

UN/CEFACT

Reference Data Models (Semantic Models)

International Standards for
Trade Data Harmonisation supporting
Document/Data Exchanges
and Data Pipeline Concepts

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UN/CEFACT

Objectives

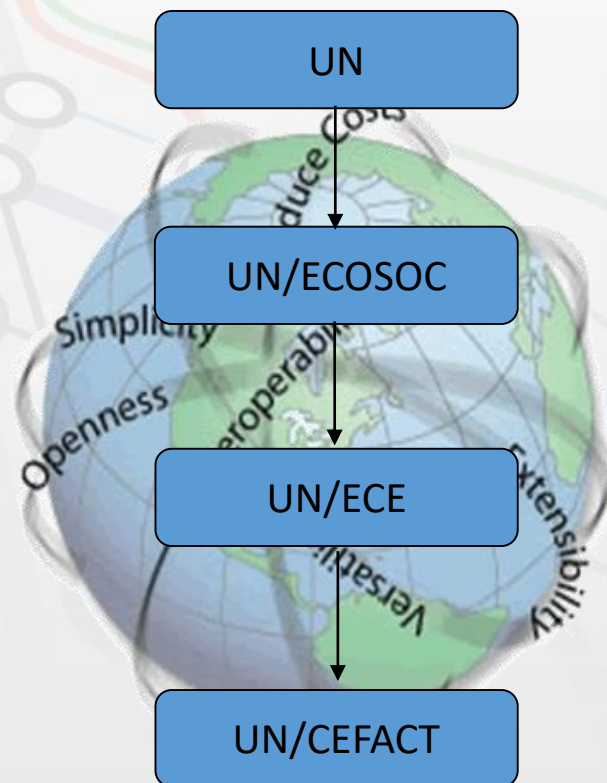
- Simple, transparent and effective processes for global business
- Efficient and automated exchange of information

Outputs

- Global Trade Facilitation and Electronic Business Recommendations and Standards

Means

- Public Private Sector Partnership
 - over 400 experts from government and business
- Experts meet via internet every week plus two Face-to-Face Forums per year



Global Remit

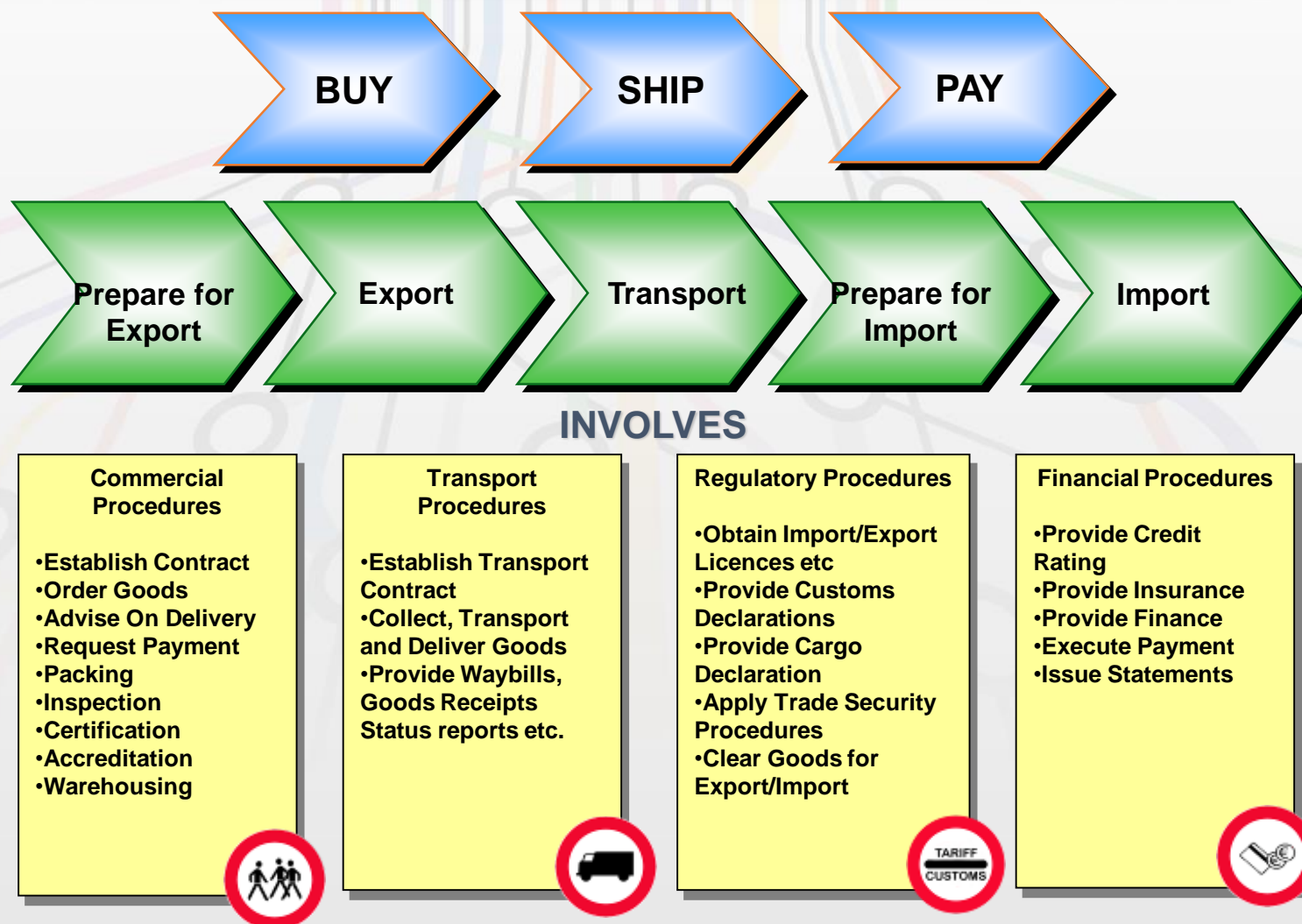
UN/CEFACT Key Outputs

- Internationally developed and agreed Trade Facilitation Recommendations
- Internationally developed and agreed Business Standards
- UNTDED (ISO 7372)
- Reference Data Models (Buy/Ship/Pay)
- Continually Maintained Libraries
 - UN Core Component Library (CCL)
 - UN/EDIFACT directories
 - UN/XML Schemas
 - Globally applicable Code Sets (e.g. UNLOCODE)

