FIATA, OSJD, CIT, IATA, IRU, GUAM, TRACECA, BSEC, etc.

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

UNDA project: 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 Waterway Transport using the DAVID forms of the Danube Commission for inland waterways;
- Analysis of the feasibility of using API in this corridor;
- Trade for interoperability.

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



The UN state and elec UN cor

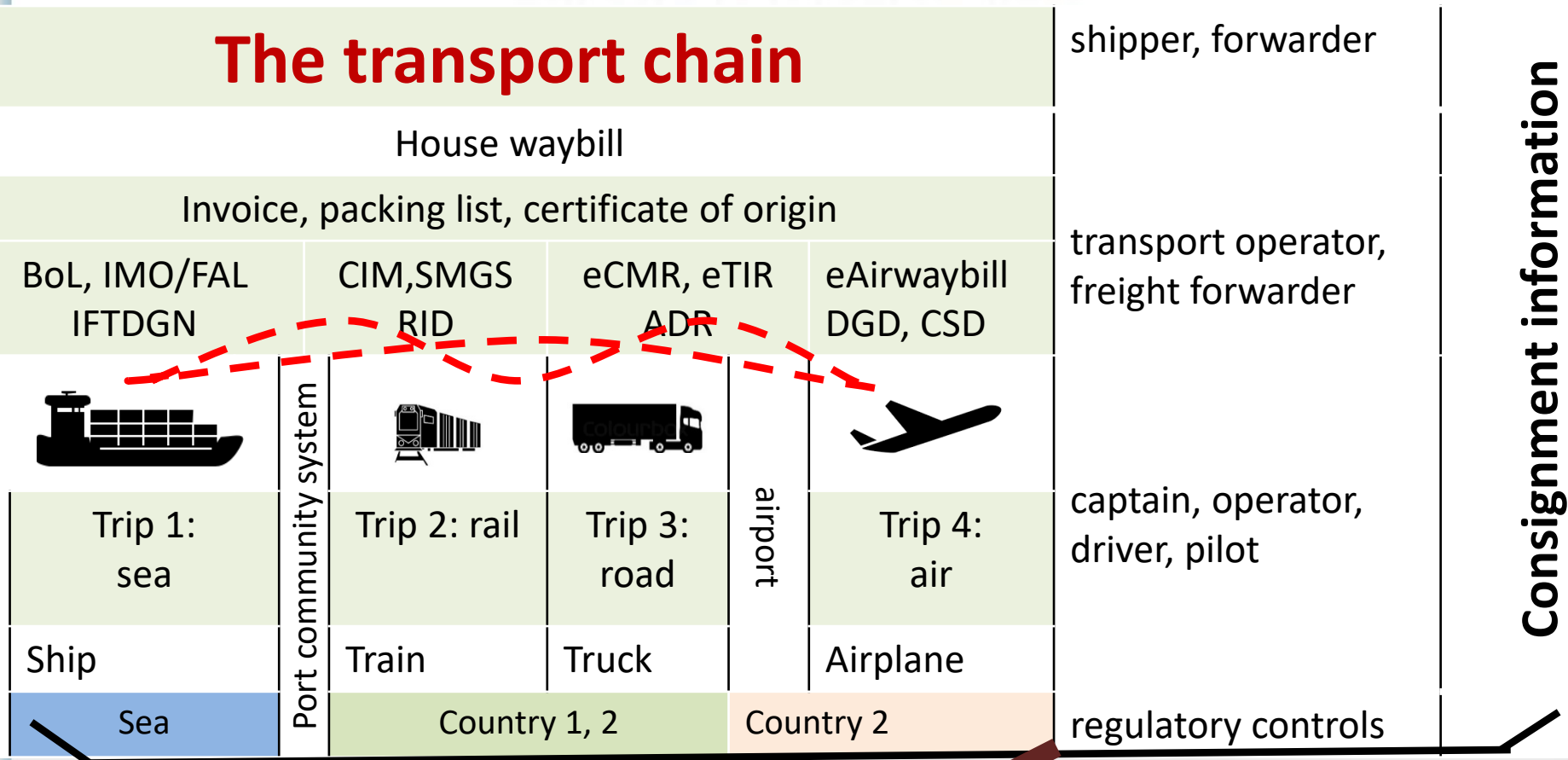
Modal Specific MMT-based Customizations: standards developed



information about the standards and tools: <https://unece.org/trade/uncefact/standards>
<https://unttc.org/stream/electronic-trade-and-transport-documents-and-data>

