

UN/CEFACT

Reference Data Models (Semantic Models)

**Anticipating and Following Technological Trends
in eBusiness Data Exchanges**



The UN/CEFACT evolution/revolution

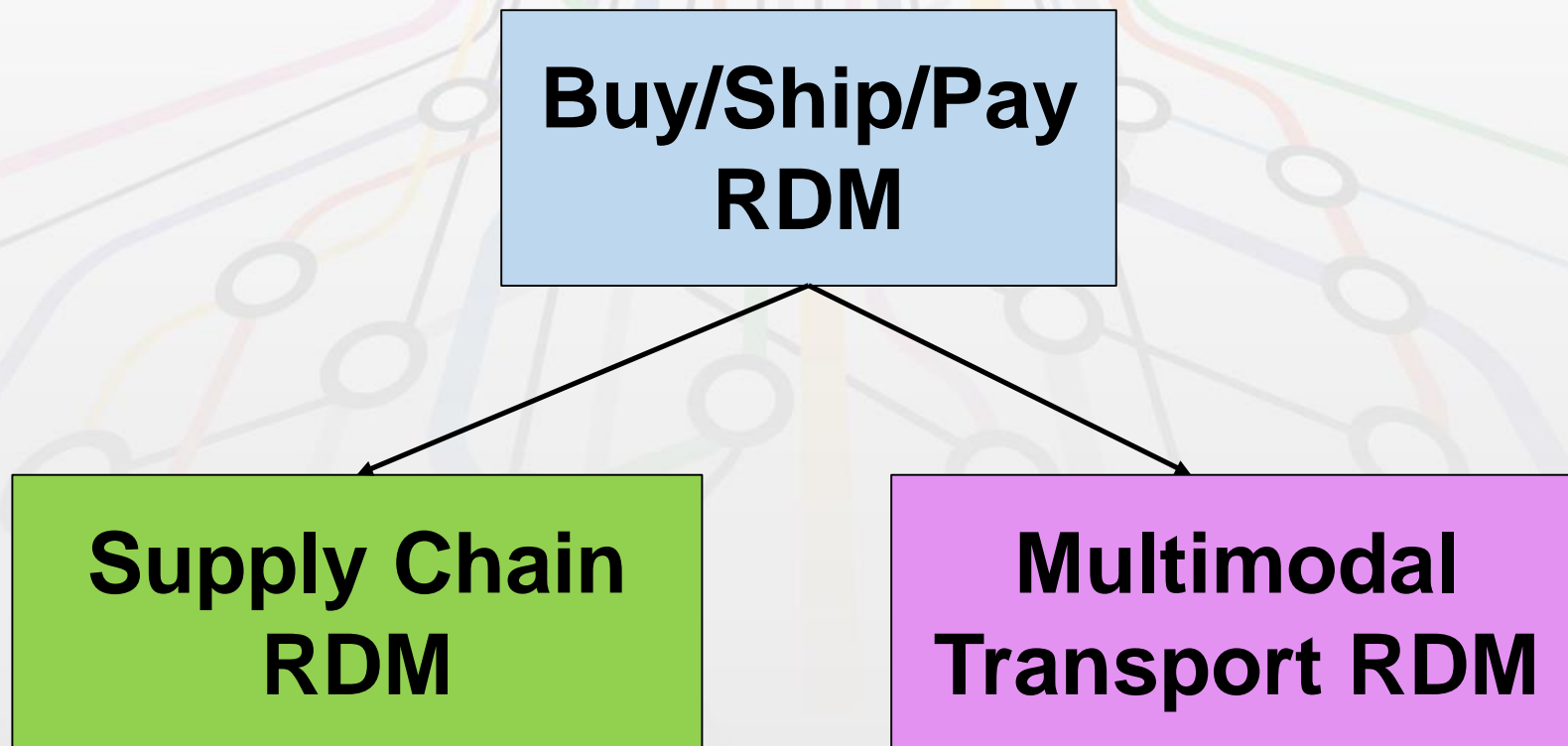
Exchange-syntax neutral Reference Data Model approach

- From Document centric to Process driven artefacts
(Contextualized Business Artefacts)
- Supports Document centric & Process driven workflows and APIs
- Standardized syntax-neutral data exchange structures, based on common Master data exchange structure
(from which complete documents and/or snippets of documents can be created in any chosen syntax e.g. XML, JSON or UN/EDIFACT etc.)

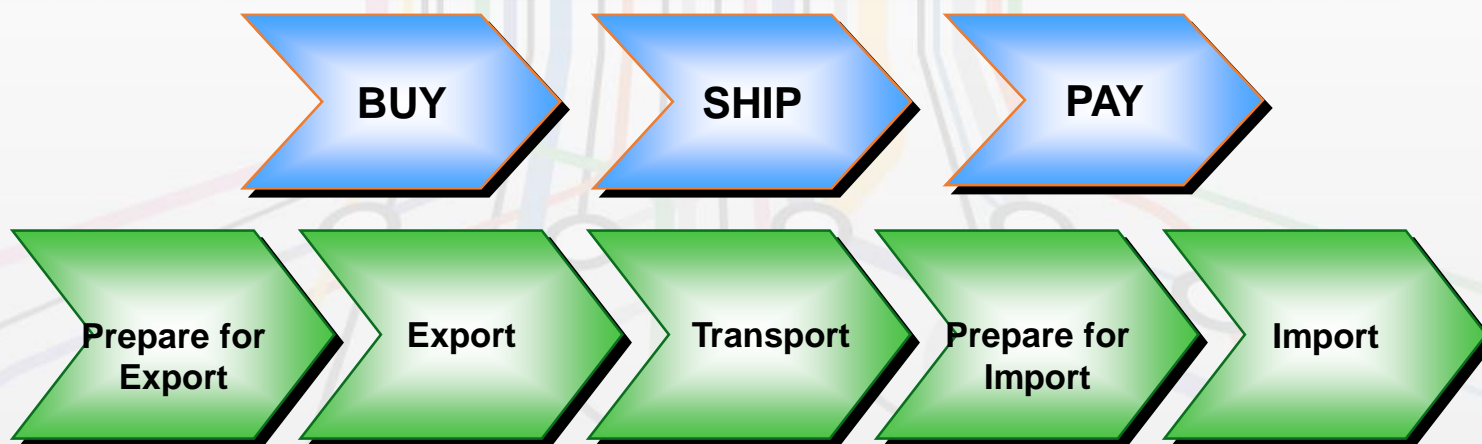
UN/CEFACT BUY-SHIP-PAY reference data models

