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2 TRANSPORT AND LOGISTICS DOMAIN (T+L)

3 Multi Modal Transport Reference Data Model

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1 **Document History**

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5 References

- MMT & SCRDM Reference Data Model Projects
- International Freight Forwarding BRS
- UN/CEFACT Modelling Methodology (UMM) v2.0
- UN/CEFACT Core Component Technical Specification v2.01 (CCS ISO15000-5)
- UN/CEFACT Core Component Library
- United Nations Trade Data Elements Directory 2005 (UNTDDED/ISO 7372)
- UN/CEFACT CCBDA (Core Component Business Document Assembly) Technical Specification

6 Objectives & Introduction

The objective of this high-level BRS is to describe the requirements for a generic reference data model supporting the trade and transport-related processes involved in the cross border supply chain and covering at a high-level the involved business areas, the main parties and the information involved.

This BRS, provides the framework for any cross-border transport-related business and government domains to specify their own specific information exchange requirements whilst complying with the overall processes and data structures.

Derivative information exchange specifications will be able to be developed to support the requirements of conventional UN/CEFACT data exchange formats for UN aligned paper documents, UN/EDIFACT or UN/XML messages as well as information exchanges to support web-based processes such as those required for Single Windows implementations or data pipeline exchanges.

The objective of this BRS is that it provides overall definitions and concepts related to cross-border supply chains in order that transport-related data exchange documents reusing and based on the adoption of these definitions and concepts can be integrated into software solutions for traders, carriers, freight forwarders, agents, banks, Customs and Other Governmental Authorities etc.

The MMT reference data model project has taken a holistic approach to develop a reference data model based on the UN/CEFACT Core Component Library (CCL) which brings together the data exchange requirements of international multimodal transport processes including related trade, insurance, customs and other regulatory documentary requirements based on the integration of trade facilitation and e-Business best practices.

The UN/CEFACT MMT Reference Data Model is a subset of the Buy/Ship/Pay Reference Data Model and a sister to the Supply Chain Reference Data Model (SCRDM) which is also a subset of the Buy/Ship/Pay Reference Data Model. The MMT and SCRDM Reference Data Models are closely aligned contextualised subsets of the Buy/Ship/Pay Reference Data Model.

All UN/CEFACT Reference Data Models include support for CCBDA compliant data exchange document structures which will be developed in separate projects. Derivation from this reference data model by future projects will ensure that each resultant data document specification will be aligned with the definitions and concepts described in this BRS document. This will enable trading partners to choose the type of document technology that best meets their business requirements when implementing MMT CCBDA compliant data exchange message structures and also provide a migration path for the adoption of future technologies as needed.

87 The UN/CEFACT MMT project is a cross-domain project which is a project of
88 the Transport & Logistics Domain within the SHIP PDA.
89

7 Scope - Positioning MMT in relation to the International Supply Chain Reference Model

This section describes the aspects of the international purchase and supply chain covered by the MMT project and relates them to the UN/CEFACT Reference Model of the International Supply Chain (ISCRM).

The extent and limits of the business processes described in this document have been developed in such a way that it allows application of the MMT Business Standard for implementations of national, regional or modal specific cross-border scenarios. In addition, only the high-level process descriptions are described in this BRS in order that the detailed process analysis of the subset scenarios can provide the detailed process requirements in further subset Business Requirements Specifications (BRSs).

7.1 Scope Comparison

The ISCRM Reference Model covers the processes following the recognition of need by a Customer for a product or service up until the fulfilment of an order by a Supplier and the resulting financial settlement. In addition to the business processes associated with cross-border trading it also incorporates the necessary logistical and cross-border regulatory activities which may be required by Intermediaries and Authorities.

This is illustrated in the following use case diagram.

