UNECE
United Nations Economic for Europe

Interoperability for data and document exchange in multimodal transport aligned to UN/CEFACT standards and Multimodal Data Model (MMT RDM): benefits for landlocked countries in Asia & Europe

UNDA project Transport and Trade Connectivity in the Age of Pandemic (unttc.org)

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)

Mario Apostolov, Regional Advisor
Economic Cooperation and Trade Division, UNECE

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**

Ready standards or standards under preparation	Key documents accompanying goods (B2B)
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:	**3. Standardized data exchanges to support cross-modal cargo transfers**
• 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	• **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**
2. Standardized data exchanges published in October 2020, making information already in the MMT-RDM more easily discoverable	**4. Air cargo and dangerous goods documents:**
• 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	• **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**

Air: core mappings

DGD

SHIPPER'S DECLARATION FOR DANGEROUS GOODS

(Provide at least two copies to the airline.)

Shipper

Consignee

Two completed and signed copies of this Declaration must be handed to the operator.

TRANSPORT DETAILS

This shipment is within the limitations prescribed for: (delete non-applicable)

Airport of Departure:

PASSENGER AND CARGO AIRCRAFT

CARGO AIRCRAFT ONLY

Airport of Destination:

Air Waybill No.

Page of Pages

Shipper's Reference No. (optional)

WARNING

Failure to comply in all respects with the applicable Dange... Goods Regulations may be in breach of th... penalties. T... circumstances, a fo... der, or an IATA cargo consolidator, a fo... der, or an IATA cargo agent.

Shipment Type: (delete non-applicable)

NON-RADIOACTIVE

RADIOACTIVE

NATURE AND QUANTITY OF DANGEROUS GOODS

Dangerous Goods Identification

UN or 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.

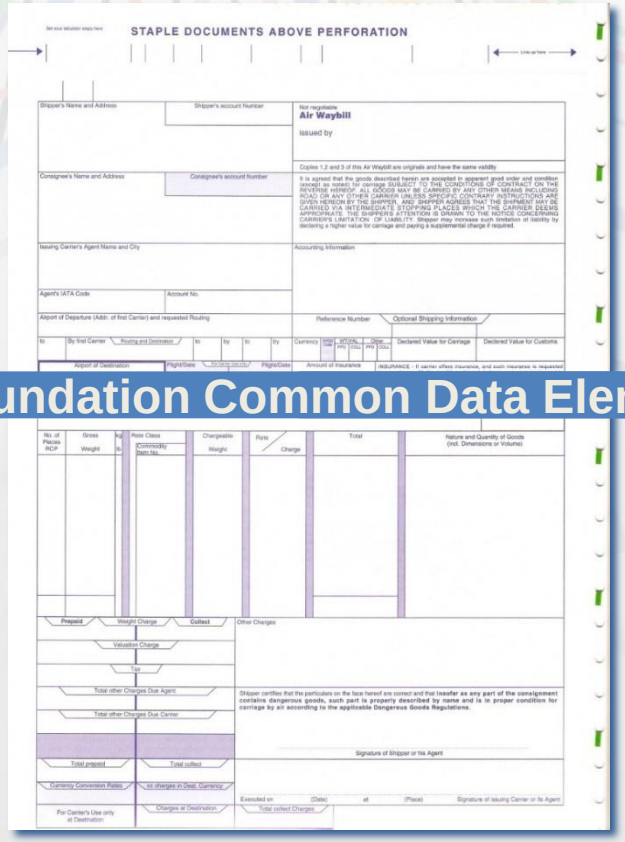
Name/Title of Signatory

Place and Date

Signature (see WARNING above)

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.

AWB



STAPLE DOCUMENTS ABOVE PERFORATION

Shipper's Name and Address

Shipper's account Number

Not negotiable

Air Waybill

issued by

Copies 1,2 and 3 of this Air Waybill are originals and have the same validity

Consignee's Name and Address

Consignee's account Number

It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value for carriage and paying a supplemental charge if required.

Issuing Carrier's Agent Name and City

Accounting Information

Agent's IATA Code

Account No.