- 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

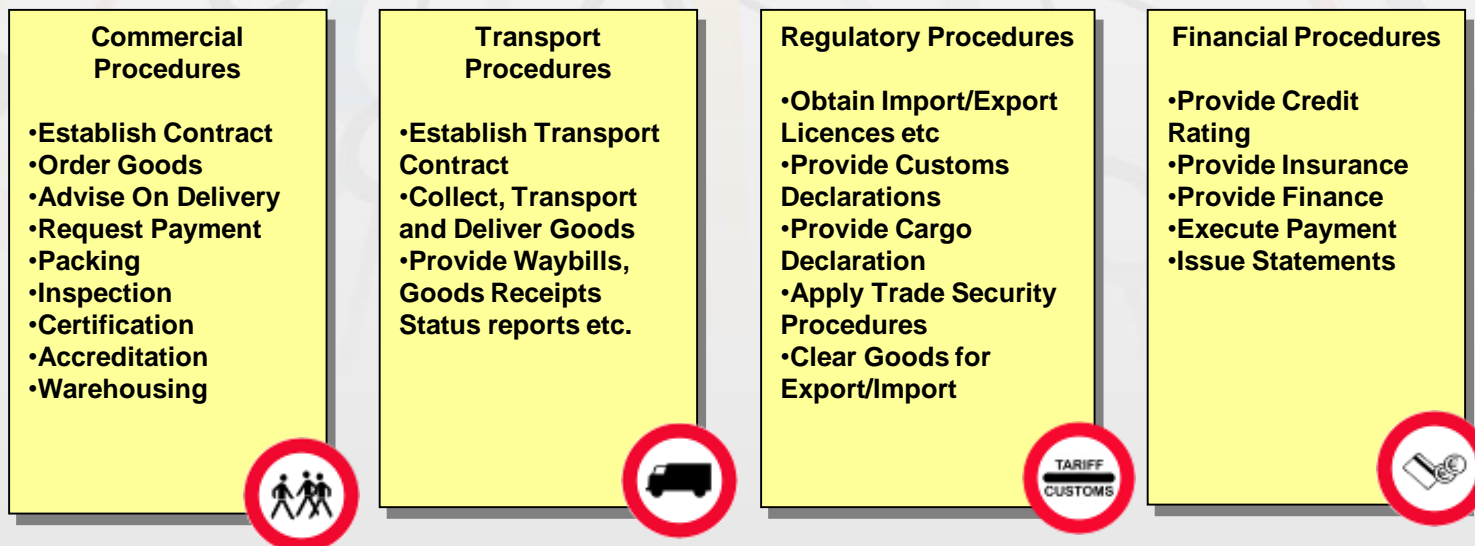
UN/CEFACT International Supply Chain Reference Data Model Family



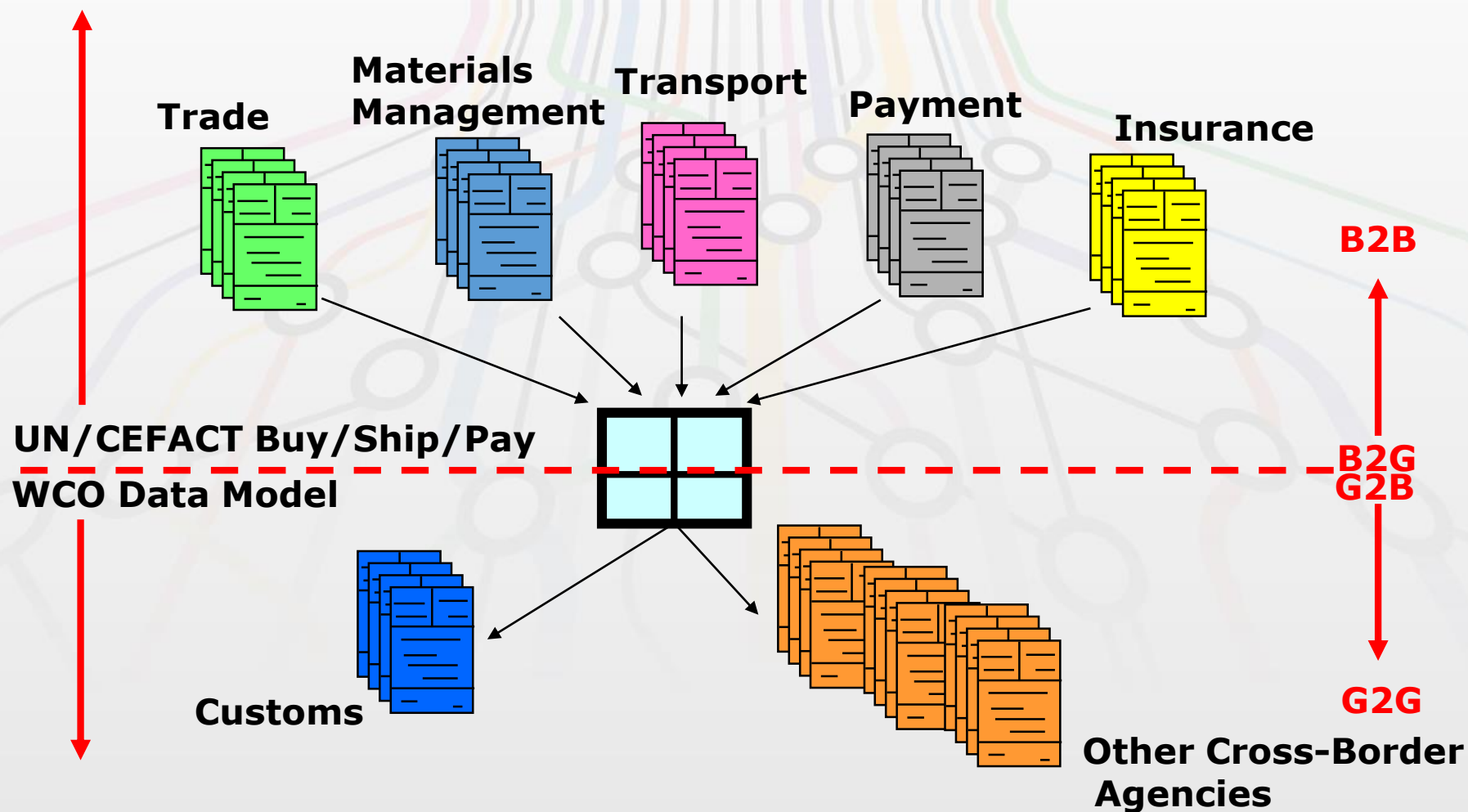
UN/CEFACT International Supply Chain Process Model