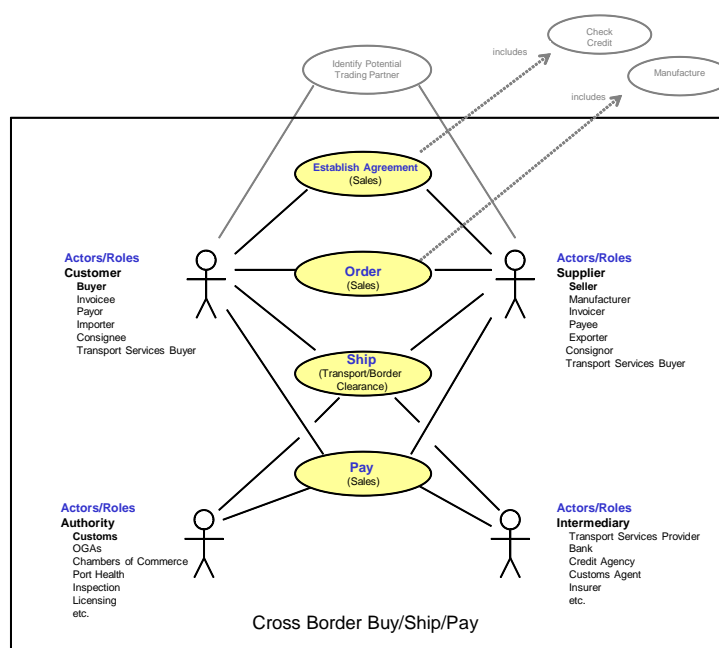


Figure1. Use case Diagram-International Supply Chain Model

7.2 Scenario introduction

The scope of the MMT project can be expressed as a subset of the scope of the UN/CEFACT International Supply Chain Reference Model (ISCRM) covering the transportation of goods and cross-border clearances through to freight invoicing. However, not all aspects of these processes are covered in the initial phase.

The ISCRM covers processes in the four main business areas - Commercial, Logistics, Regulatory and Financial as illustrated in Figures 2 and 3. The MMT project supports the processes across the Logistics (Transport) and Regulatory Areas plus related Commercial processes which are covered by the sister SCRDM Overall BRS.