Airport of Departure (Addr. of first Carrier) and requested Routing

Reference Number

Optional Shipping Information

to / By first Carrier / Routing and Destination / to / by / to / by / Currency / CHGS Code / WT/VAL PPD / WT/VAL COLL / Other PPD / Other COLL / Declared Value for Carriage / Declared Value for Customs

Airport of Destination / Flight/Date / For Carrier Use only / Flight/Date / Amount of Insurance / INSURANCE - If carrier offers insurance, and such insurance is requested

No. of Pieces RCP	Gross Weight	kg lb	Rate Class / Commodity Item No.	Chargeable Weight	Rate / Charge	Total	Nature and Quantity of Goods (incl. Dimensions or Volume)

Prepaid / Weight Charge / Collect

Other Charges

Valuation Charge

Tax

Total other Charges Due Agent

Total other Charges Due Carrier

Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations.

Signature of Shipper or his Agent

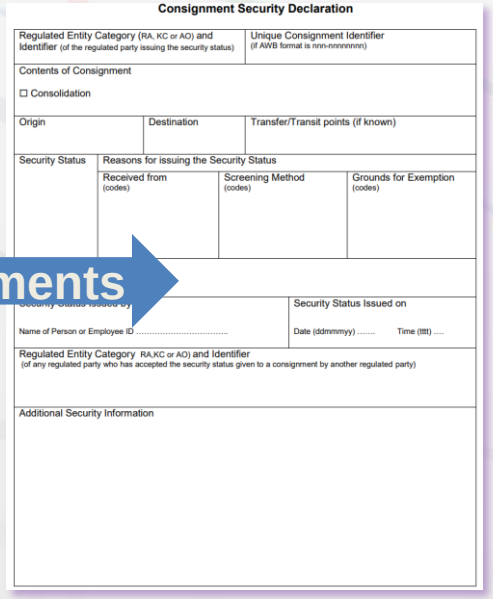
Total prepaid / Total collect

Currency Conversion Rates / cc charges in Dest. Currency

Executed on (Date) at (Place) Signature of issuing Carrier or its Agent

For Carrier's Use only at Destination / Charges at Destination / Total collect Charges

CSD



Consignment Security Declaration

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

Unique Consignment Identifier (if AWB format is nnn-nnnnnnnn)

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)

Security Status Issued on

Name of Person or Employee ID .....

Date (ddmmmyy) .....

Time (tttt) ....

Regulated Entity Category RA,KC or AO) 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