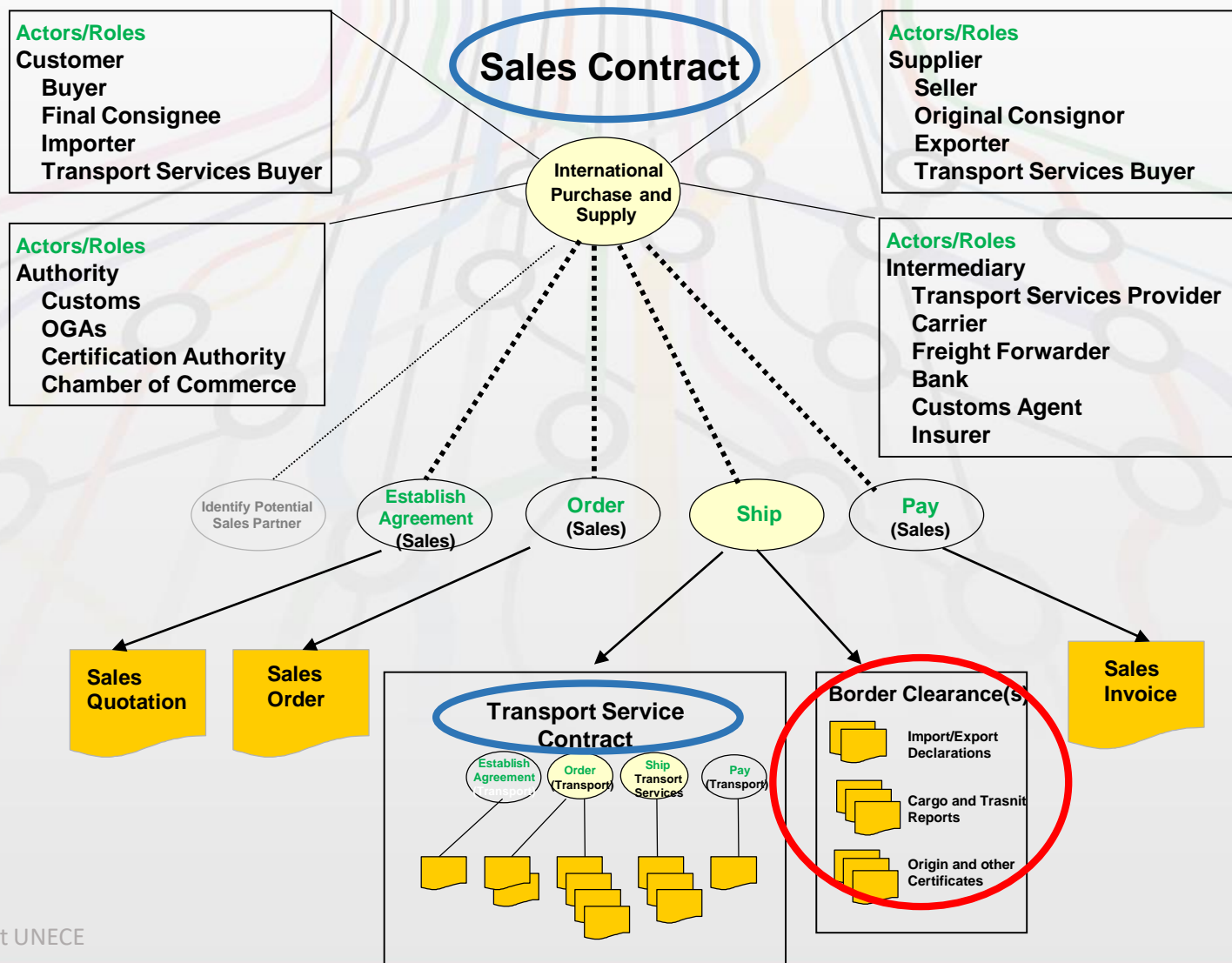
INVOLVES



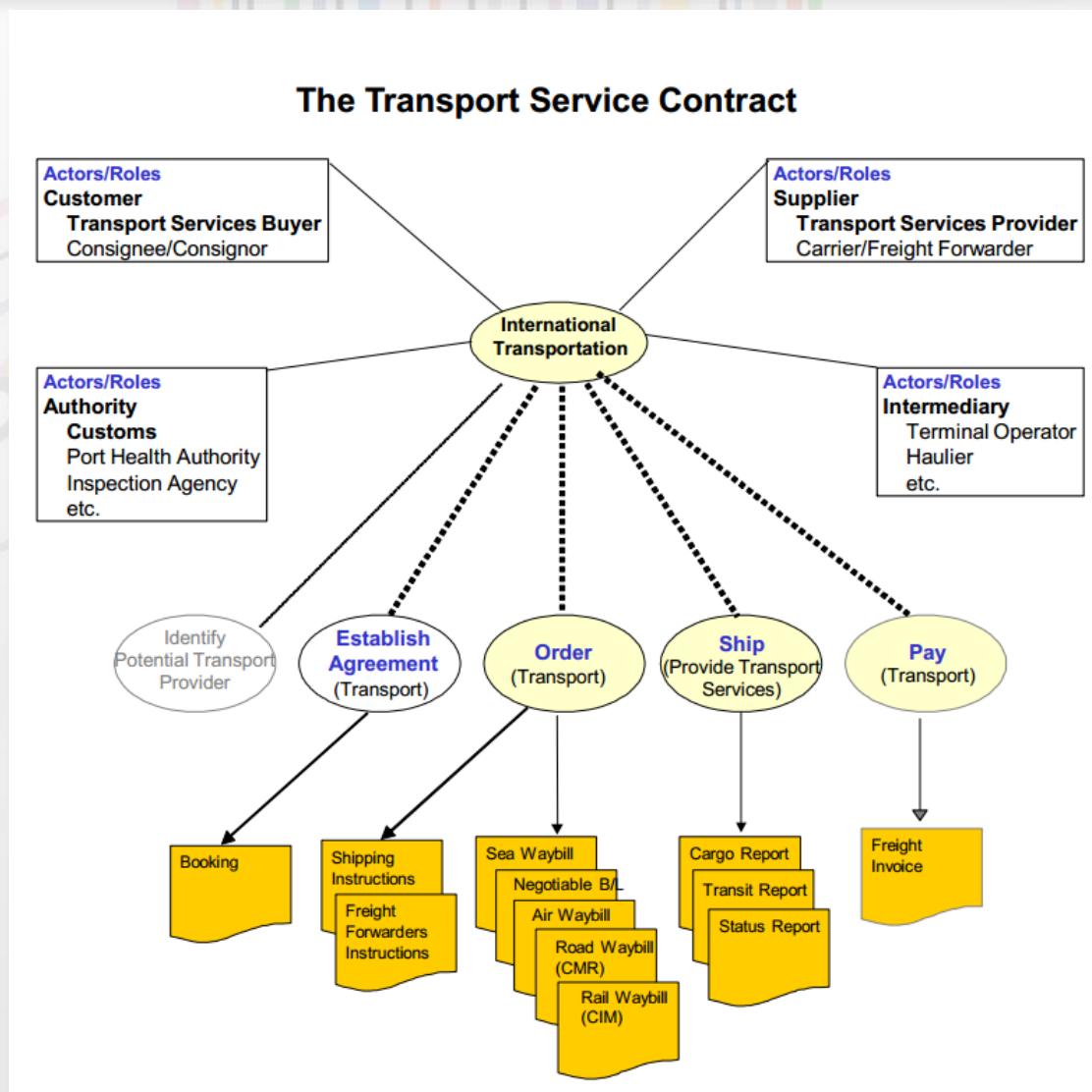
Single Windows Document Families – Border Challenges