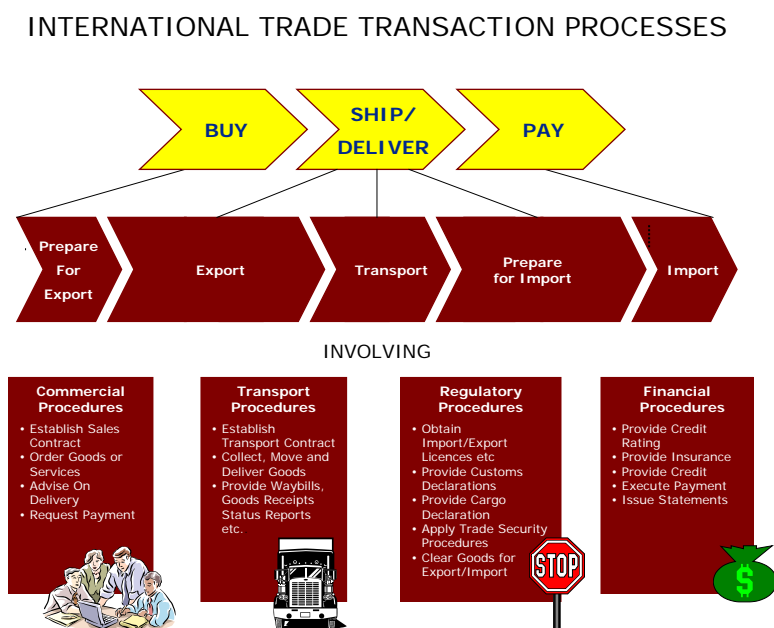


Figure 2. Business processes within the four main Business Areas

International Supply Chain Processes and Procedures

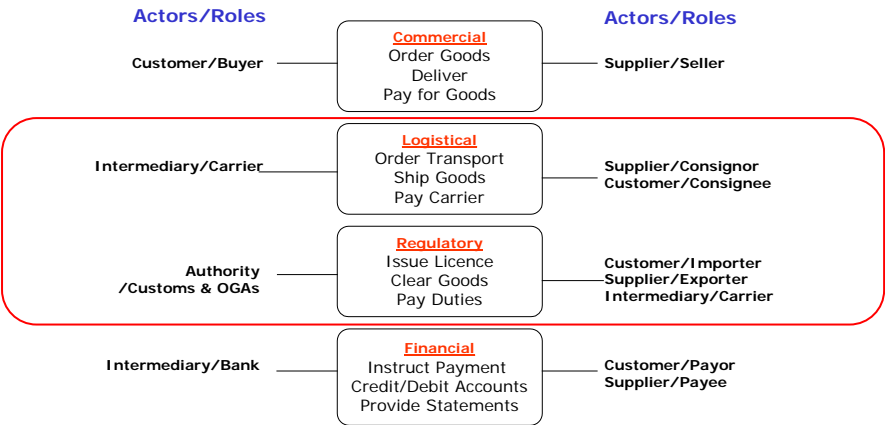


Figure 3. Key Actors/Roles associated with the four main Business Areas

8 Business requirements

8.1 “Business requirements” views

As described in Section 4.2 above the MMT process scope may be viewed as interrelated business areas representing Commercial Transport Contracts, Operational Transport & Logistics, Regulatory and Border Clearance processes together with the corresponding information used both within each business area and which passes between them. The following two diagrams describe these areas in terms of the key governing contracts – the Sales Order Contract and the Transport Service Contract – and these diagrams also show the relationships between the key process areas together with an indication of the documentary requirements.

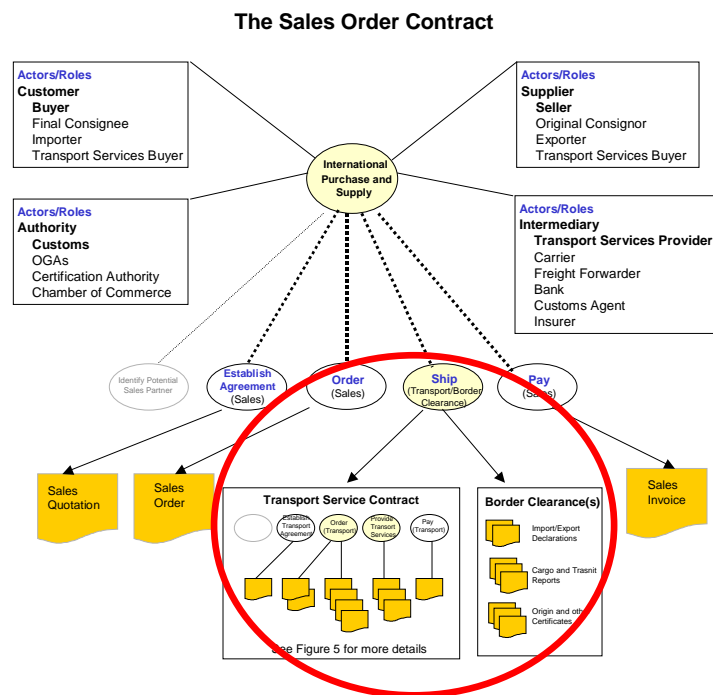


Figure 4. The Sales Order Contract view

Figure 4 shows that the Ship and its related Regulatory and Border Clearance use cases are within the scope of MMT.

