

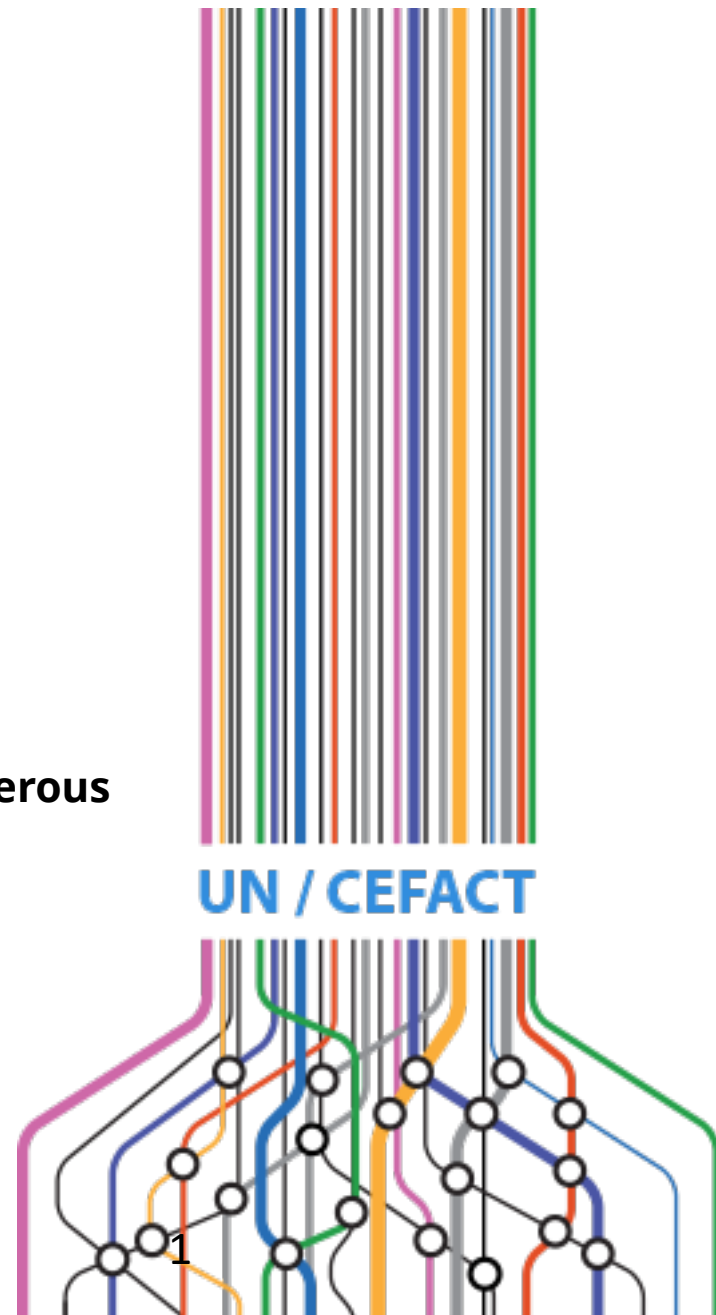
# **UN/CEFACT Standards for International Supply Chain Semantic Harmonisation & Trade Facilitation**

**Sue Probert**  
**UN/CEFACT Chair**  
**[suesiprobert@live.com](mailto:suesiprobert@live.com)**

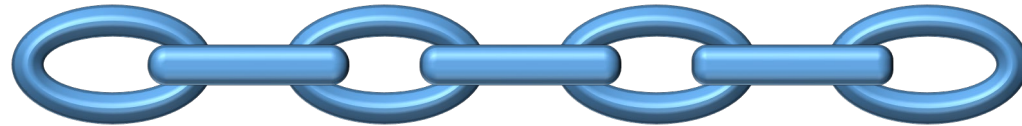
**Digitalization of road and air consignment notes, dangerous  
goods declarations**