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Railway documents and data

Basic data mappings

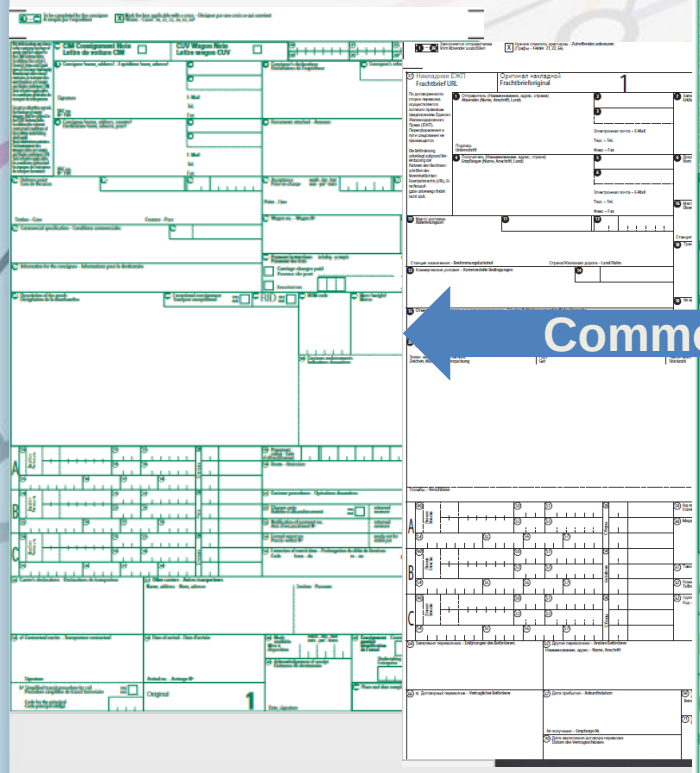
CIM

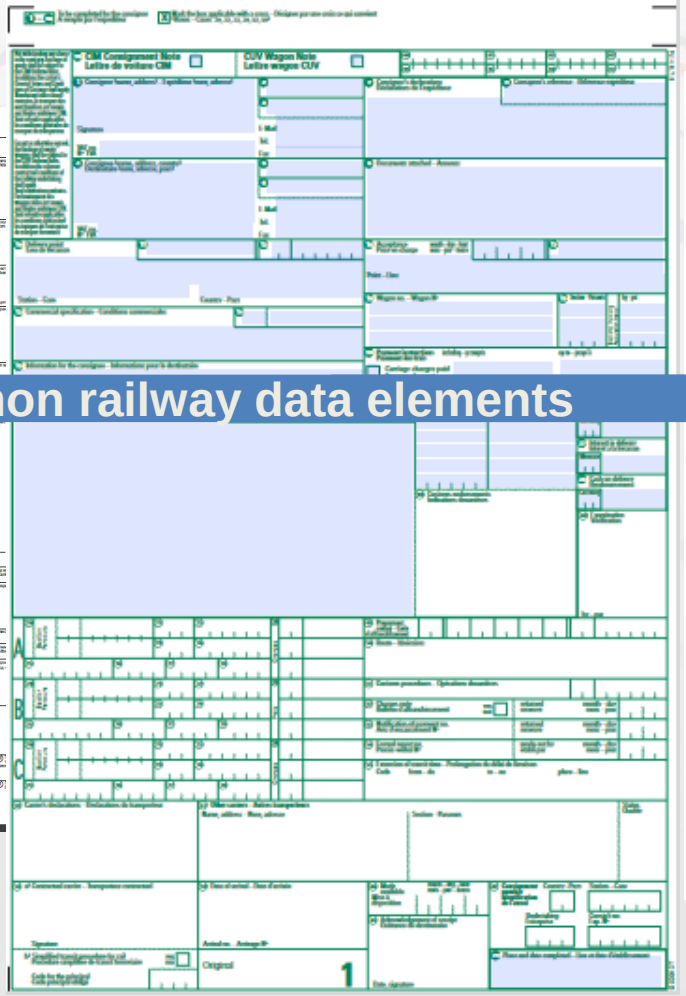
URL

CIM/SMGS

SMGS

EDIFACT





Common railway data elements

IFTMIN

Example message

No.	Tag	Example
01	UNA	UNA:+.? ' UNA:+,? '
02	UNB	UNB+UNOC:3+NO0987654321:30+708008890++CONSIGNOR++1++1'
03	UNH	UNH+1234+IFTMIN:D:04A:UN:BIG14'
04	BGM	BGM+610+70123451234567898+1'
05	CTA	CTA+BK+:EDI dep./ Eva HW'
06	COM	COM+eva.hw@bring.com:EM'
07	DTM	DTM+137:20100810:102'
08	DTM	DTM+234:20100810:102'
09	MOA	MOA+22:4530:NOK'
10	FTX	FTX+PRD+++1020:X'
11	FTX	FTX+SSR+++1076:ME01NO'
12	FTX	FTX+TRR+++DAVA'
13	FTX	FTX+DEL+++Call 911 before delive
14	FTX	FTX+AAR+++0022'
15	CNT	CNT+11:9:PCE'
16	GDS	GDS+11'
	SG2	
17	TOD	TOD+5+CC'
	SG2	
18	TOD	TOD+6++EXW:INCOTERMS2010'
19	LOC	LOC+1+3000::139:Drammen+NO'
	SG3	
20	RFF	RFF+CMR:70701020000000034'
	SG3	
21	RFF	RFF+IV:867'
22	DTM	DTM+171:20100923:102'
	SG8	
23	TDT	TDT+20++3++BCS::87'
24	TSR	TSR+ALY'
	SG9	
25	LOC	LOC+202+1000::87:Bring Logistics
	SG11	
26	NAD	NAD+CZ+10009999999::87++Bring IK etg.+OSLO++0001+NO'
27	LOC	LOC+202+20000::87'
	SG12	