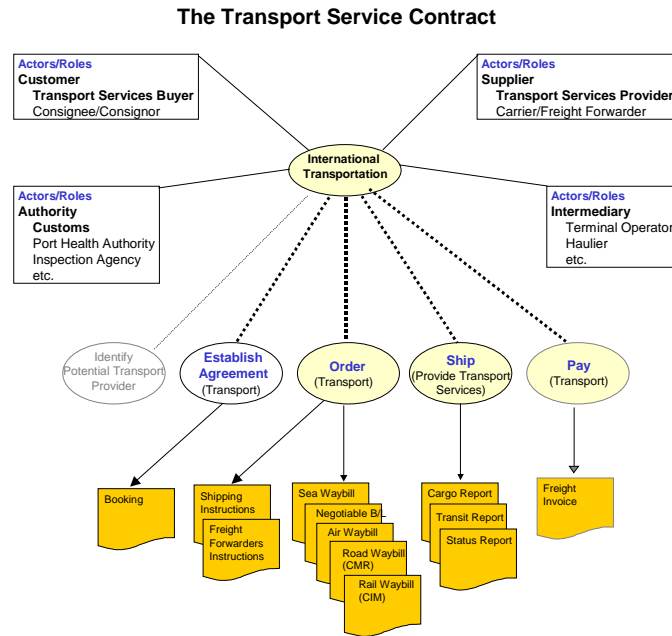


Figure 5. The Transport Service Contract view

Figure 5 shows that, for the Transport Services Contract, the Establish Business Agreement, Order, Ship and Pay use cases are within the scope of MMT. However, only the booking process is included in the Establish Business Agreement use case and only invoicing is included within the Pay use case. The MMT scope therefore includes the transport booking, transport ordering and freight invoicing processes together with the actual transportation and the required border clearance processes.

8.1.1 Commercial Processes

Covers:

- Issuing of Quotation (out of scope of MMT),
- Confirmation of Sales Order (out of scope of MMT),
- Issuing of Despatch Advice and Packing List (out of scope of MMT),
- Sales Invoicing (out of scope of MMT),

8.1.2 Logistical (Transport) Processes

Covers:

- Booking of Cargo Space,
- Issuing of Shipping Instructions,
- Issuing of Transport Contract Document (AirWaybill, etc.),
- Transportation of Goods,
- Requesting and Issuing of Transport Status Reports, Smart Container Device reporting etc.
- Pipeline input data exchanges
- Freight Invoicing

8.1.3 Regulatory Processes

Covers reporting to Customs or appropriate Other Governmental Agencies:

- Import/Export Declarations,
- Cargo and Transit Reports,
- Cross-border Regulatory Data Pipeline
- Certificates of Origin,
- Phytosanitary Certificates,
- Dangerous Goods Declarations including OECD Hazardous Waste notifications
- Pipeline output data exchanges
- etc.

8.1.4 Financial Processes

Covers:

- Documentary Credit procedures (out of scope of MMT),
- Cargo Insurance

8.2 Participating Parties

There are potentially many parties participating in the cross-border international supply chain. The key parties within sales order and transport service contracts and their relationships are indicated in the table below:

Trade/Transport/Customs Party Roles

Sales Order Contract	Transport Service Contract	Definition
Seller	Original Consignor/Original Shipper	The party selling goods or services as stipulated in a Sales Order Contract.
Buyer	Final Consignee/Ultimate Consignee	The party to whom goods are sold services as stipulated in a Sales Order Contract.
	Transport Services Buyer (Consignor or Consignee)	The buyer of transport services as stipulated in a Transport Service Contract.
	Transport Services Provider (Carrier or Freight Forwarder)	The provider i.e. seller of transport services as stipulated in a Transport Service Contract.
	Consignor	The party consigning goods as stipulated in a Transport Service Contract.
	Consignee	The party receiving a consignment of goods as stipulated in a Transport Service Contract.
	Carrier	The party which provides transport services.
	Freight Forwarder	The party undertaking the forwarding of goods by provision of transport, logistics, associated formalities services etc.
	Despatch Party	The party where goods are collected or taken over by the transport services provider. Operational term is 'Pick-up Place'.
	Delivery Party	The party to which goods should be

		delivered by the transport services provider. Operational term is 'Place of Positioning'.
Ship From	Original Despatch Party	The party from whom goods will be or have been originally shipped.
Ship To	Final Delivery Party/Ultimate Delivery Party	The party to whom goods will be or have been ultimately shipped.

Buyer

The party stipulated as the party to whom goods or services are sold. The primary role of the Customer as specified in a Sales Order Contract is the **Buyer** and other possible roles include the Final/Ultimate Consignee, Transport Services Buyer, Importer and Invoicee.

Importer

The party who makes, or on whose behalf a Customs clearing agent or other authorized person makes, an import declaration. This may include a person who has possession of the goods or to whom the goods are consigned.

Invoicee

The party to whom an invoice is issued.

Seller

The party stipulated as the supplier of goods or services. The primary role of the Supplier as specified in the Sales Order Contract is the Seller and other possible roles include the Original Consignor/Shipper, Transport Services Buyer, Exporter, and Invoice Issuer.