Seamless multimodal supply chain

The transport chain



B2G

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

Information for goods control

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/uncefact/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/uncefact/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 and

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 + 3 more FIATA documents

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

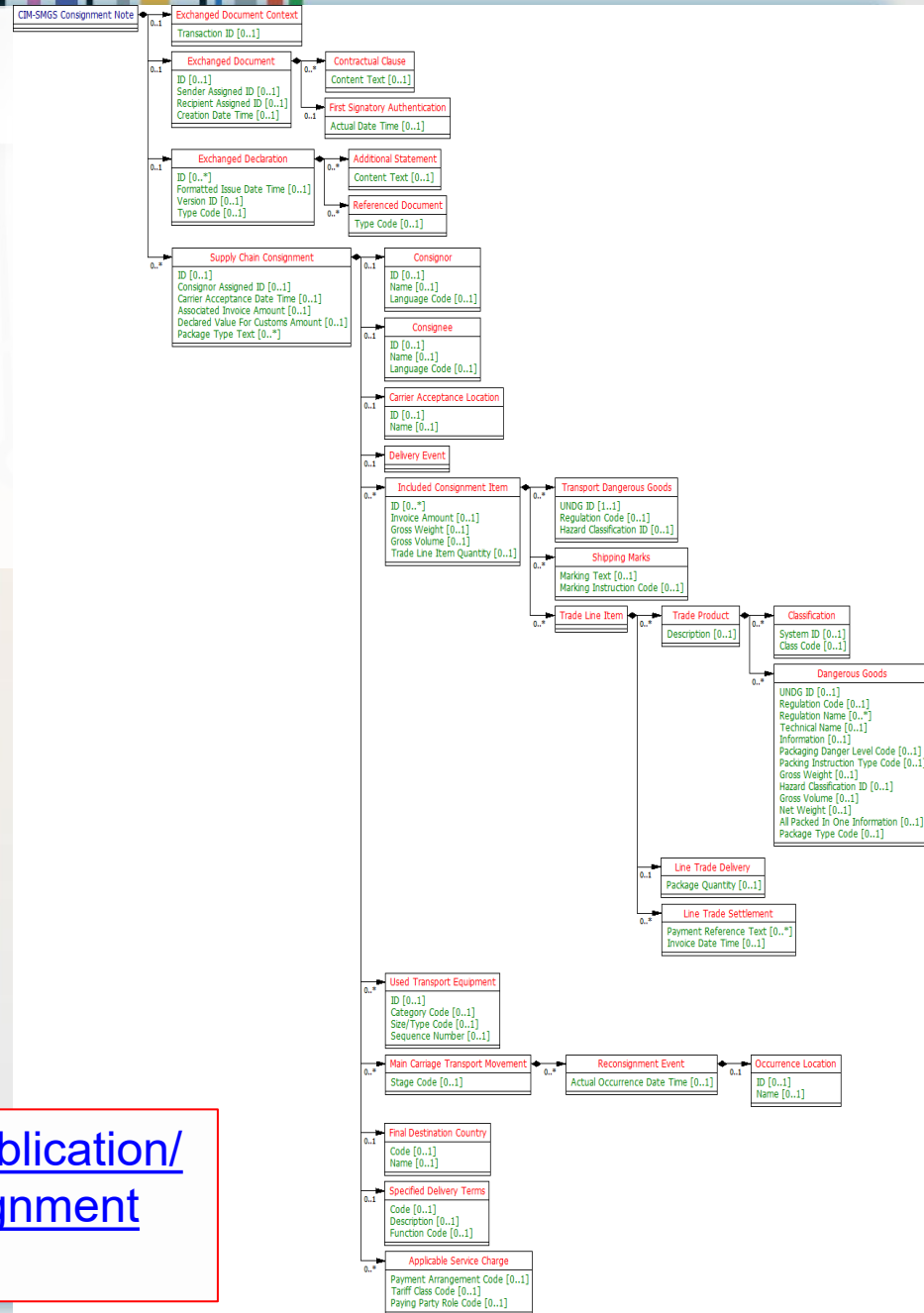
**For example:
the CIM-SMGS railway consignment note referenced to the UN/CEFACT Multi-Modal Transport Reference Data Model, according to the prepared XML schema for CIM-SMGS**