**UZBEKISTAN NATIONAL CAPACITY BUILDING SEMINAR**

**TASHKENT 29<sup>TH</sup> MARCH 2024**

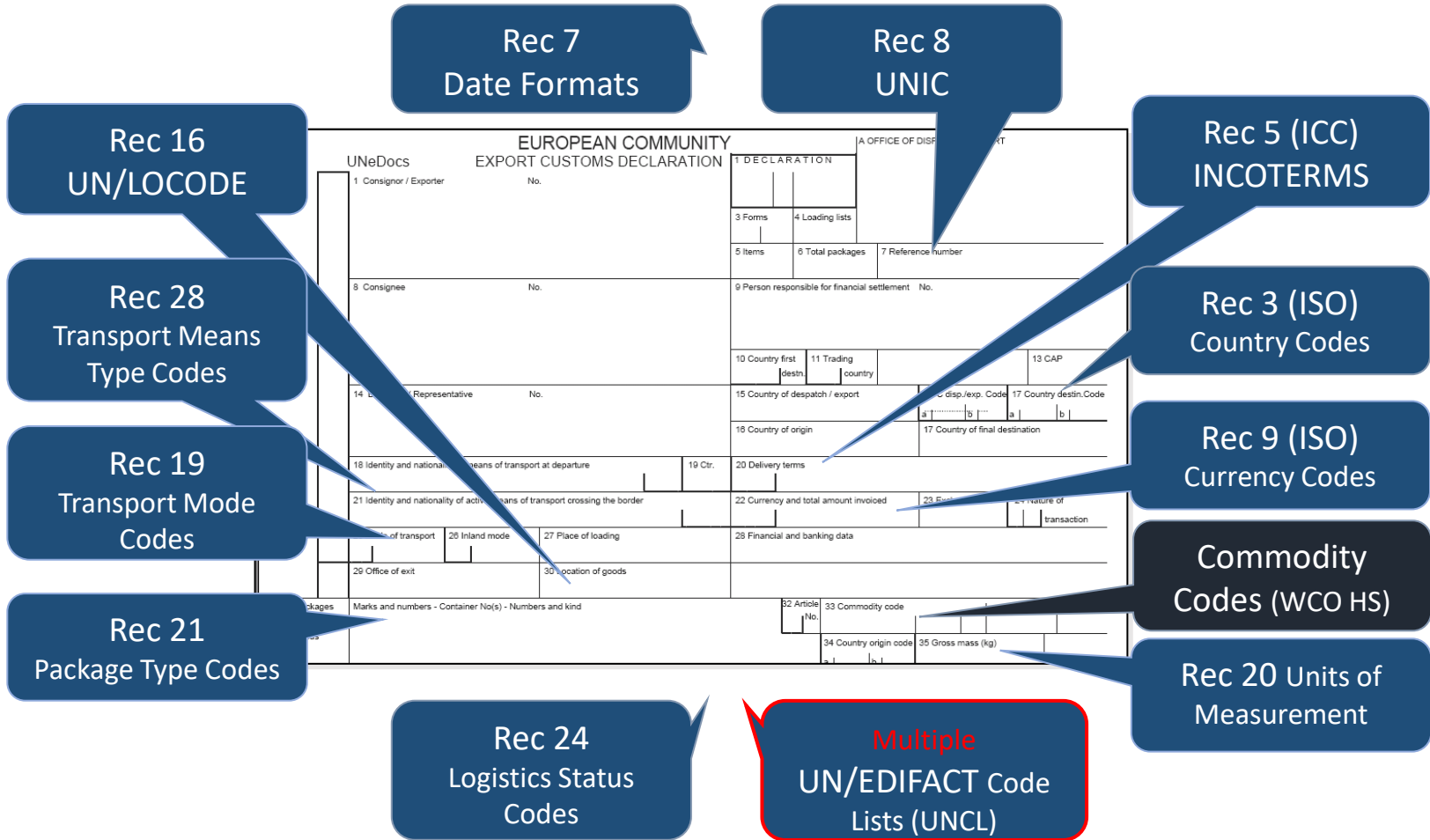


# Global Supply Chain Holistic Multimodal links



- Most dematerialization projects are only looking at one sectoral view
  - The international supply chain is very complex
  - Almost all sectoral views are just one part of a global supply chain
- A holistic view and approach are needed
  - Information will not be related purely to goods or purely to transport or purely to regulatory
  - There are clear links between the information in each part of the global supply chain
- UN/CEFACT deliverables all take this holistic trade facilitation approach
  - Cross Industry
  - MultiModal
  - Cross-border Management

# UN/CEFACT – International Code Lists



# UNTTC

## Transport & Trade Connectivity in the Age of Pandemics

- In 2020 UN New York launched **COVID-19 initiative to encourage exchange of digitised electronic data** rather than paper documents in transport contract related data exchanges
- **UNECE and UN/CEFACT joint contribution:**
  - Cross-modal project to develop modal guides on reuse of the UN/CEFACT MMT Reference Data Model to support digitised data exchanges between transport modes
  - **7 Heads of Delegation** supported the Project  
(Germany, Spain, Greece, Russia, Italy, US and Ukraine)