The Relationship between International Sales and Transport Service Contracts



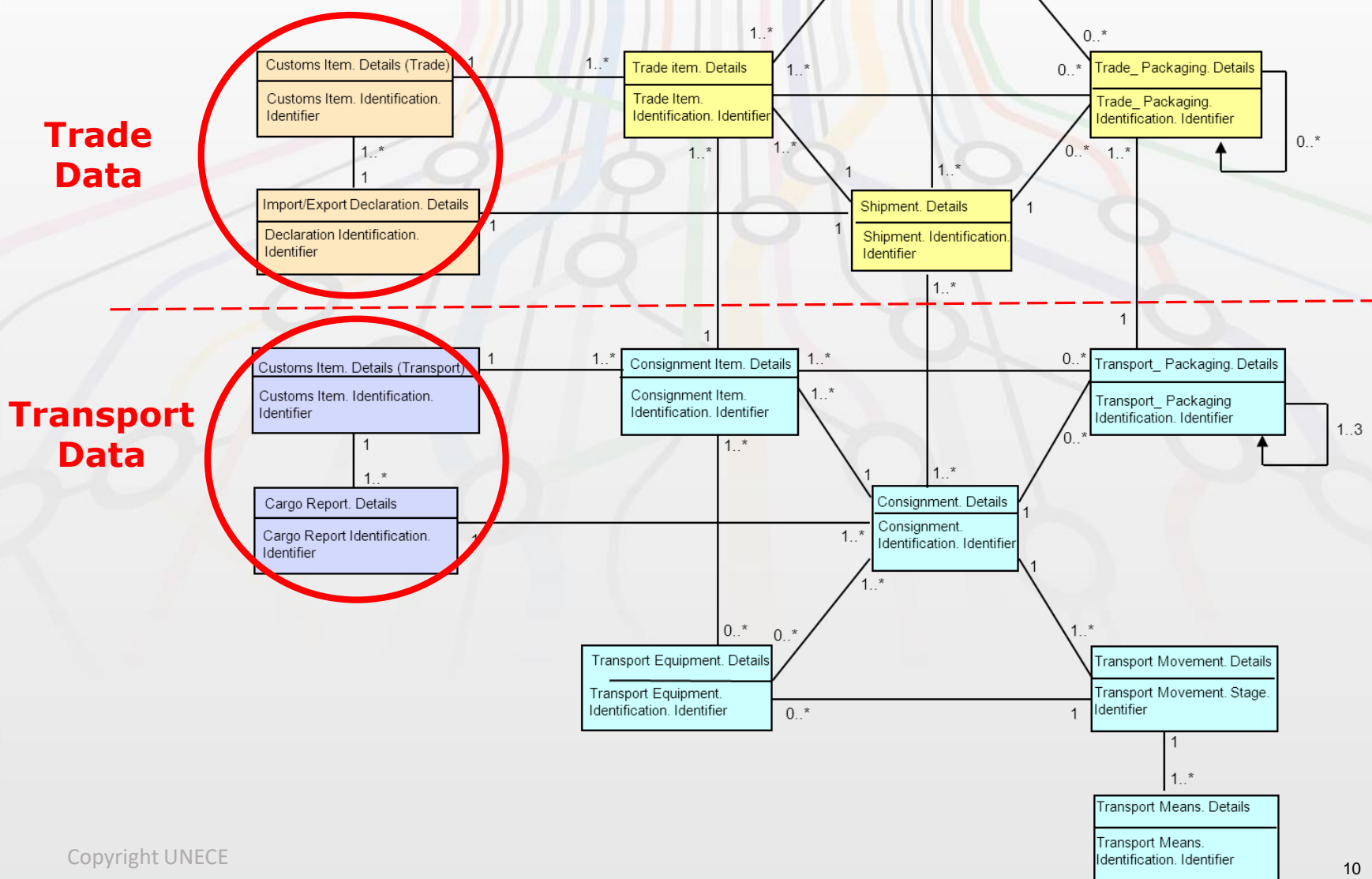
The Transport Contract



Global Trade – Semantic Anchors

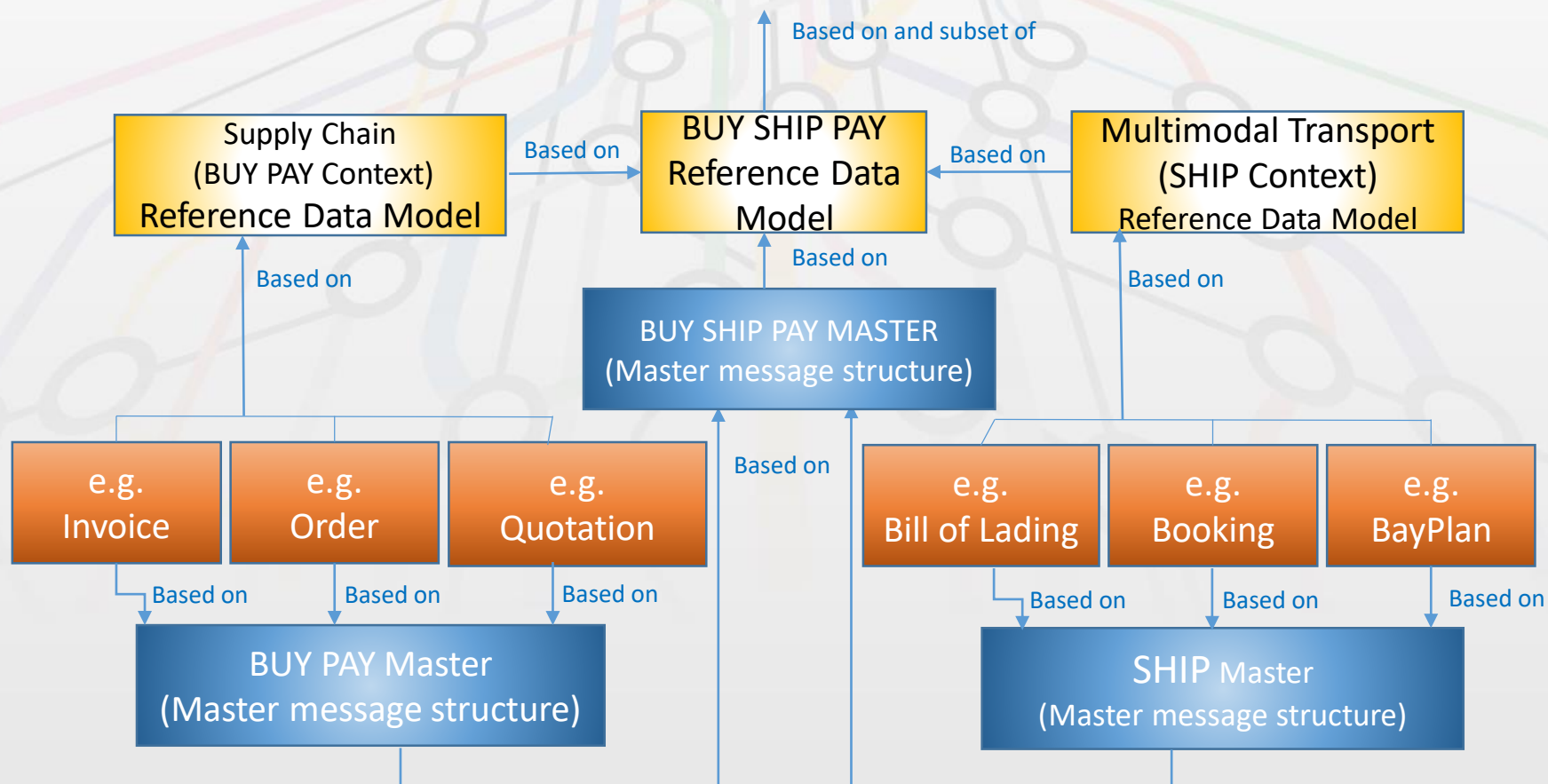
- **Shipment (Trade Delivery)**
- A shipment is an identifiable collection of one or more Trade Items (available to be) transported together from the Seller (Original Consignor/Shipper) to the Buyer (Final/Ultimate Consignee):
 - A Shipment can only be destined for one Buyer
 - A Shipment can be made 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

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

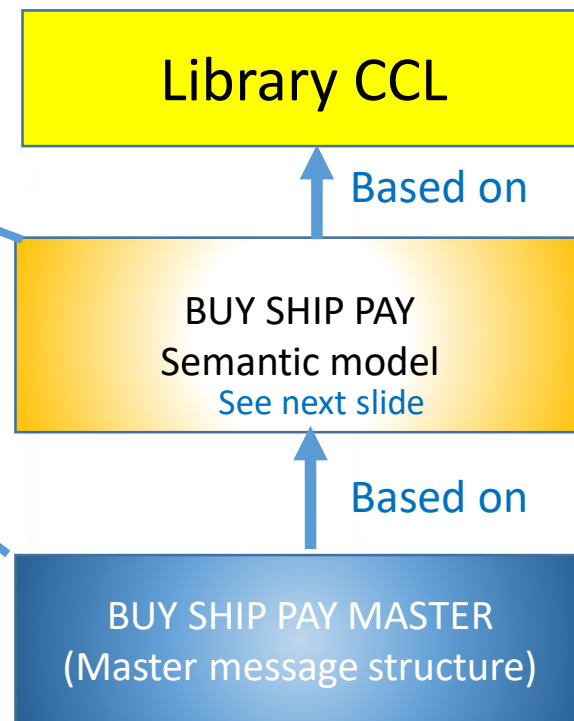
Syntax

XML eCMR schema

BUY SHIP PAY master message structure

master message
structure

- ✚ BSP D17B Master
- ✚ Core Component Types
- ✚ BSP D17B Context CCL
- ✚ CCL17B uDT2-3; edit
- ✚ Main
 - ✚ Masters
 - ✚ C Buy Ship Pay Master
 - > ● C Exchanged Document Context
 - > ● C Exchanged Document
 - > ● C Exchanged Declaration
 - > ● C Logistics Transport Movement
 - > ● C Supply Chain Consignment
 - > ● C Logistics Transport Equipment
 - > ● C Transport Service
 - > ● C Trade Settlement Payment
 - > ● C Supply Chain Trade Transaction
 - > ● C Valuation Breakdown Statement



Contextualized library (BUY SHIP PAY semantic model)

Based on

COMPLETE LIBRARY
UN/CEFACT CCL

restrictions



BUY SHIP PAY Semantic model Library subset/restrictions

- > Trade_ ... Details
- > Trade_Delivery Terms. Details
- > Trade_Geopolitical Region. Details
- > Trade_Location. Details
- > Trade_Note. Details
- > Trade_Package. Details
- > Trade_Party. Details
- > Trade_Payment Discount Terms. Details
- > Trade_Payment Instruction. Details
- > Trade_Payment Means. Details
- > Trade_Payment Penalty Terms. Details
- > Trade_Payment Terms. Details
- > Trade_Price. Details
- > Trade_Product Group. Details
- > Trade_Product Instance. Details
- > Trade_Product Warranty. Details
- > Trade_Product. Details
- > Trade_Tax. Details
- > Trade_Transport Means. Details
- > Trade_Transport Mode. Details
- > Trade_Workflow Object. Details
- > Transaction_Period. Details
- > Transport Service_Location. Details