Key Cross-Border Challenges faced by the Private Sector

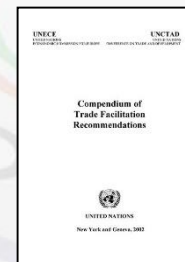
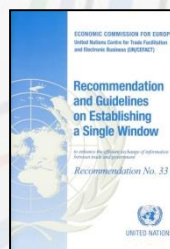
- Too many legal or governmental requirements mandating use of paper documents
- Non-aligned modal specific international transport conventions in an increasingly intermodal or synchromodal transport & logistics world
- Multiple regulatory requirements with unharmonised data definitions and exchange protocols
- Legal goods held back at borders or en route by Customs, Port Health or other cross-border agency due to:
 - Lack of accurate targetting information
 - Lack of availability of accurate data at inspection point

UN/CEFACT International Supply Chain Process Model

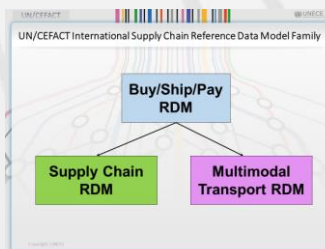
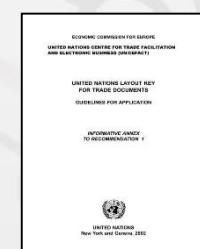
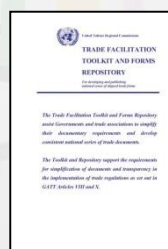
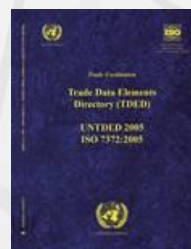


UNECE Support for Single Windows

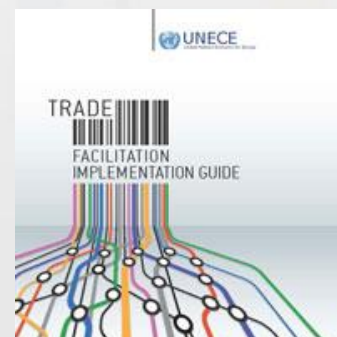
**UNECE
Policy Rec.s
UN/CEFACT**



**UNECE
Standards
UN/CEFACT**



**UNECE /
UNNExT
Guidelines,
Briefs, Case
Studies**



UN/CEFACT Single Window Recommendations

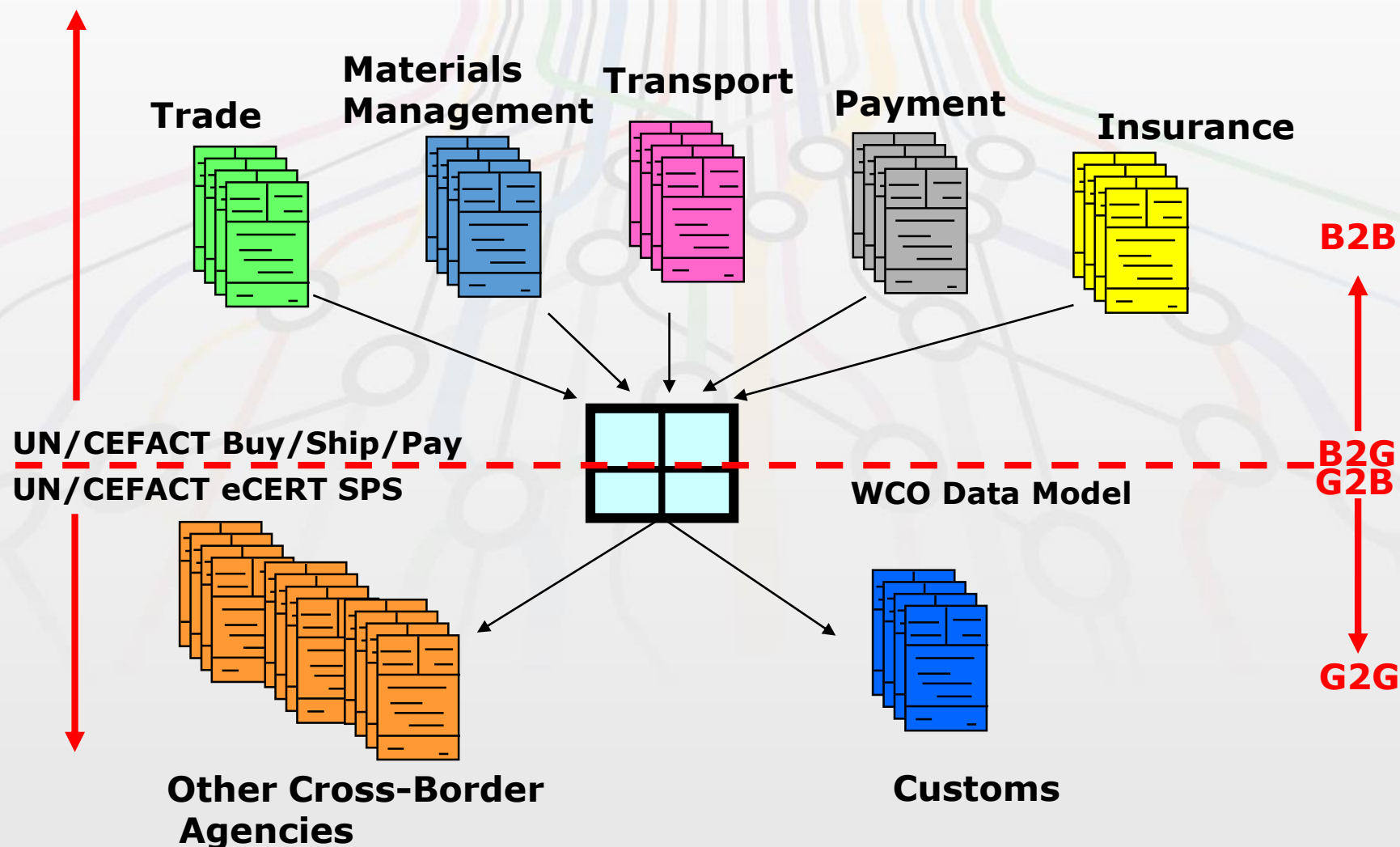
Est.	No.	Recommendation
2004	33	Single Window Recommendation 
2011	34	Data Simplification and Standardization for International Trade
2011	35	Establishing a legal framework for international trade Single Window
2017	36	Interoperability of Single Window Systems