Subsets for the CIM-SMGS consignment note and the consignment note under UNECE's work on the Unified Railway Law (URL) developed

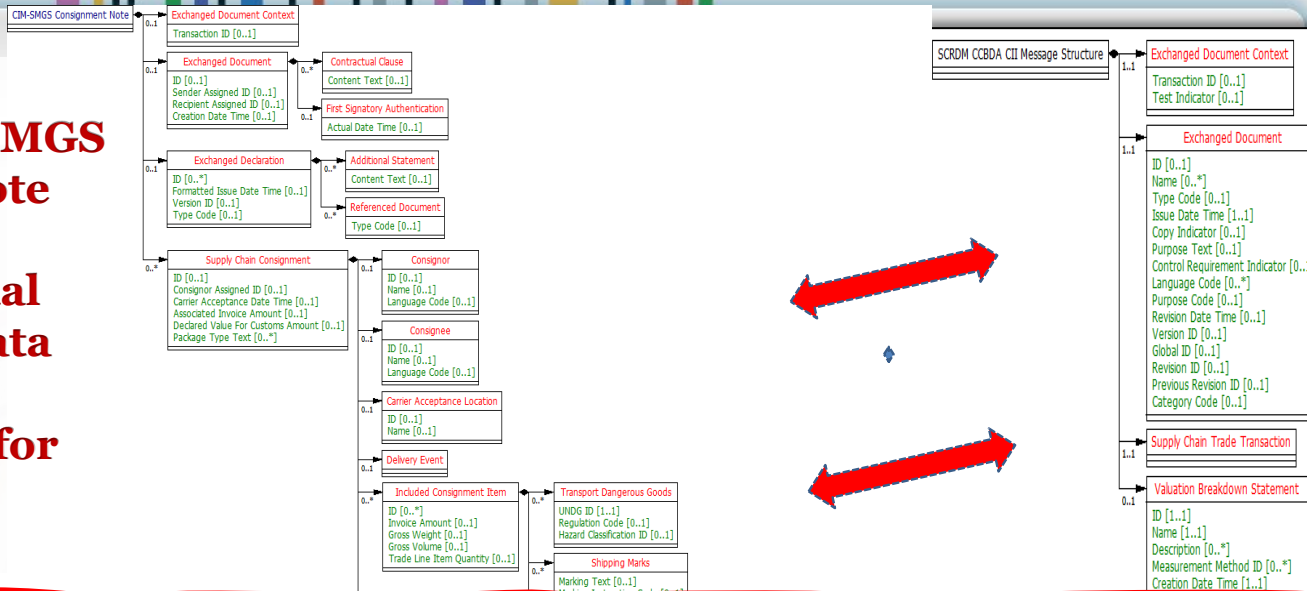
MS Excel and UML diagram, XSDs and html publication prepared

Standards for CIM/SMGS wagon list finalized

[https://service.unece.org/trade/uncefact/publication/Transport and Logistics/CIM-SMGS Consignment Note/HTML/001.htm](https://service.unece.org/trade/uncefact/publication/Transport%20and%20Logistics/CIM-SMGS%20Consignment%20Note/HTML/001.htm)

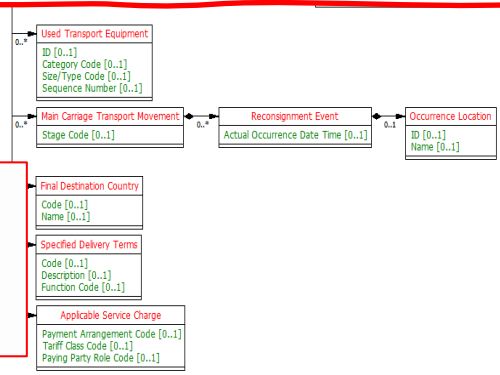


For example: the CIM-SMGS railway consignment note referenced to the UN/CEFACT Multi-Modal Transport Reference Data Model, according to the prepared XML schema for CIM-SMGS