# UNDP UNTTC (Transport & Trade Connectivity in the age of pandemics)

UNECE/CEFACT contribution: Modal Specific but Aligned MMT-based Customisations



✓ Maritime



✓ Air



✓ Road



✓ Rail



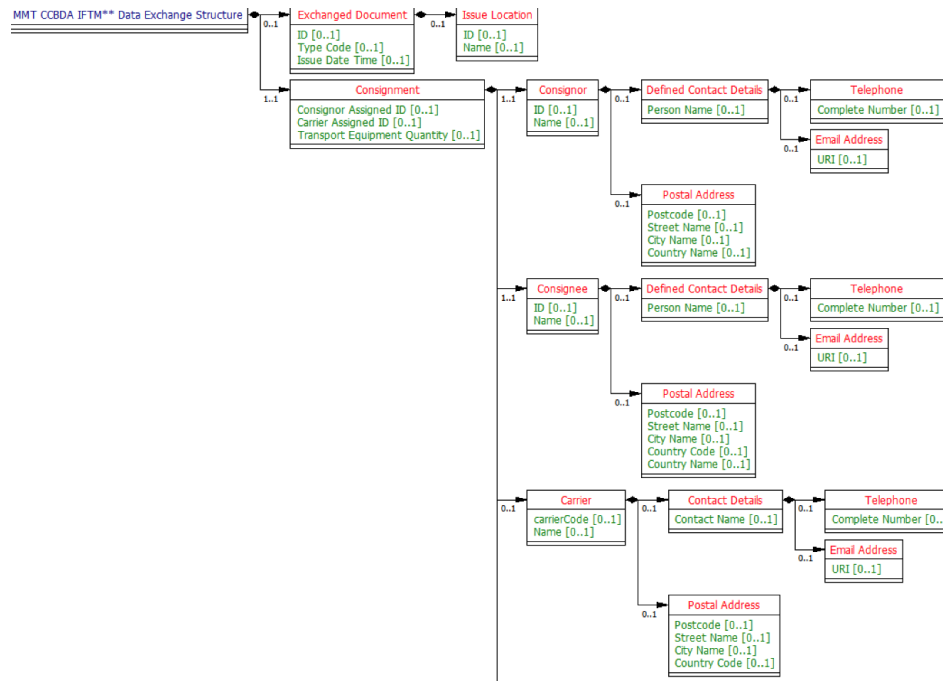
✓ Inland Waterway



- Analysis of the CIM/SMGS ECN data structure in preparation for the mapping to IFTM subset
- Identified potential issue for mapping between the railway ECN and IFTM due to different structural representation
- Open discussion to describe and understand the issue
- Proposals for the next phase to reach a mapping exercise
  - Rearrange the structure of the railway ECN in the manner of MMT for seamless mappings and multimodal interoperability
  - Map only the possible data elements for the purpose of achieving multimodality