Contextualized library (created semantic models)

Based on

BUY SHIP PAY
Semantic model

**Supply Chain
Semantic model
Library subset/restrictions**

- Trade Country
- Trade Currency Exchange
- Trade Delivery Terms
- Trade Geopolitical Region
- Trade Location
- Trade Note
- Trade Package
- Trade Party
- Trade Payment Discount Terms
- Trade Payment Instructions
- Trade Payment Means
- Trade Payment Penalty Terms
- Trade Payment Terms
- Trade Price
- Trade Product Group
- Trade Product Instance
- Trade Product Warranty
- Trade Product
- Trade Tax

**Multimodal Transport
Semantic model
Library subset/restrictions**

- Trade Country
- Trade Currency Exchange
- Trade Delivery Terms
- Trade Geopolitical Region
- Trade Location
- Trade Note
- Trade Package
- Trade Party
- Trade Payment Discount Terms
- Trade Payment Instructions
- Trade Payment Means
- Trade Payment Penalty Terms
- Trade Payment Terms
- Trade Price
- Trade Product Group
- Trade Product Instance
- Trade Product Warranty
- Trade Product
- Trade Tax

Contextualized artefacts (of the semantic models)

Based on

SEMANTIC MODEL
TRADE PRICE

Supply Chain Semantic model Trade Price subset/restriction

- C Trade Price
- > ● ~~X~~ Net Price Indicator
 - > ● ~~A~~ Type Code
 - > ● ~~A~~ Charge Amount
 - > ● ~~A~~ Basis Quantity
 - > ● ~~X~~ Minimum Charge Amount
 - > ● ~~X~~ Maximum Charge Amount
 - > ● ~~A~~ Minimum Quantity
 - > ● ~~A~~ Maximum Quantity
 - > ● ~~X~~ Unit Amount
 - > ● ~~A~~ Change Reason Text
 - > ● ~~A~~ Order Unit Conversion Factor
 - > ● ~~X~~ Repackaging Charge Amount
 - > ● ~~X~~ Repair Charge Amount
 - > ● ~~Z~~ Depreciated Validity Period
 - > ● ~~C~~ Applied Allowance/Charge
 - > ● ~~C~~ Validity Period
 - > ● ~~C~~ Included Tax
 - > ● ~~X~~ Referenced Document
 - > ● ~~C~~ Delivery Location
 - > ● ~~X~~ Comparison Price
 - > ● ~~C~~ Trade Comparison Price
 - > ● ~~C~~ Associated Document

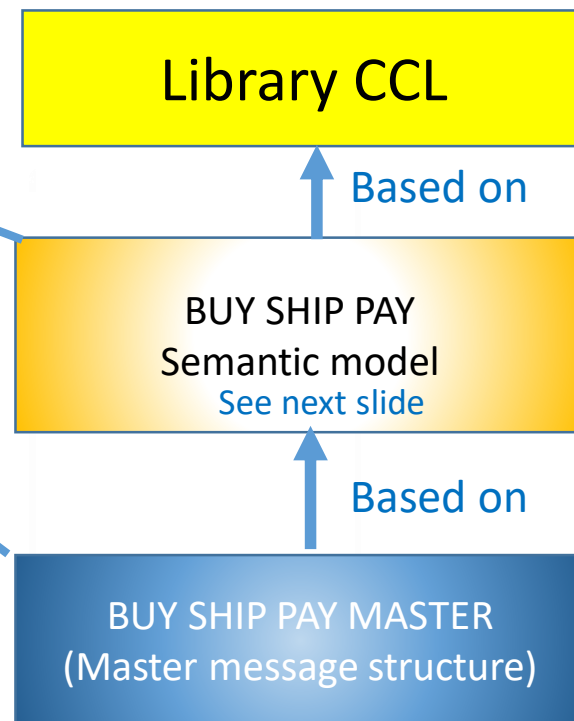
Multimodal Transport Semantic model Trade Price subset/restriction

- C Trade Price
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BUY SHIP PAY master message structure