Transport data and documents can and are exchanged between modes and with other sectors

Standards for CIM/SMGS wagon list finalized



[https://service.unece.org/trade/uncefact/publication/Transport and Logistics/CIM-SMGS Consignment Note/HTML/001.htm](https://service.unece.org/trade/uncefact/publication/Transport%20and%20Logistics/CIM-SMGS%20Consignment%20Note/HTML/001.htm)



Air: core mappings

AWB

DGD

CSD

SHIPPER'S DECLARATION FOR DANGEROUS GOODS

(Provide at least two copies to the airline.)

Shipper	Air Waybill No.
Consignee	Page of Pages
Transport Details	Shipper's Reference No. (optional)
Passenger and Cargo Aircraft	WARNING
Radioactive	Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the penalties, the circumstances, the consolidator, a forwarder, or an IATA cargo agent.
Nature and Quantity of Dangerous Goods	NON-RADIOACTIVE / RADIOACTIVE
Dangerous Goods Identification	Signature
Additional Handling Information	Place and Date
Signature	Signature

STAPLE DOCUMENTS ABOVE PERFORMANCE

Air Waybill

Issued by: _____

Consignment Name and Address: _____

Issuing Carrier's Agent Name and City: _____

Agent's IATA Code: _____

Account No.: _____

Reference Number: _____

No. of Pieces	Gross Weight	Net Weight	Volume	Chargeable Weight	Rate	Charge	Total	Nature and Quantity of Goods (incl. Dimensions or Values)
Prepaid				Weight Charge		Collect		Other Charges
Total other Charges Due Agent				Total other Charges Due Carrier		Total prepaid		Total collect
Currency Conversion Rates				No. charges in Decl. Category		Excluded on		Signature of Issuing Carrier or its Agent
For Carrier's Use only at Destination				Changes at Destination		Excluded on		Signature of Issuing Carrier or its Agent

Consignment Security Declaration

Regulated Entity Category (RA, KC or AD) and Identifier (of the regulated party issuing the security status): _____

Unique Consignment Identifier (if AWB format is non-relevant): _____

Contents of Consignment

Consolidation

Origin: _____ Destination: _____ Transfer/Transit points (if known): _____

Security Status: _____

Reasons for issuing the Security Status

Received from (codes)	Screening Method (codes)	Grounds for Exemption (codes)

Country Code: _____ Security Status Issued on: _____

Name of Person or Employee ID: _____ Date (ddmmyy): _____ Time (HH) : _____

Regulated Entity Category (RA, KC or AD) and Identifier (of any regulated party who has accepted the security status given to a consignment by another regulated party): _____

Additional Security Information

Air Foundation Common Data Elements

Modal dangerous goods data



RID (OTIF)
1082 pages

Air DGD

EDIFACT
ITFDGN

United Nations Directories
for Electronic Data Interchange for
Administration, Commerce and Transport



UN/EDIFACT

Common dangerous goods data elements

SHIPPER'S DECLARATION FOR DANGEROUS GOODS
(Provide at least two copies to the carrier)

Shipper: _____

Consignee: _____

TRANSPORT DETAILS
This shipment is within the limitations prescribed for: (delete non-applicable)
PASSENGER AND CARGO AIRCRAFT CARGO AIRCRAFT ONLY

Warning: Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable penalties. This Declaration, in all circumstances, be complete, correct, and true. It must be signed by the shipper, consolidator, a forwarder, or an IATA cargo agent.

NATURE AND QUANTITY OF DANGEROUS GOODS

UN ID No.	Proper Shipping Name	Class or Division	Packing Group	Subsidiary Risk	Quantity and Type of Packing	Packing Inst.	Authorization

ADDITIONAL HANDLING INFORMATION:
Prior arrangements as required by IATA Dangerous Goods Regulations 1.3.3.1 have been made.
Prepared according to ICAO/IATA. 24hr. Emergency Contact No. _____

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked, labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national government regulations.