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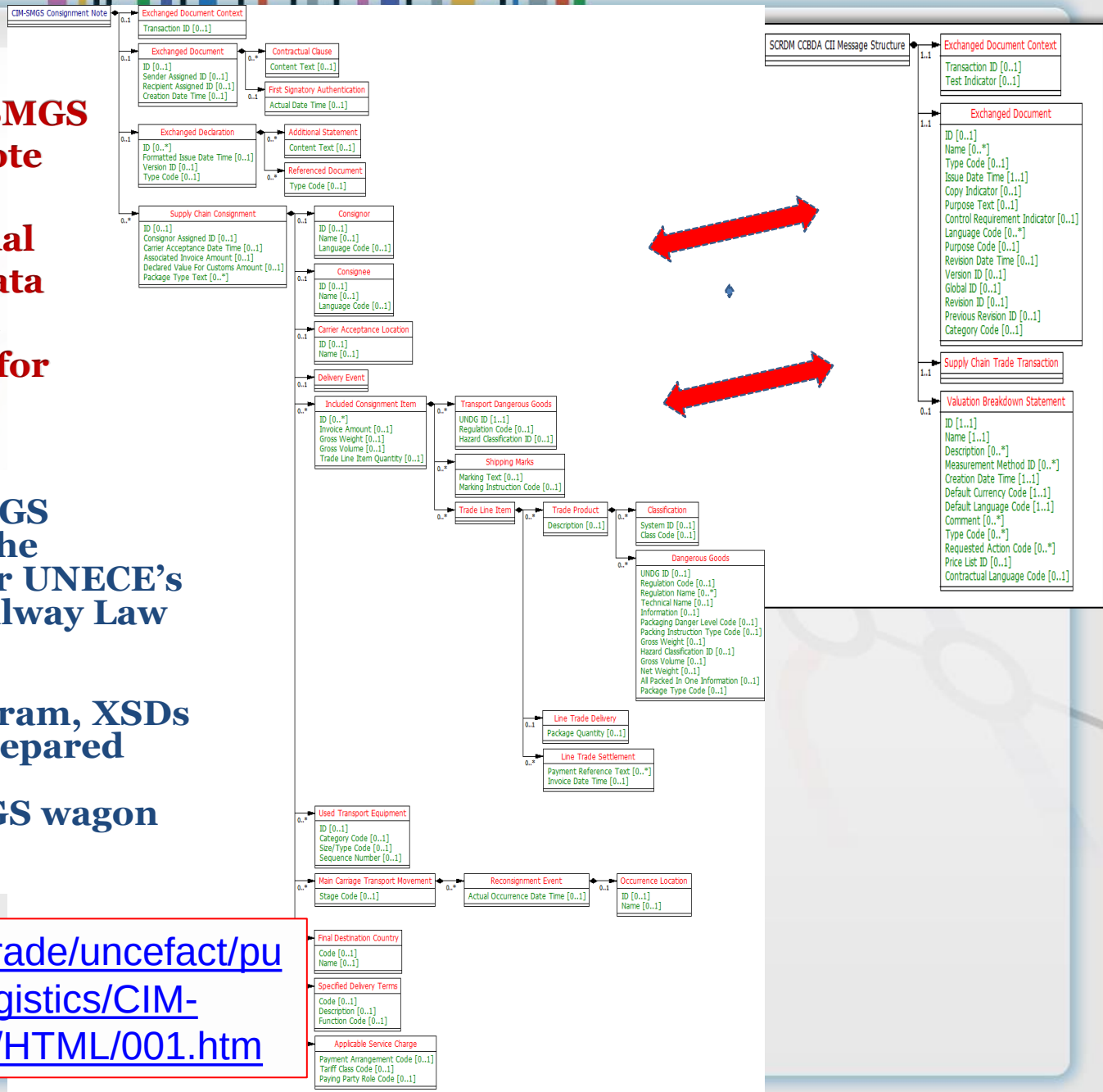
For example: the CIM-SMGS railway consignment note referenced to the UN/CEFACT Multi-Modal Transport Reference Data Model, according to the prepared XML schema for CIM-SMGS