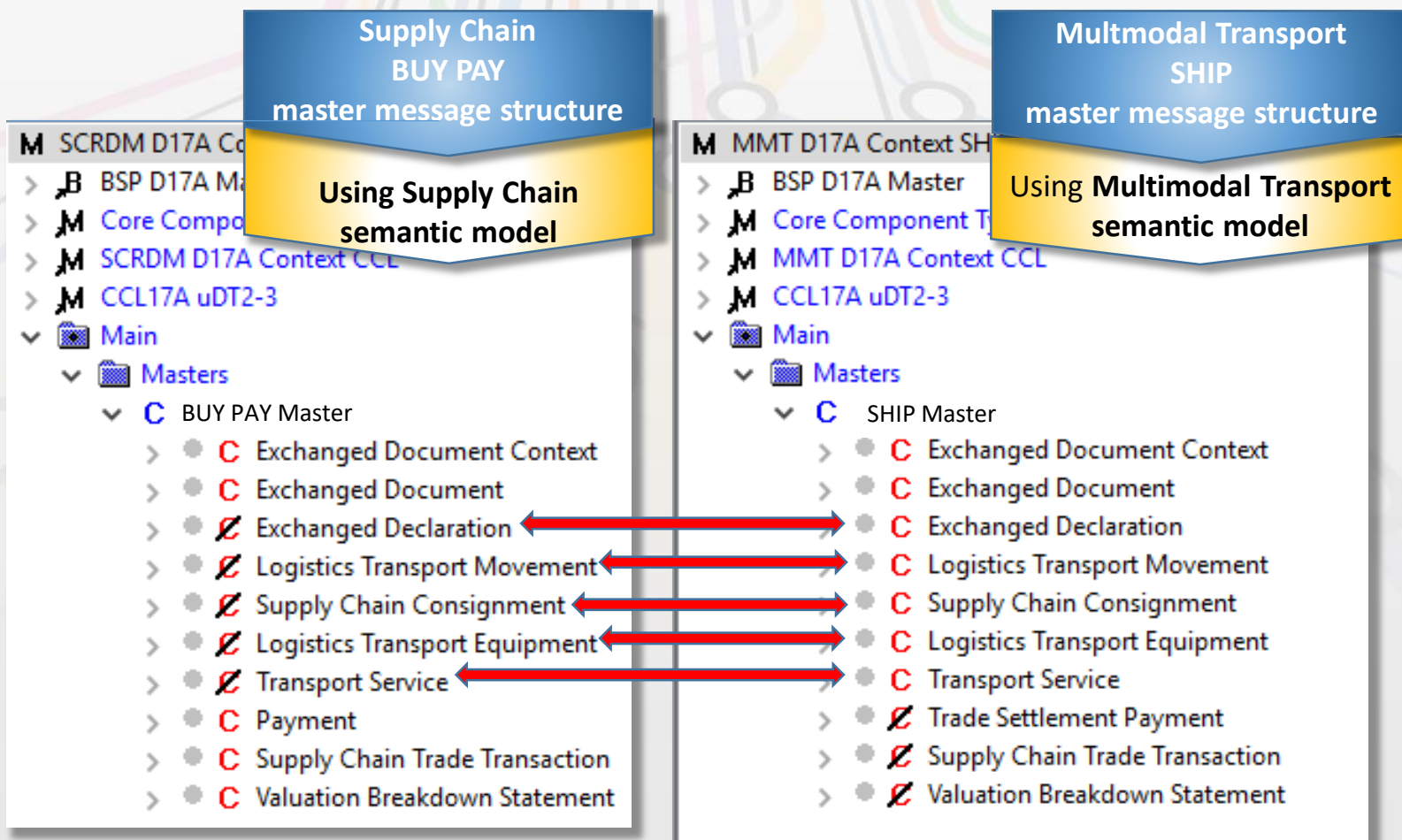
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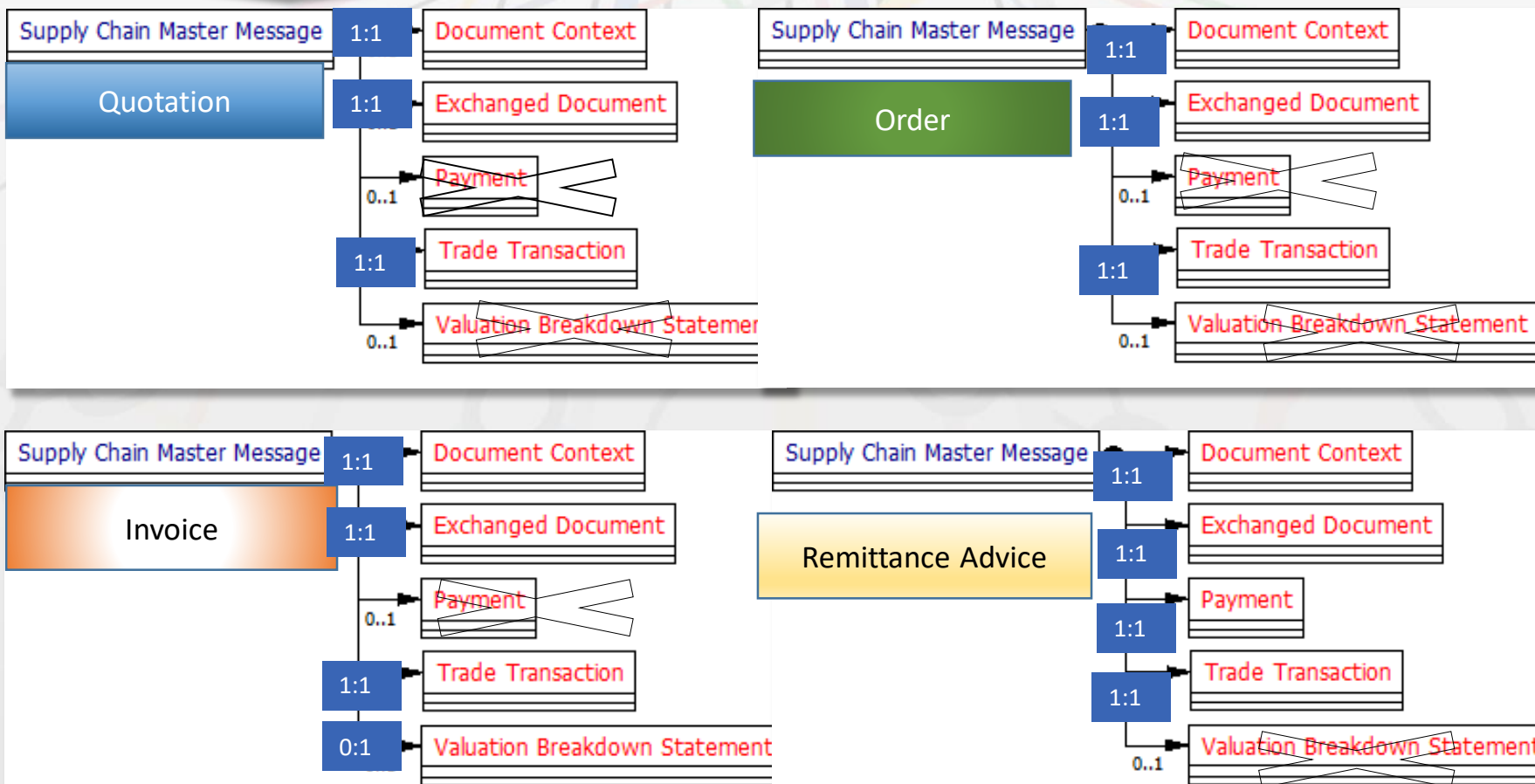
Contextualized master message structures (of the semantic models)