United Nations Layout Key Document Families

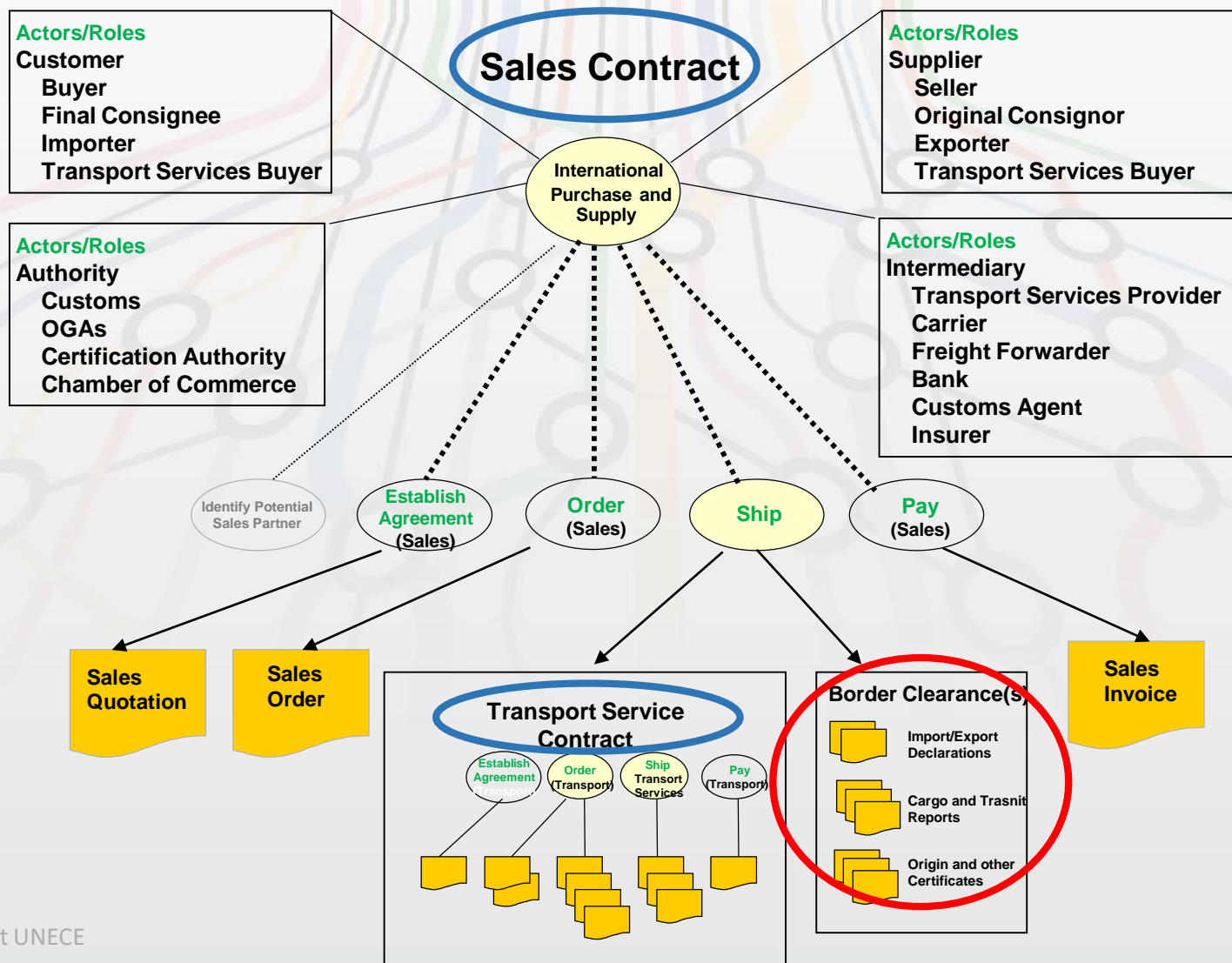
UNLK Document Families



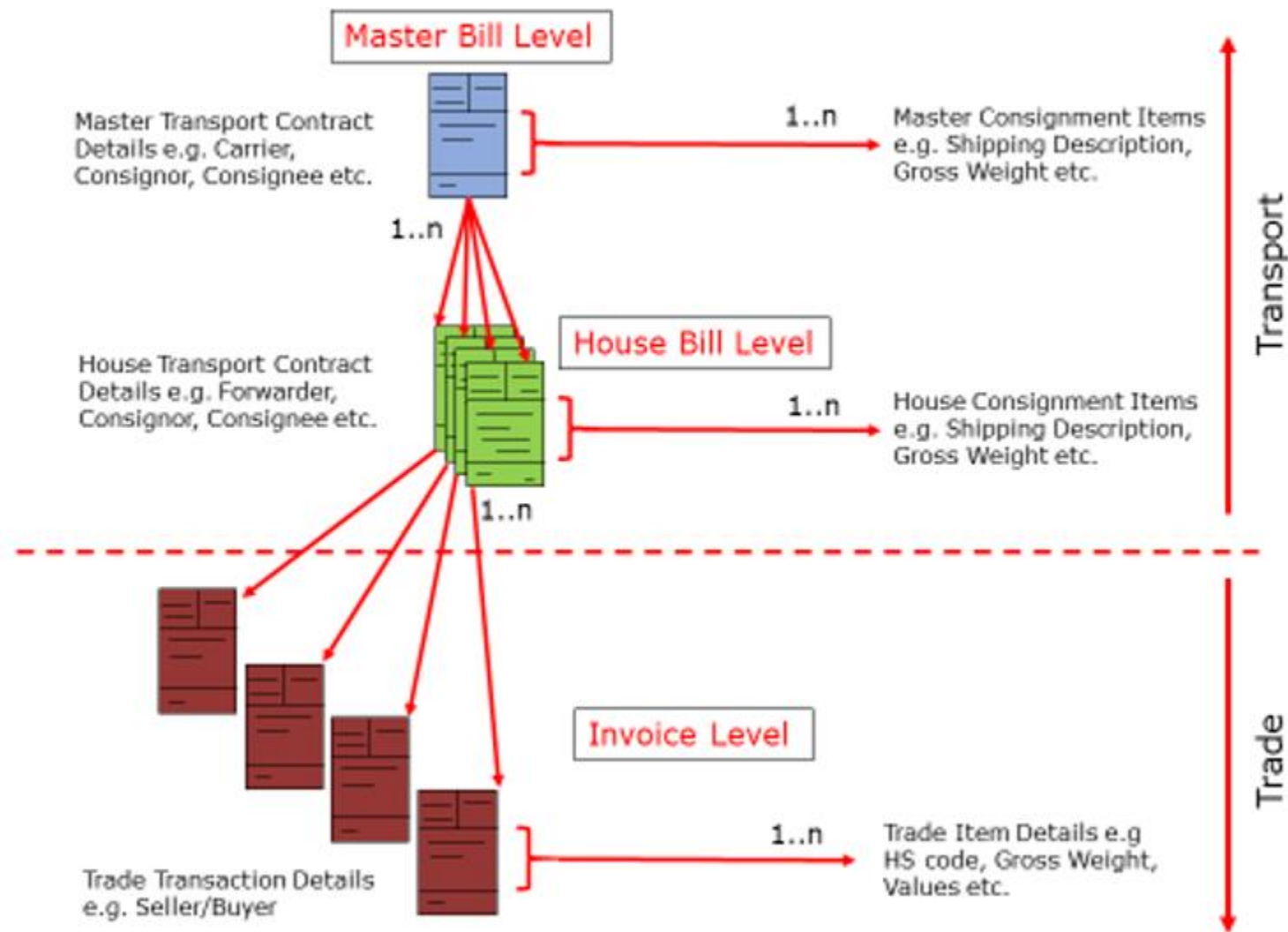
Single Windows Document Families – Border Challenges



The Relationship between International Sales and Transport Service Contracts



International Supply Train Contracts



Basis for Semantic Interoperability

Agreed and Harmonised

- Party and Role Definitions
- Semantic Anchors
- Message Structures
- Contextualised Code Subsets
- Contextualised Business Rules