FOR RADIOACTIVE MATERIAL SHIPMENT ACCEPTABLE FOR PASSENGER AIRCRAFT: THE SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN OR INCIDENT TO RESEARCH, MEDICAL DIAGNOSIS, OR TREATMENT.

MULTIMODAL DANGEROUS GOODS FORM (right edge black hatchings)

1. Shipper/Consignee/Sender: _____

2. Transport document number: _____

3. Page 1 of ... Pages: _____

4. Shipper's reference: _____

5. Freight forwarder's reference: _____

6. Consignee: _____

7. Carrier (to be completed by the carrier): _____

8. This shipment is within the limitations prescribed for: (delete non-applicable)
PASSENGER AND CARGO AIRCRAFT CARGO AIRCRAFT ONLY

9. Additional handling information: _____

SHIPPER'S DECLARATION
I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and fully placarded and are in all respects in proper condition for transport according to the applicable international and national government regulations.

13. Shipping marks: _____

14. Number and kind of packages, description of goods, Gross mass (kg), Net mass, Cube (m³)

15. FOR DANGEROUS GOODS: you must specify: UN No., proper shipping name, hazard class, packing group (where assigned) and any other element information required under applicable national and international regulations.

16. Container identification No./vehicle reg. attration No. _____

17. Seal number (s) _____

18. Container/vehicle size & type _____

19. Tare (kg) _____

20. Total gross mass (including tare) (kg) _____

CONTAINER/VEHICLE PACKING CERTIFICATE
I hereby declare that the goods described above have been packaged/loaded in accordance with the applicable provisions.
MUST BE COMPLETED AND SIGNED FOR ALL CONTAINER/VEHICLE LOADS BY PERSON RESPONSIBLE FOR PACKING/LOADING

21. RECEIVING ORGANISATION RECEIPT
Received the above number of packages/containers/trailers in apparent good order and condition unless stated herein: RECEIVING ORGANISATION REMARKS: _____

22. Name of company _____

23. Name of company (OF SHIPPER PREPARING THIS NOTE) _____

Name/Status of declarant: _____

Vehicle reg. no.: _____

Place and date: _____

Signature of declarant: _____

Signature of driver: _____

Signature of declarant: _____

Message Type : ITFDGN
Version : D
Release : 14A
Contr. Agency: UN
Revision : 8
Date : 2014-04-30

SOURCE: TBG3 Transport

CONTENTS
Dangerous goods notification message

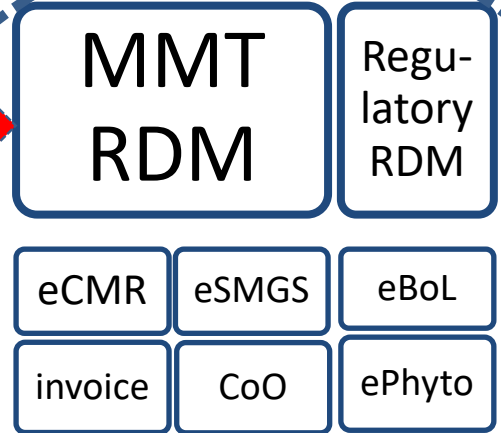
- 0. INTRODUCTION
- 1. SCOPE
 - 1.1 Functional definition
 - 1.2 Field of application
 - 1.3 Principles
- 2. REFERENCES