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

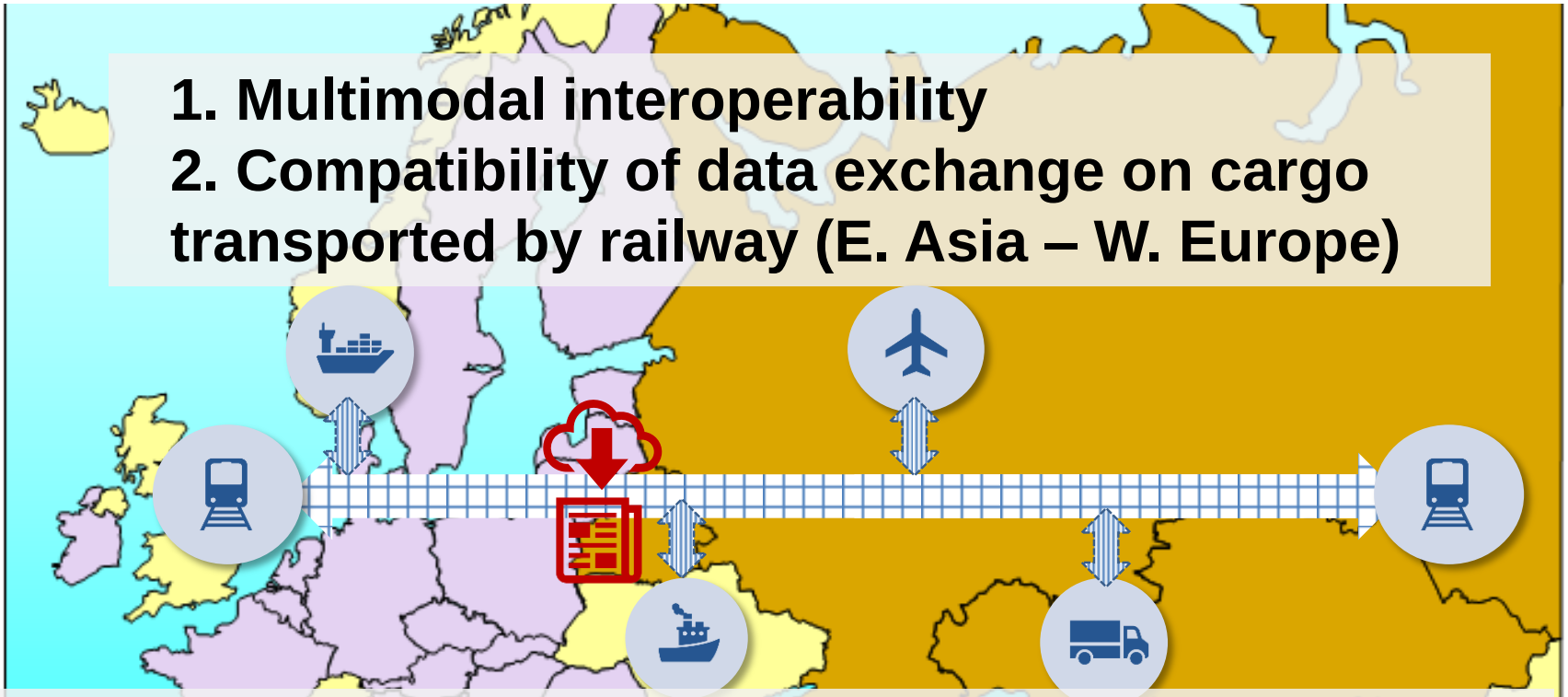
MS Excel and UML diagram, XSDs and html publication prepared

Standards for CIM/SMGS wagon list finalized



https://service.unece.org/trade/uncefact/publication/Transport and Logistics/CIM-SMGS Consignment Note/HTML/001.htm

Railway & multimodal interconnectivity: objectives and next steps



- 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

Digitalization of air cargo transport information as part of interoperability for multimodal data UNDA project: unttc.org web site

UNTTC 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 multiagency project "Transport and Trade Connectivity in the Age of Pandemics: 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
- BRS
- Executive Guide on RDM English French Russian
- Structure Report / Data Elements
- XSD Schema
- UML Diagram
- HTML index