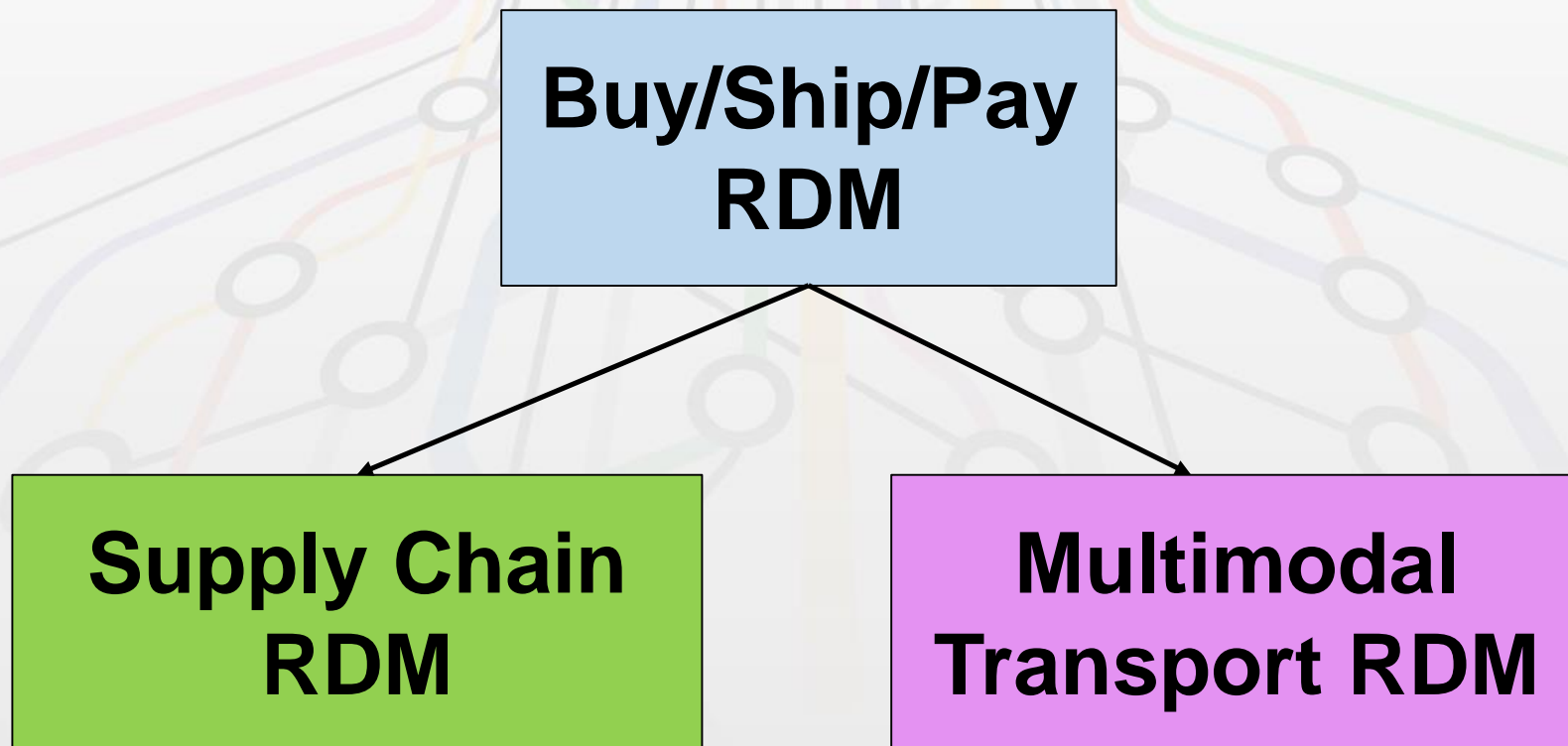
Global Trade – Semantic Anchors

- **Shipment (Trade Delivery)**
- A shipment is an identifiable collection of one or more Trade Items (available to be) transported together from the Seller (Original Consignor/Shipper) to the Buyer (Final/Ultimate Consignee):
 - A Shipment can only be destined for one Buyer
 - A Shipment can be made up of some or all Trade Items from one or more Sales Orders
 - A Shipment can have only one Customs UCR
 - A shipment may form part or all of a Consignment or may be transported in different Consignments.
- **Consignment**