Copyright UNECE

Mapping multimodal transport ↔ regulatory

Level	Business Name	MMT	eCMR Road Consignment No.	Maritime Bol.	CIM-SMGS Rail Consignment No.	Inland Waterway Bol.	FIATA Bol.	Ai Way
5	Carrier Acceptance Location	X	X	X	X	X	X	X
0	Consignee Receipt Location	X	X	X		X	X	X
4	Loading Baseport Location	X					X	X
7	Unloading Baseport Location	X					X	X
0	Final Destination Location	X		X	X			X
4	Transport Contract Document	X		X		X		X
7	Handling Instructions	X	X		X			X
5	Loading Instructions	X	X					X
7	Included Consignment Item	X	X	X	X	X	X	X
8	ID				X			X
9	Sequence Number	X	X	X	X			X
0	Goods Type Code	X	X	X	X	X	X	X
1	Declared Value For Carriage Amount	X						X
2	Insurance Value Amount	X						X
3	Invoice Amount	X	X		X			X
4	Gross Weight	X	X	X	X	X		X
5	Gross Volume	X	X	X	X	X	X	X
6	Information	X		X		X		X
7	Tariff Quantity	X	X					X
8	Trade Line Item Quantity				X			X
9	Global ID	X	X					X
0	Cargo Nature Identification	X	X				X	X
3	Transport Dangerous Goods	X	X	X	X	X	X	X
4	UNDG ID	X	X	X	X	X	X	X
5	Regulation Code	X	X	X	X	X	X	X
6	Regulation Name				X			X
7	Technical Name	X	X					X
8	Information	X		X	X	X		X
9	EMS ID	X		X	X	X		X
0	TREM ID	X			X			X

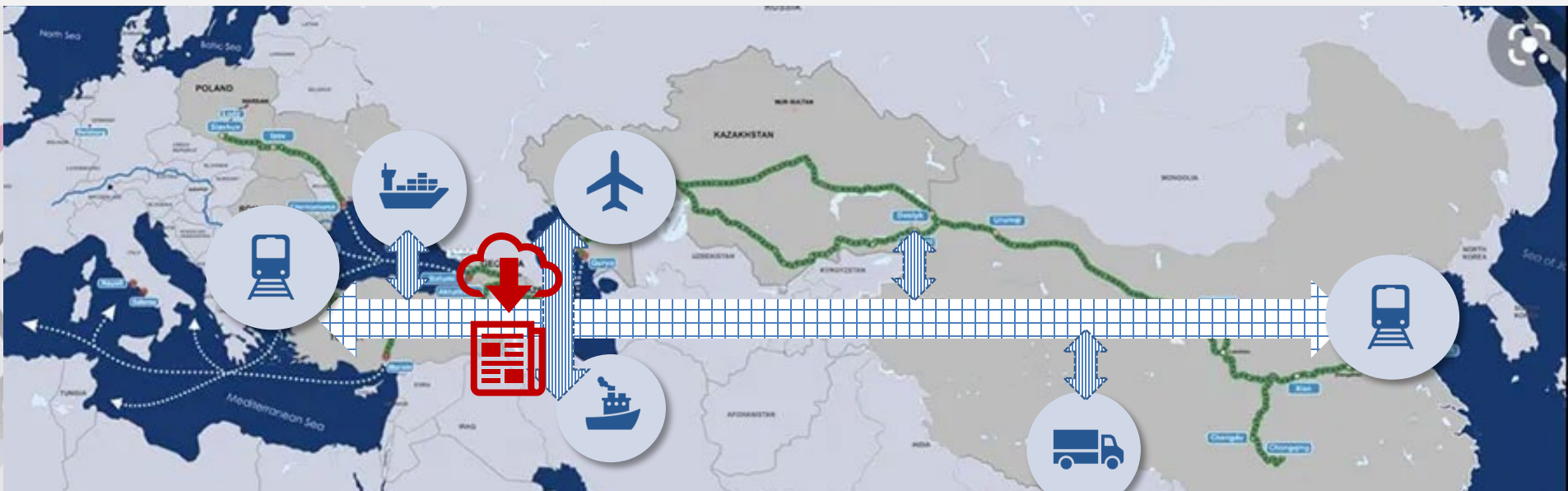
UN/CEFACT
Buy-Ship-Pay
Reference Data Model