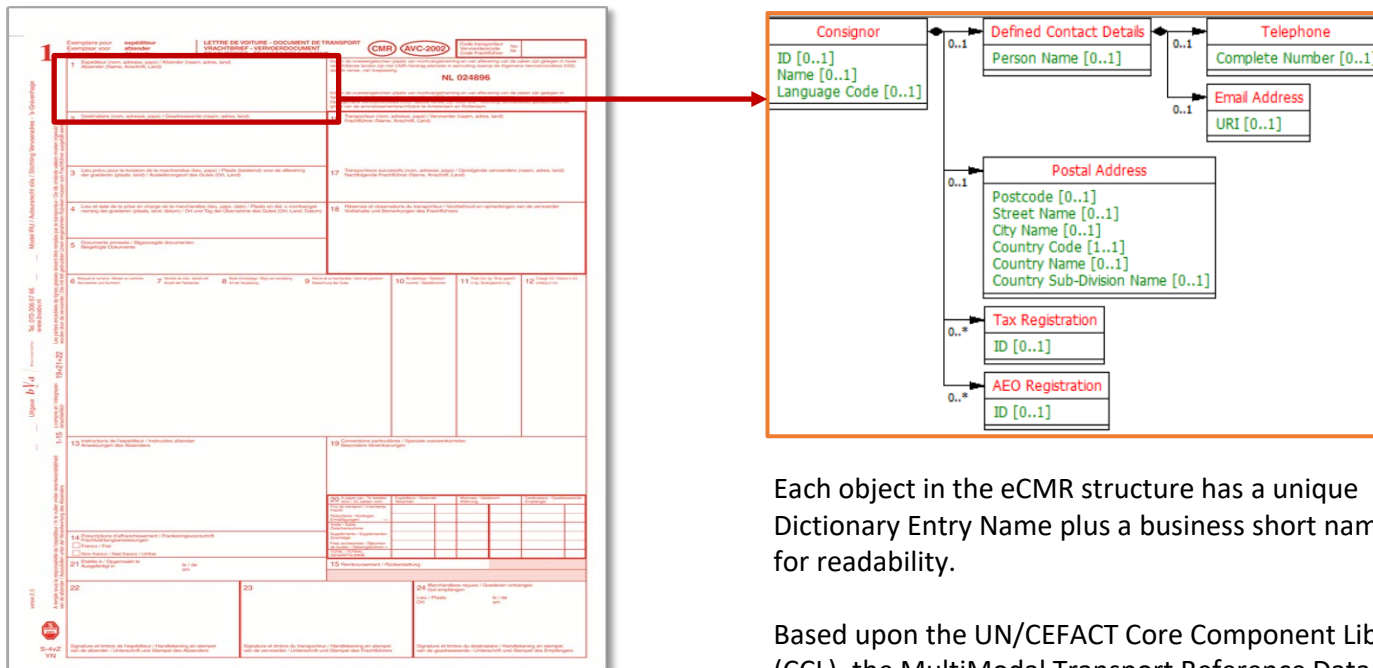


- Maritime specific subset of MMT created and re-used to model the **Ocean Bill of Lading**
- Project calls concluded last week on this work, results to be published good basis for industry eBill of Lading projects





## e-CMR model: CMR Convention data, taken into account



Each object in the eCMR structure has a unique Dictionary Entry Name plus a business short name for readability.

Based upon the UN/CEFACT Core Component Library (CCL), the MultiModal Transport Reference Data Model (MMT) and the Supply Chain Reference Data Model (SCRDM).



# eCMR Project Overview 2016/17



## Project Purpose

To develop and publish an international XML “Electronic Consignment Note” message (e-CMR) for international and national transportation of goods by road.

## Project Scope

To standardize and harmonise the electronic consignment note message to be exchanged between carrier, shipper and receiver of the goods.

Such electronic message shall be considered as an electronic contract of carriage of goods by road in accordance with the provisions of the above-mentioned protocol.

Furthermore, the implementation of standardised electronic consignment note message may facilitate further interactions with other modes of transport.

## Project Deliverables

- Subset BRS for Electronic Consignment Note based on MMT
- CCBDA RSM for Electronic Consignment Note based on MMT
- An XML schema of the Electronic Consignment Note Message

## Project Lead

Evgeniya Iafaev

## Head of Delegation Support

- Germany • Netherlands • Ukraine

[unece.org/trade/uncefact/mainstandards](http://unece.org/trade/uncefact/mainstandards)

Road Consignment Note (eCRM)


[Business Requirement Specification](#) 

[Executive Guide](#) [English](#)  [French](#)  [Russian](#) 



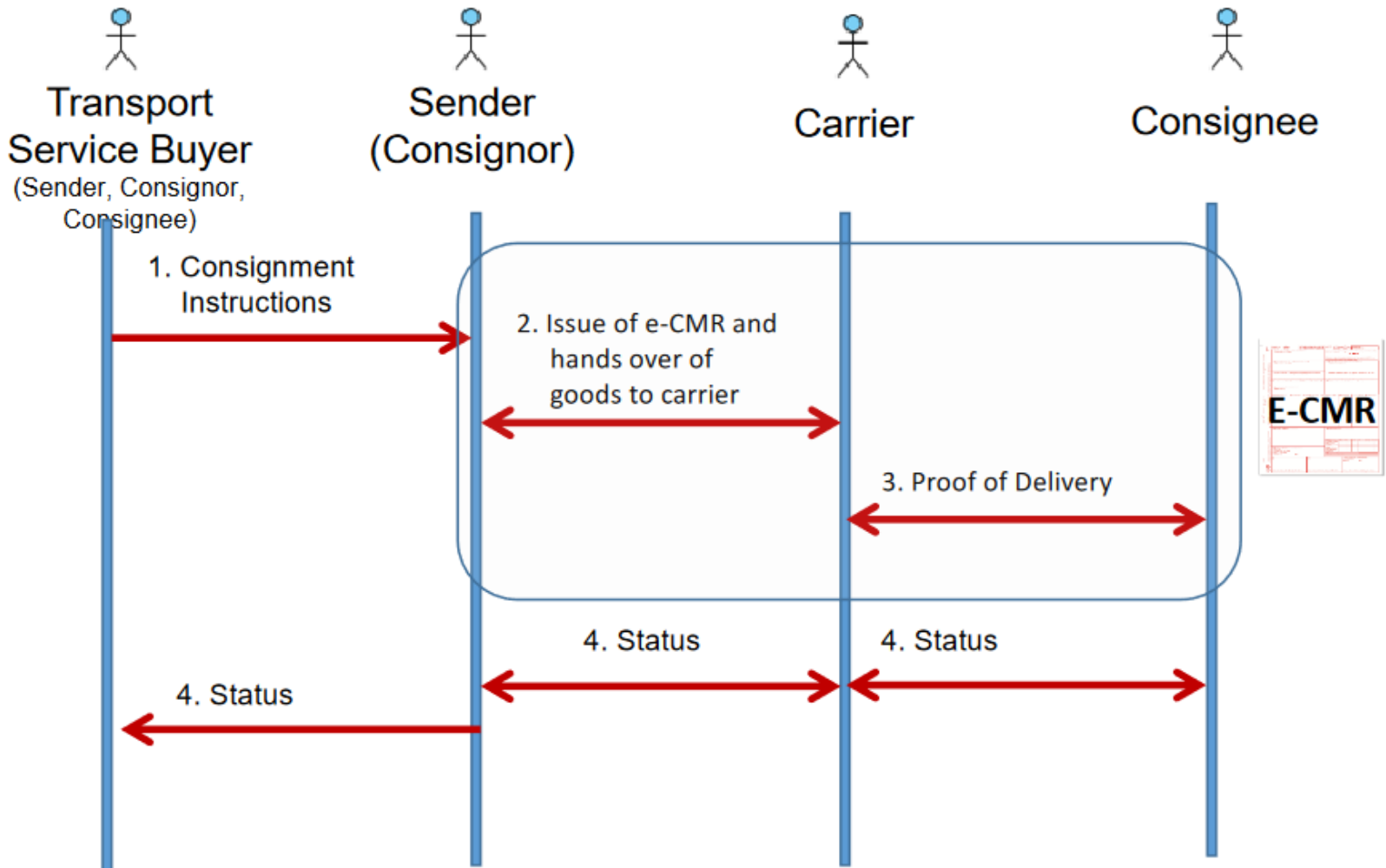
[XLS Guideline Structure](#) 