subset/restriction

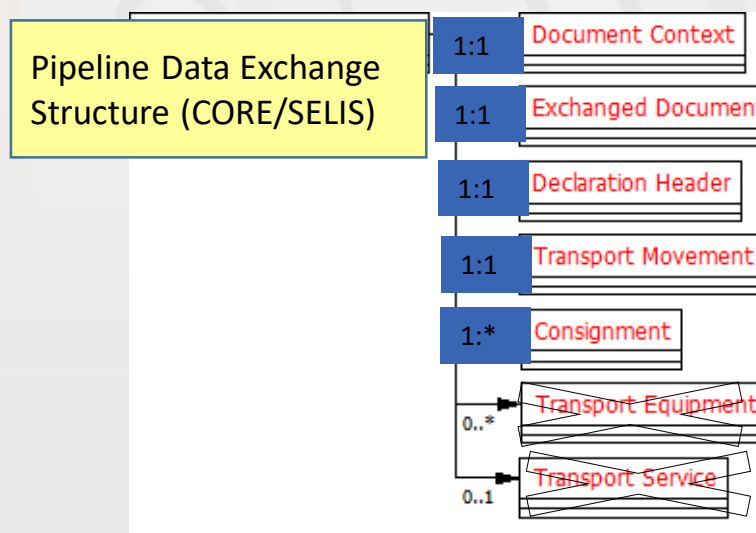
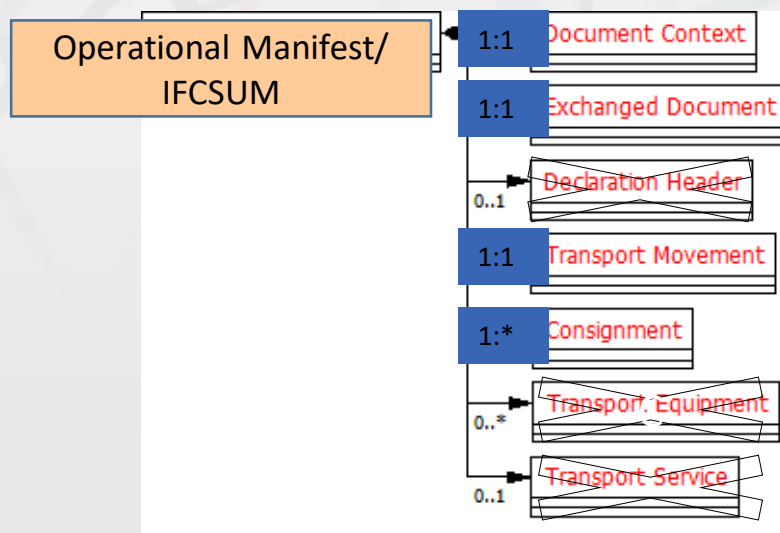
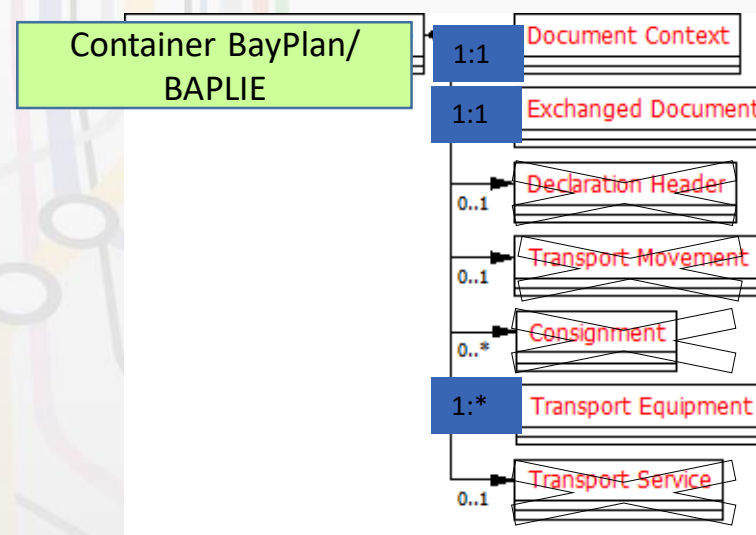
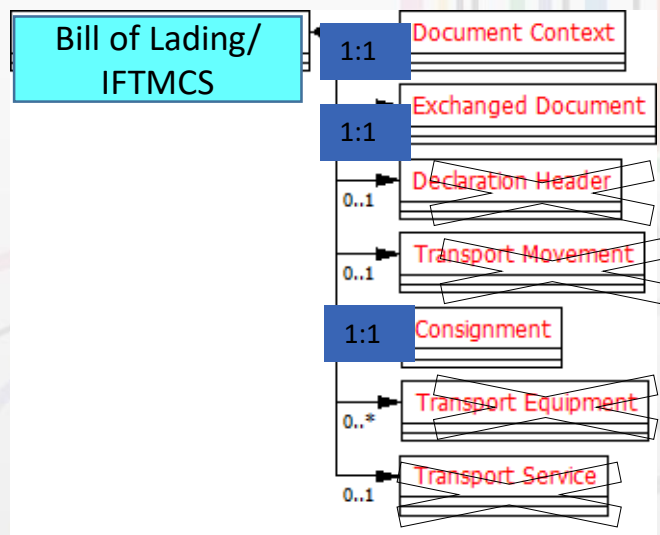


Contextualized messages structures – Supply Chain

Supply Chain BUY PAY master message structure



Contextualized messages structures – Multimodal Transport



Multi Modal Transport Reference Model Status

Public review launched in News section at:


<https://www.unece.org/cefact/>

6 March 2018: UN/CEFACT is pleased to announce the opening of the 60-days Public review of the [Multi Modal Transport Reference Data Model \(MMT RDM\)](#). All eventual comments can be addressed using the prescribed template by **05 May 2018**.

Multimodal Transport Profile Messages

Published:

- eCMR electronic international Road Consignment Note
see <https://www.unece.org/cefact/> News section:

2 March 2018: UN/CEFACT is pleased to announce the publication of its [electronic Road Consignment Note \(eCMR\) standard](#) . This standard provides a free, open specification that will help parties to implement the UNECE Additional Protocol to the CMR Convention concerning the eCMR. For more information, please see the [press release](#).

Future developments:

- Logistics pipeline data exchange structure (PDES) - **white paper available April 18**
- Other modal transport contract messages
- Container handling messages
- Bayplan, Verified Gross Mass and Container Handling messages
- IMO FAL messages
- Consignment tracking messages

For further information:

Multimodal Transport Data Reference Model (MMT RDM)

- Joint Project Leaders: David Hesketh & Anne Sandretto
- Lead Editor: Sue Probert email: sue.probert@dial.pipex.com

Next Transport & Logistics meeting:

UN/CEFACT Forum at UNECE Geneva (April 25th/26th)

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UN/CEFACT Secretariat

- Lance THOMPSON lance.thompson@unece.org