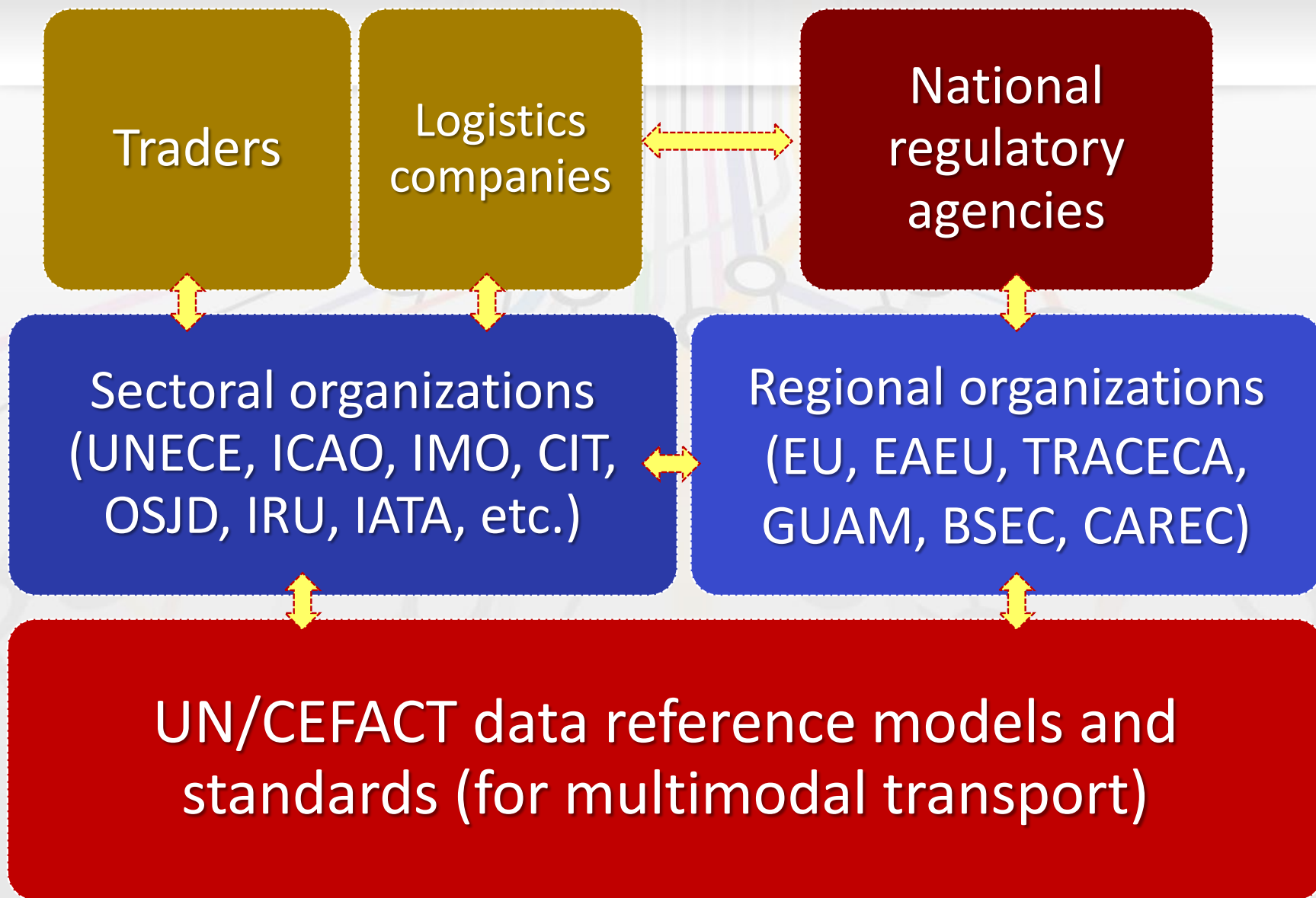
Regulatory
(Customs)
systems;
EUCDM;
ASYCUDA;
etc.

Multimodal interconnectivity: goals and next steps in the Europe-Asia corridors

1. Multimodal interoperability
2. Compatibility of cargo data exchange E. Asia–W. Europe



- Legal framework: negotiations – agreements
- Technological neutrality – suitable for EDI, XML, JSON API – to build blockchains
- Call to all stakeholders to collaborate/use standards
- Move from documents to data exchange



Thank you!

Mario Apostolov
Regional Adviser
Economic Cooperation and Trade Division
UN Economic Commission for Europe
tel. +41 22 9171134
e-mail: mario.apostolov@un.org