[XSD Schema](#) 

[UML Diagram](#) 

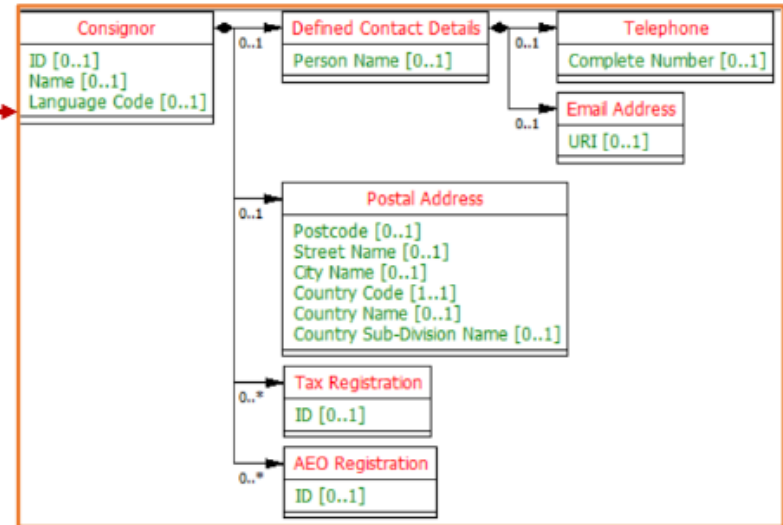
[HTML](#)

# UN/CEFACT e-CMR Project Focus



UN / CEFACT

# e-CMR model: CMR Convention data taken into account



Each object in the eCMR structure has a unique Dictionary Entry Name plus a business short name for readability.

Based upon the UN/CEFACT Core Component Library (CCL), the MultiModal Transport Reference Data Model (MMT) and the Supply Chain Reference Data Model (SCRDM).

Copyright UNECE

# Challenge: Interoperability of e-CMR Solutions

## CMR convention

- **Content of CMR document**
  - Date and time
  - Name and address of carrier, sender, consignee
  - The description of nature of goods, method of packing ...
  - Number of packages
  - Charges related to carriage
  - etc.