- A consignment is a separately identifiable collection of Consignment Items (available to be) transported from one Consignor to one Consignee via one or more modes of transport as specified in one single transport service contractual document:
 - A Consignment can only have one Transport Service Buyer
 - A Consignment can only have one Transport Service Provider
 - A Consignment can only have one Consignor
 - A Consignment can only have one Consignee
 - The Transport Service Buyer can be either the Consignor or the Consignee
 - A Consignment is made up of one or more Consignment Items
 - A Consignment can be made up of some or all Trade Items (aggregated into Consignment Items) from one or more Shipments

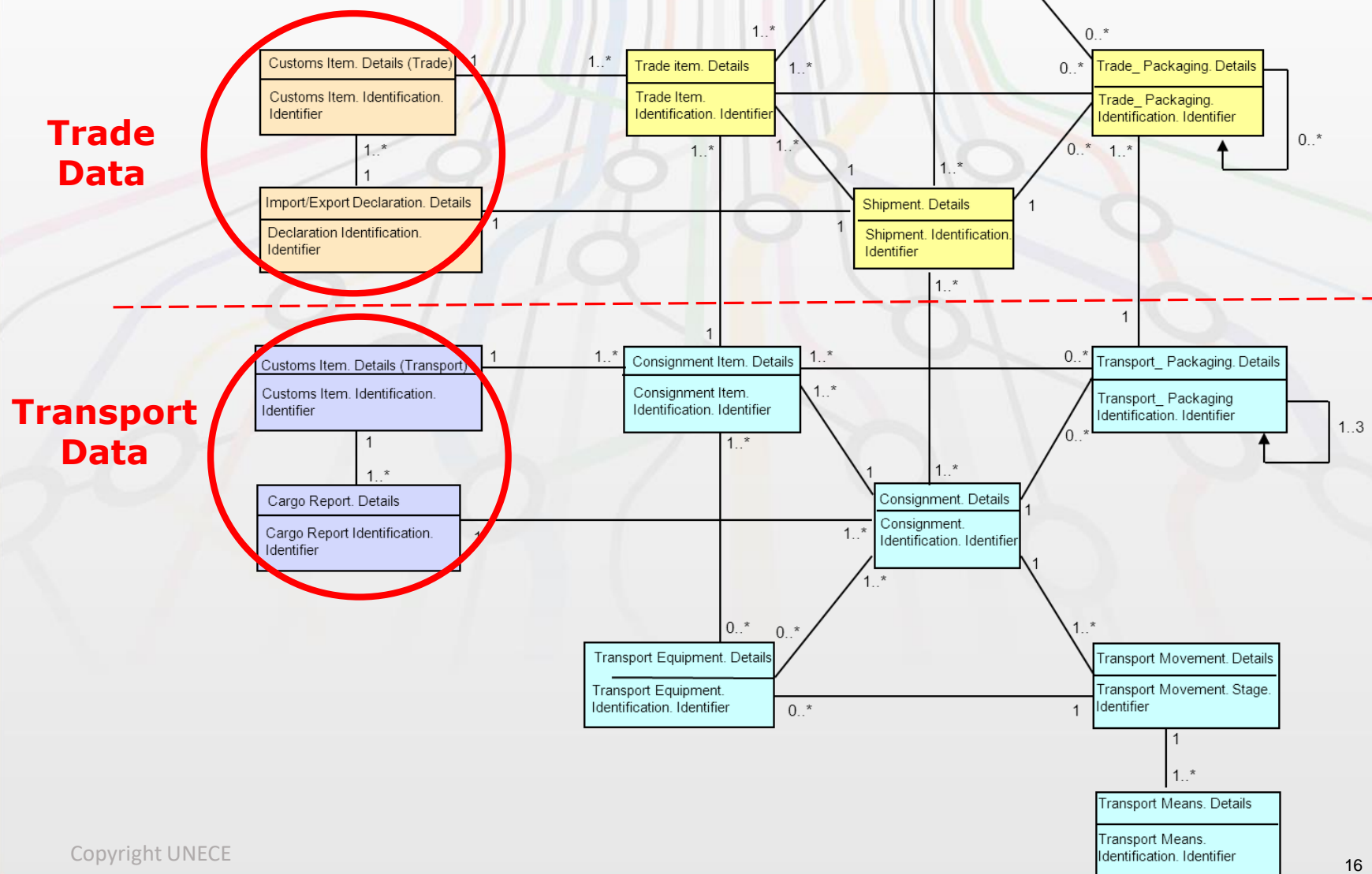
UN/CEFACT BUY-SHIP-PAY reference data models