International Forwarding and Transfer

Multimodal Booking

Multimodal Shipping Instruction

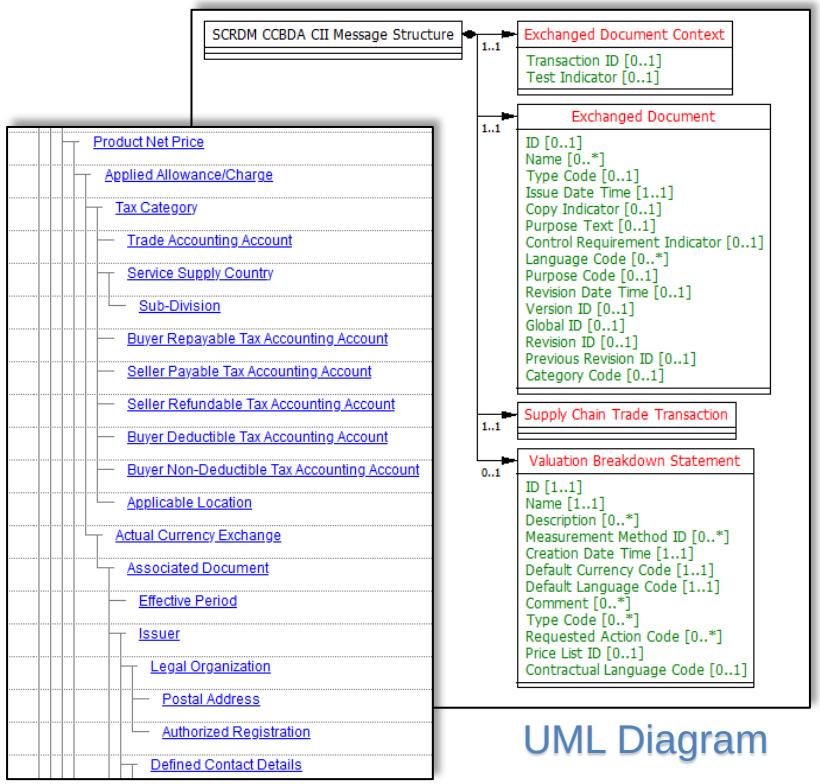
Multimodal Waybill

Multimodal Status Report / Request

Road Consignment Note (eCMR)

Maritime Bill of Lading

Inland Waterway Bill



UML Diagram

Message structure (on HTML index)

[UN/CEFACT Streamlined Standards page]

Matrix: data mapping for CIM/SMGS, eCMR, eTIR, eFIATA BL, AWB…

AutoSave Off

File Home Insert Page Layout Formulas Data Review View Developer Help

Q377

	Level	Business Name	MMT	eCMR Road Consignment No	Maritime BoL	CIM-SMGS Rail Consignment Not	Inland Waterway BoL	FIATA BoL	Air Waybill
175	2	Carrier Acceptance Location	X	X	X	X	X	X	X
180	2	Consignee Receipt Location	X	X	X		X	X	X
184	2	Loading Baseport Location	X					X	
187	2	Unloading Baseport Location	X					X	
190	2	Final Destination Location	X		X	X			X
194	2	Transport Contract Document	X		X		X		X
197	2	Handling Instructions	X	X		X			X
205	2	Loading Instructions	X	X					X
207	2	Included Consignment Item	X	X	X	X	X	X	X
208	3	ID				X			X
209	3	Sequence Number	X	X	X	X			X
210	3	Goods Type Code	X	X	X	X	X	X	X
211	3	Declared Value For Carriage Amount	X					X	X
212	3	Insurance Value Amount	X					X	X
213	3	Invoice Amount	X	X		X			X
214	3	Gross Weight	X	X	X	X	X	X	X
215	3	Gross Volume	X	X	X		X	X	X
216	3	Information	X		X		X		X
217	3	Tariff Quantity	X	X					X
218	3	Trade Line Item Quantity				X			X
219	3	Global ID	X	X					X
220	3	Cargo Nature Identification	X	X				X	X
223	3	Transport Dangerous Goods	X	X	X	X	X	X	X
224	4	UNDG ID	X	X	X	X	X	X	X
225	4	Regulation Code	X	X	X	X	X		X
226	4	Regulation Name				X			X
227	4	Technical Name	X	X		X			X
228	4	Information	X		X	X	X		X
229	4	EMS ID	X		X	X	X		
230	4	TREM ID	X			X			