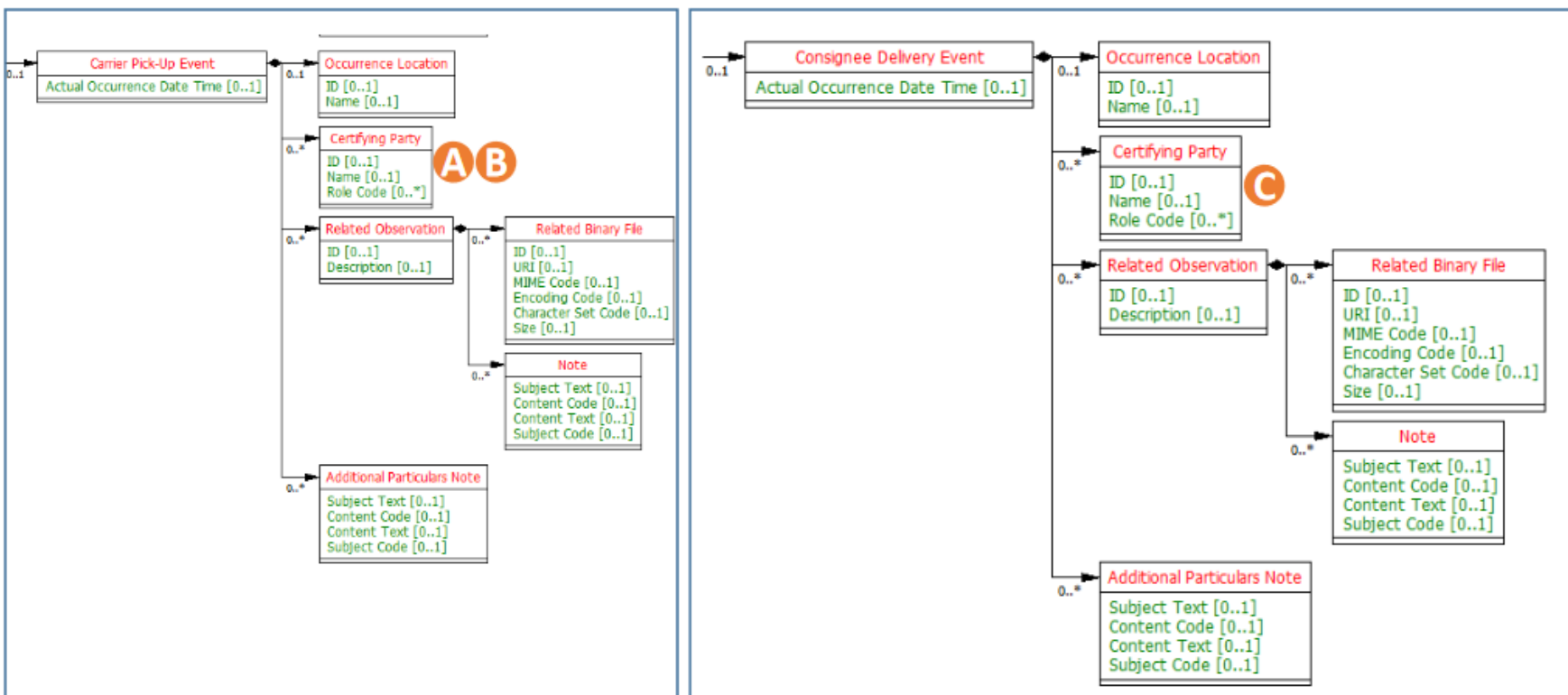
## e-CMR Protocol

- **Set requirements for e-CMR. Parties shall agree on:**
  - The method for issuance and delivery of e-CMR
  - An assurance that e-CMR retains its integrity
  - The manner in which the party entitled to the rights arising out of e-CMR is able to demonstrate that entitlement
  - etc.

*First step: identify a list of vital messages for e-CMR, provide appropriate message model*



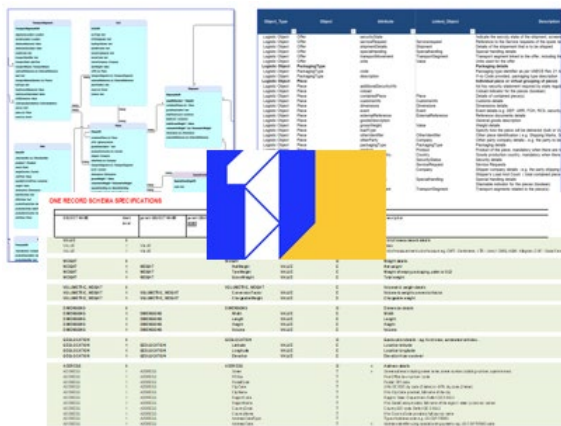
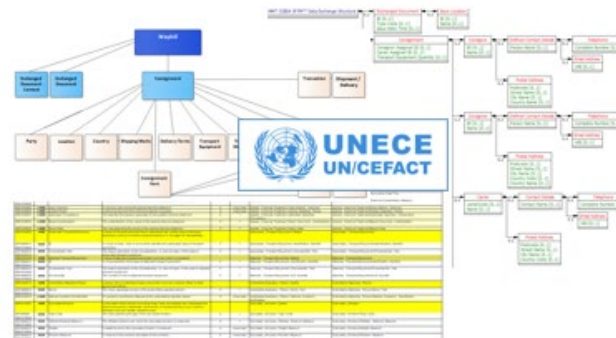
# e-CMR Model (contractual events)