- Cover the data requirements of the international supply chain (BUY-SHIP-PAY) process model
- Share a common library (subset of the UN/CEFACT Core Component Library – CCL)
- Include “Master” exchange syntax neutral message structures for developing process aligned subset structures
- Subset message structures can be realized into any required exchange syntax (e.g. JASON, any XML or EDIFACT etc.)
- Support collaborative information sharing
 - such as enabled by data exchange pipelines

UN/CEFACT International Supply Chain Reference Data Model Family

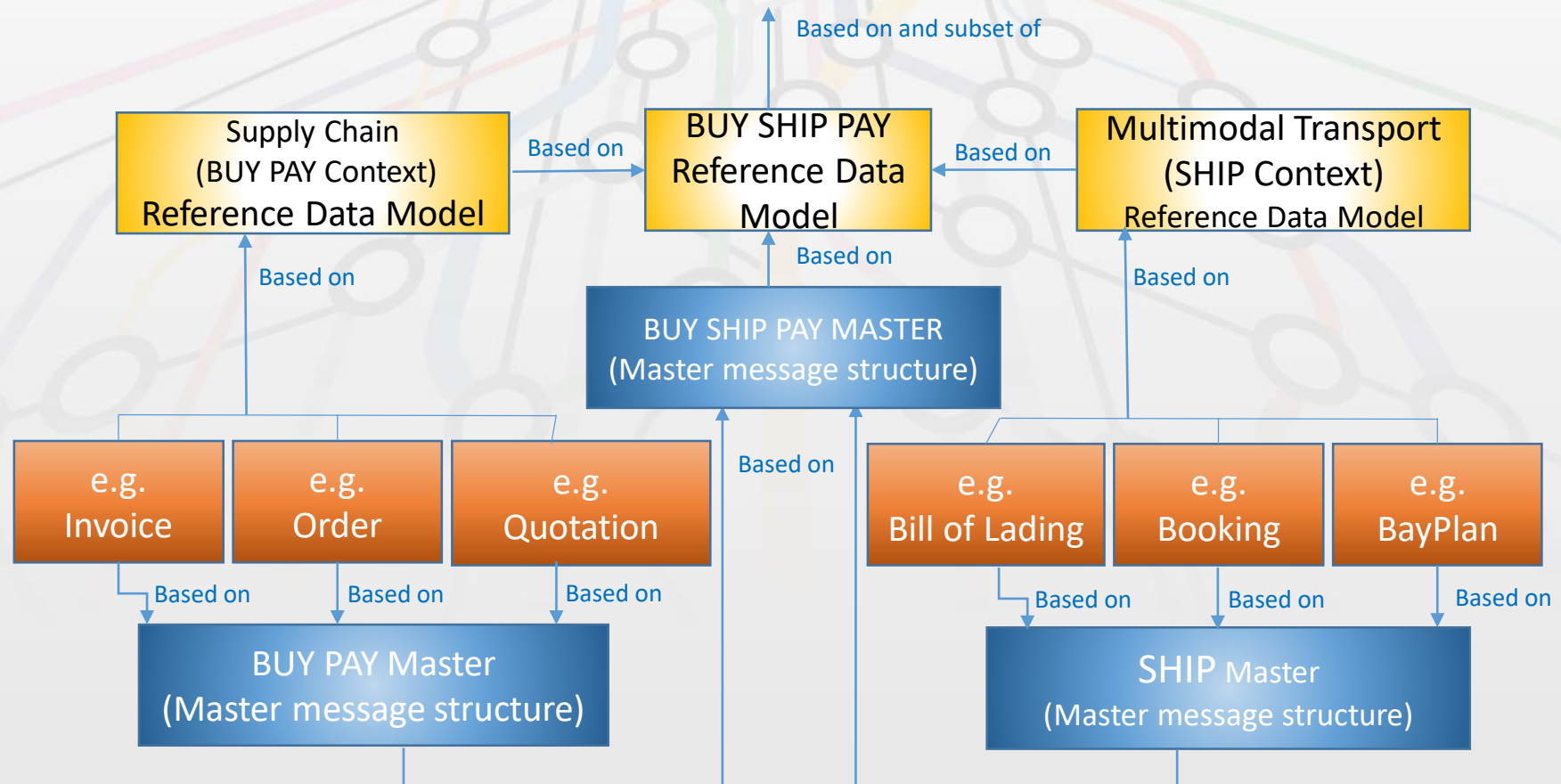


Buy/Ship/Pay – Cross-Border Trade, Transport & Customs Business Entity Overview



Building semantic models using a common library

UN/CEFACT Core Component Library (CCL)