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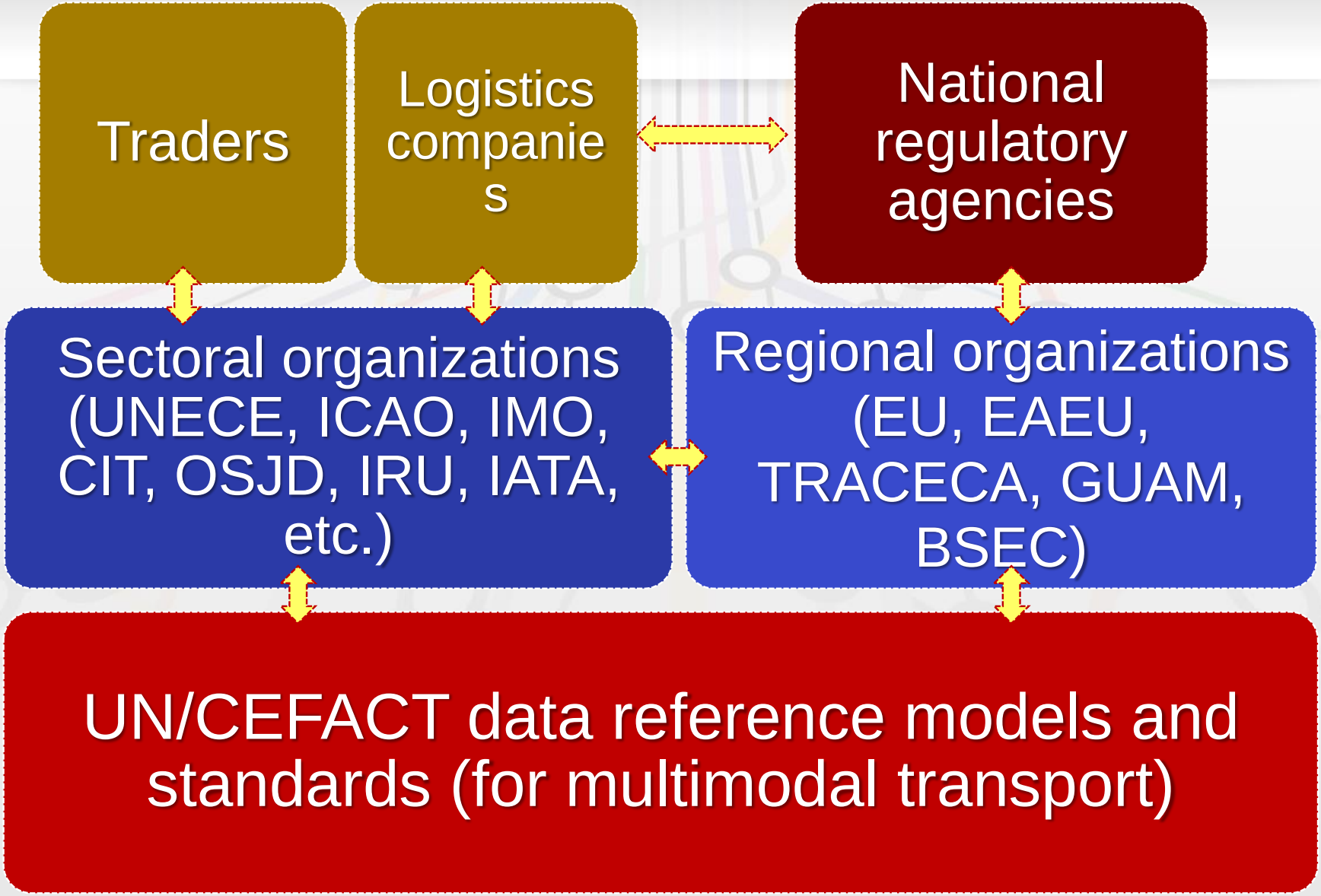
Similar mapping matrix and a data set can and will be developed for Dangerous Goods Declarations in the five transport modes


Traders
Logistics companies
National regulatory agencies
Sectoral organizations (UNECE, ICAO, IMO, CIT, OSJD, IRU, IATA, etc.)
Regional organizations (EU, EAEU, TRACECA, GUAM, BSEC)
UN/CEFACT data reference models and standards (for multimodal transport)

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://uncefact.unece.org/display/uncefactpublic/Transport+Modal+Views+of+MMT

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