Airfreight domain supports multiple IATA standards for B2B & some B2G:

- Cargo-IMP: legacy, bespoke EDI
- Cargo-XML: current, UN/CEFACT aligned
- ONE Record: evolving, JSON-LD backwardly compatible



Review & mapping UN/CEFACT IFTM subset with **IATA ONE Record**

Enhanced data model for example supporting piece level

Bill of Lading (BOL) <> Air Waybill (AWB) baseline, others to be considered

Next steps: project team assembly & project calls



# How the UNTTC cross-modal standards can help cross-border transport corridors?

- Provides harmonisation opportunities between modal specific operational data e.g. dangerous goods whilst not disturbing modal regulatory or convention requirements
- Supports digitilisation of accompanying documents through QR codes, APIs to access platform hosted background data and provide data authentication and security
- Enables corridor pilot projects to build interoperable data exchanges reusing published available global UN/CEFACT Reference Data standards providing:
  - Semantic structures
  - Data Exchange structures
  - International Code Sets



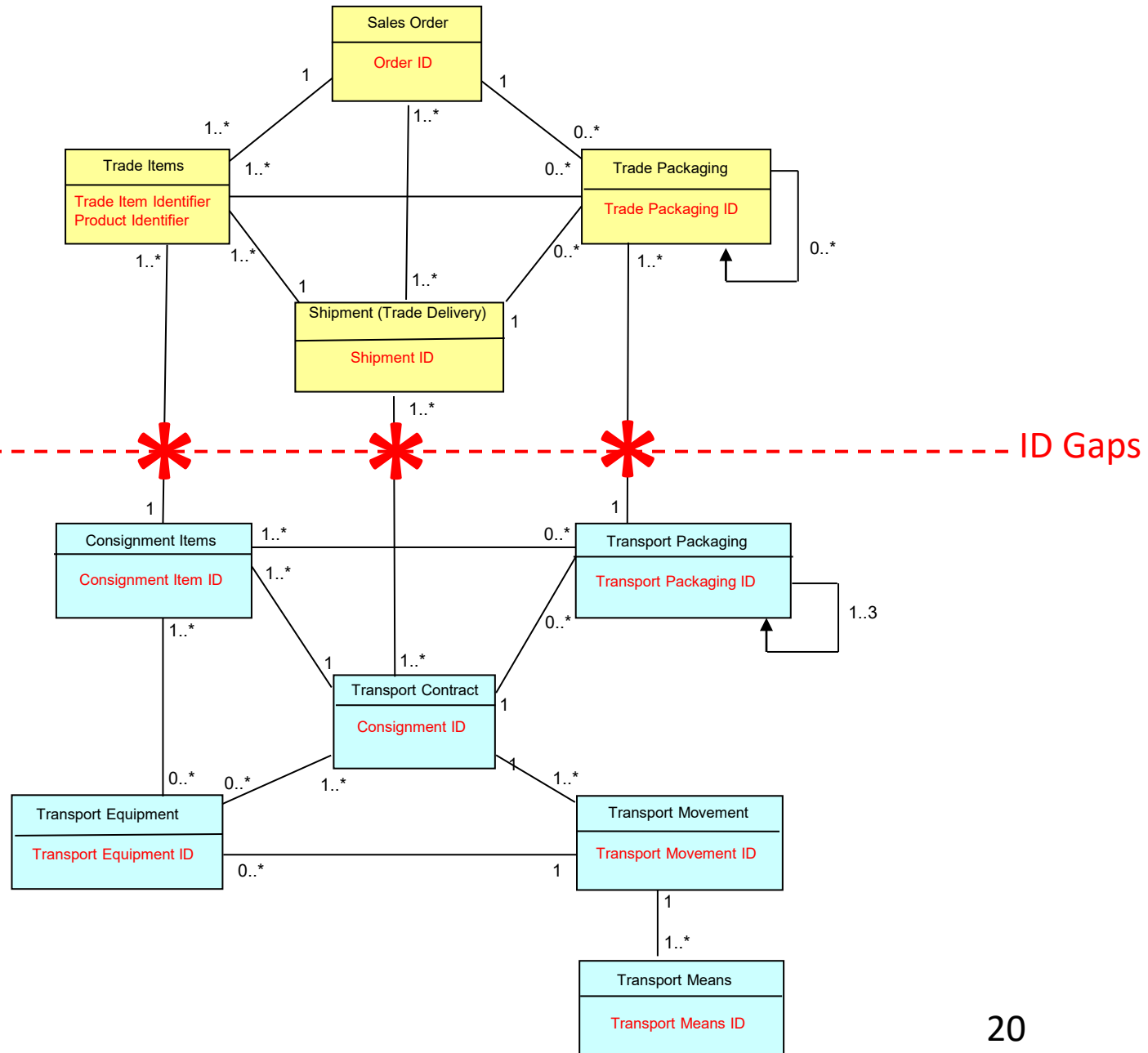
# Global Trade – Trace & Track Project



Trade  
B2B Data  
World

Transport  
B2B Data  
World

UN / CEFAC



# Inter Modal Matrix using MMT as Reference Model (Auto-generated)



	C	D	E	F	G	H	I	J	K	L	M	N	O
1	BN	FIATA Bill	CIM-SMGS	CIM-SMGS URL	Wagon List	River B/L	Maritime B/L	eCMR	EFTI DR FEB2021	EFTI DG to	Air Waybill	Air CSD	Air DG
2	BN	FIATA Bill	CIM-SMGS	CIM-SMGS URL	Wagon List	River Bill of Lading	Maritime B/L	eCMR MMT; R	EFTI DESCopy	MMT Cont	Air Wayb	CSD; D21	DG Decla
3	MMT CCBDA IFTM** Data Exchange Structure	X	X	X	X	X	X	X	X	X	X	X	X
4	Exchanged Document Context							X					
10	Exchanged Document	X	X	X	X	X	X	X			X	X	X
11	ID	X	X	X	X	X	X	X			X	X	X
12	Name												
13	Type Code					X	X	X			X	X	X
14	Issue Date Time	X	X	X	X	X	X	X			X	X	X
15	Remark							X					
16	Original Issued Quantity	X				X							
17	Copy Issued Quantity	X				X							
18	Purpose Code		X	X							X	X	X
19	Sender Assigned ID		X	X									
20	Recipient Assigned ID		X	X									
21	Version ID		X										
22	Note		X	X				X				X	
23	Subject Text							X					
24	Content Code							X					
25	Content Text		X	X				X				X	
26	Subject Code							X				X	
27	Reference Document		X	X									
28	Type Code		X	X									
29	Issue Location	X				X	X	X			X		X
30	ID	X				X	X	X			X		X
31	Name	X				X	X	X			X		X
32	Country Code	X						X					
33	Contractual Clause	X	X	X							X		
34	ID	X									X		
35	Content Text	X	X	X							X		
36	Air Waybill Consignor Signatory Authentication	X	X	X	X						X		