Example: UN/CEFACT eCMR

Buy/Ship/Pay (BSP)
Semantic model
Subset of CCL

Part of

SEMANTIC MODEL
MultiModal Transport (MMT)
(subset of BSP)

BUY SHIP PAY
Master message structure

Part of

MultiModal (MMT)
Master message structure

MMT subset
Exchange Syntax-neutral data exchange structure

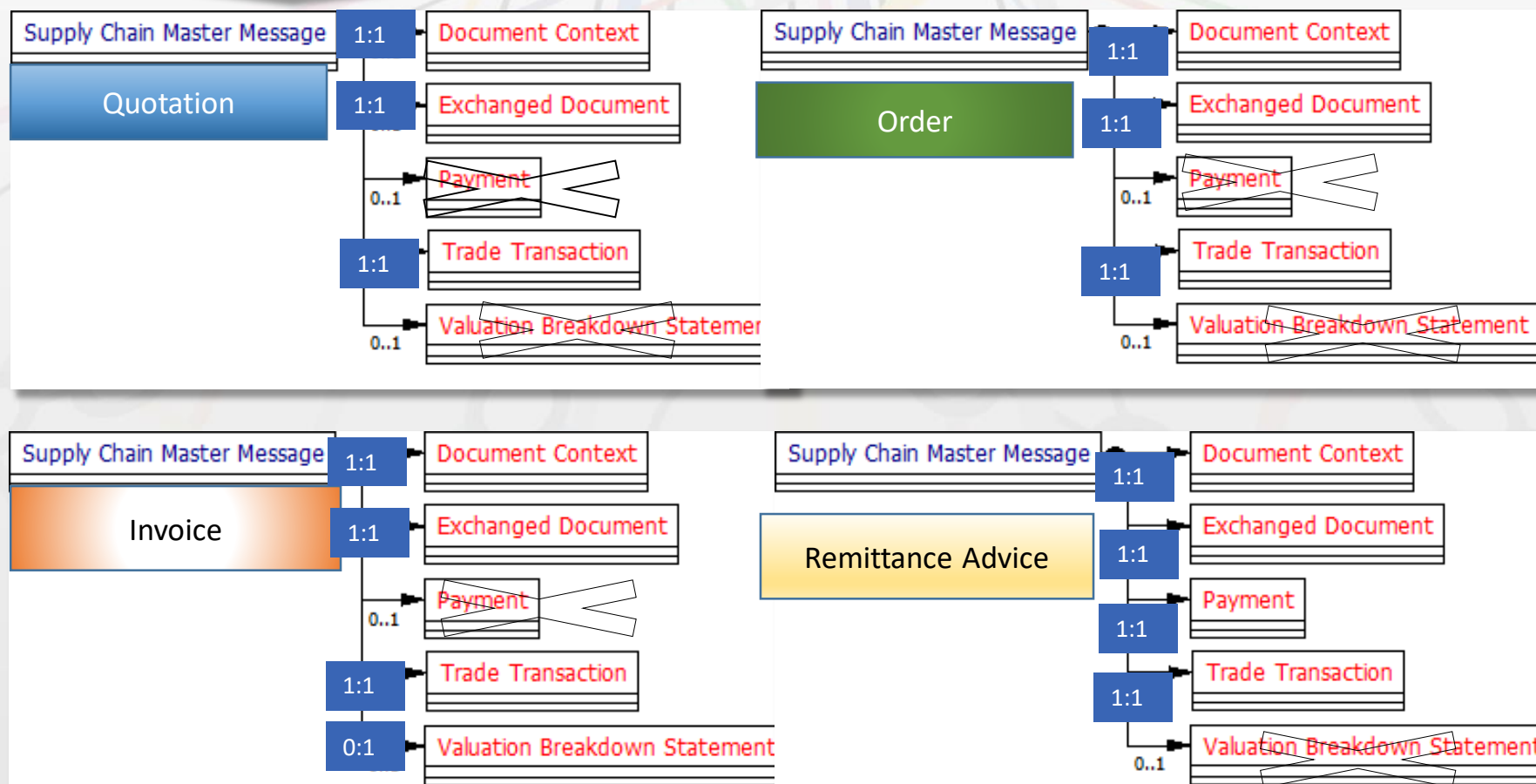
eCMR message model

Syntax

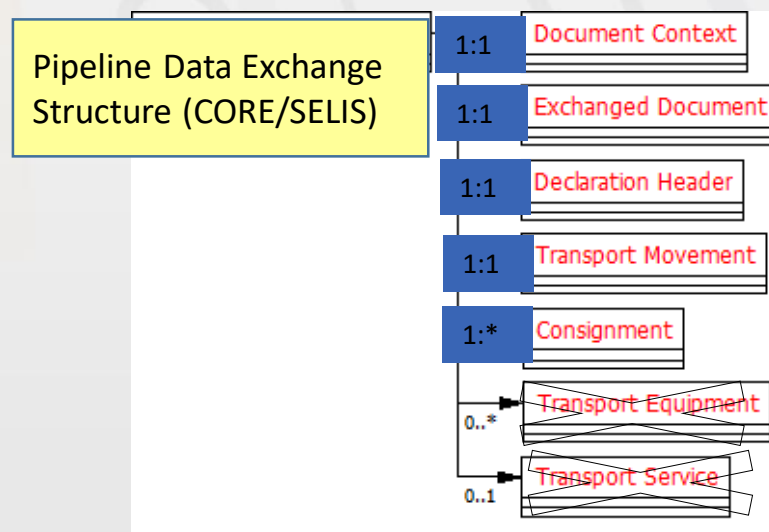
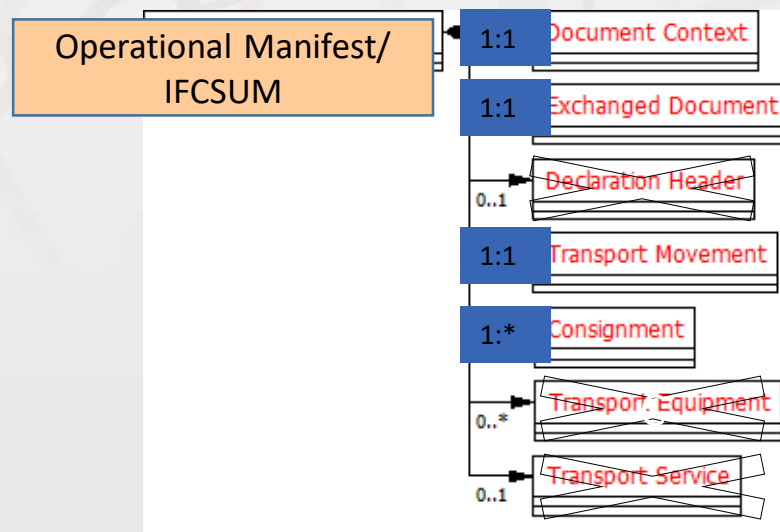
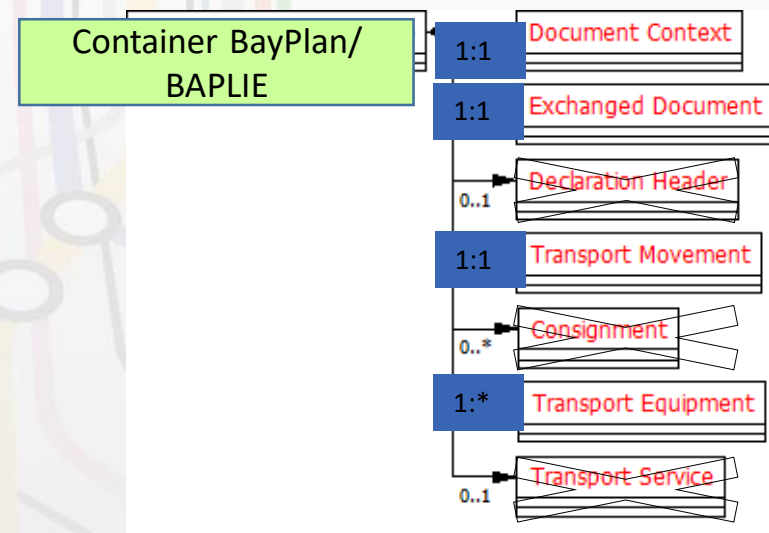
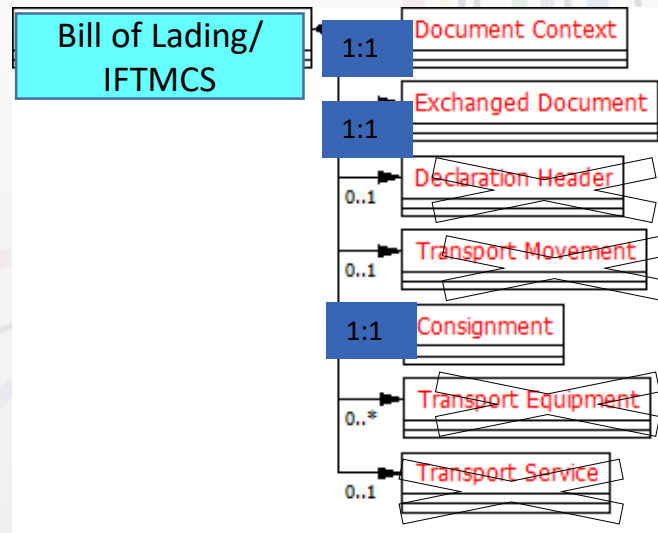
XML eCMR schema

Contextualized messages structures – Supply Chain

Supply Chain BUY PAY master message structure



Contextualized messages structures – Multimodal Transport



Benefits: Government and Private sector

- Facilitation of government & private sector interfaces by supporting Data Pipeline & Single Window concepts
- Reduction of administrative burden, efficient reuse of data
- Trusted semantic model, based on internationally accepted standardized & harmonized library
- Providing global cross-syntax Reference Data Models through the principles enshrined in:
 - the United Nations Layout Key (UNLK),
 - the United Nations Trade Data Element Directory (UNTDDED)
 - United Nations Electronic Data Interchange for Administration, Commerce and Transport (UN/EDIFACT);
- Integrated international code lists, using commonly used UNECE Recommended code lists, UN/EDIFACT code lists, ISO code lists.

For further information on:

Supply Chain Management Reference Data Model (SCRDM)

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Multimodal Transport Data Reference Model (MMT RDM)

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