37	Actual Date Time	X	X	X							X		

# Dangerous Goods Project

## Project Purpose

The UN/EDIFACT Dangerous Goods Notification message (IFTDGN) is an important message which has been widely implemented over the past 20+ years especially in the maritime sector where it is the basis for communication between shipping lines and their agents to report dangerous goods and polluting and noxious substances on board of their vessels upon arrival in and departure from ports (part of the IMO FAL Compendium). However, over the past years, due to changes in legislation (such as UNECE and EU dangerous goods reporting requirements) and emerging business requirements there is now an urgent need for reporting additional data elements. Some of these additional requirements cannot be specified within the current IFTDGN UN/EDIFACT message definition. These additional requirements need to be included in the MMT RDM to support aligned implementation in other syntax technologies such as XML. In addition, the UNECE Transport Division's Dangerous Goods section has progressed work on establishing the basis of electronic exchange of dangerous goods message exchange. This work has not yet taken into consideration the UN/CEFACT Multi-Modal Transport Reference Data Model (MMT-RDM).

# Dangerous Goods Project



- The UN/EDIFACT Dangerous Goods Notification message (IFTDGN) is an important message which has been widely implemented over the past 20+ years especially in the maritime sector where it the basis for communication between shipping lines and their agents to report dangerous goods and polluting and noxious substances on board of their vessels upon arrival in and departure from ports (part of the IMO FAL Compendium)
- However, over the past years, due to changes in legislation (such as UNECE and EU dangerous goods reporting requirements) and emerging business requirements there is now an urgent need for reporting additional data elements
- Multimodal focus important to maximise sharing DG data to facilitate cargo transfers across modes
- Extensions to UN/EDIFACT IFTDGN message needed plus additions to the MMT RDM

# Dangerous Goods Project

## Project Scope

Part A of the project shall update the UN/EDIFACT IFTDGN message definition to include the additional requirements as outlined above. Part B of the project shall map the identified additional data requirements to the MMT-RDM

## Project Deliverables

Deliverable 1: BRS Deliverable 2: Updated UN/EDIFACT message definition for the IFTDGN UNSM Deliverable 3: XML schema with relevant submissions to the CCL and MMT-RDM