Transport Service Buyer

The party stipulated as the buyer of transport services in a Transport Service Contract. The Transport Service Buyer role may be performed by either the Consignor or the Consignee depending on the Terms of Delivery specified in the associated Sales Order Contract.

Exporter

The party who makes, or on whose behalf the export declaration is made, and who is the owner of the goods or has similar rights of disposal over them at the time when the declaration is accepted.

Invoice issuer

The party who issues an invoice.

Intermediary

Within the international purchase and supply chain, an Intermediary can be any party who provides services to support either the Sales Order Contract or the Transport Service Contract. The possible roles of an Intermediary include the Transport Service Provider (e.g. Carrier, Freight Forwarder), Financial Institution or Customs Agent etc.

Authority

An Authority provides authorisation associated with any conventions or regulations applicable to the trading of goods within the international purchase

and supply chain. The possible roles of an Authority include border control authorities (e.g. Customs), permit/licensing issuing authorities and port authorities etc.

8.3 Business Entities and Business Rules

Throughout the international purchase and supply chain various types of information are exchanged. As explained above, the UN/CEFACT Buy/Ship/Pay Reference Data Model provides a cross-domain framework for the derivation of generic documents for the exchange of information between the Customers, Suppliers, Intermediaries and Authorities no matter which countries or modes of transport may be involved. It is very important therefore, that the Buy/Ship/Pay, SCRDM and MMT reference data models use common generic terms for the involved parties and for the business information entities contained within it.

The MMT CCTS Data Modelling includes full referencing between its business information entities and the UNTDED v 2005 (United Trade Data Elements Directory).

The following diagram and accompanying text describe the relationships between the highest-level Business Information Entities reused across the UN/CEFACT Buy/Ship/Pay, SCRDM and MMT Reference Data Models.

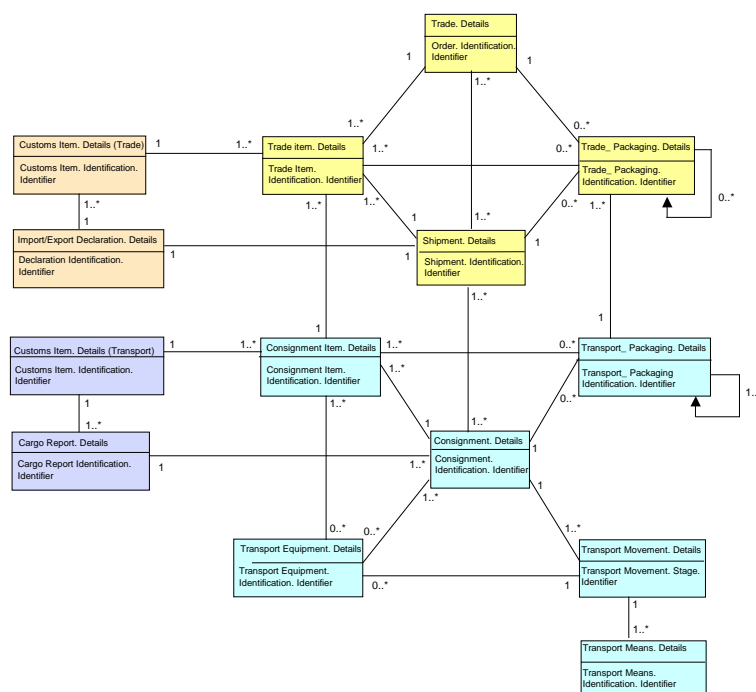


Figure 6. High-Level Entity Relationships

Sales Order

A sales order is a contractual document by means of which a buyer initiates a transaction with a seller involving the supply of goods or services as specified, according to conditions which are either set out in a formal quotation or otherwise known to the buyer. The information included in the cross-border Order document covers the commercial information between the Buyer and the Seller relating to the Sales Order and also the additional transport and regulatory information required by intermediaries and authorities.

- A Sales Order can only have one Buyer
- A Sales Order can only have one Seller
- A Sales Order is made up of one or more Trade Items

Trade Item

A Trade Item describes the lowest level of "commercial" information in a Sales Order between the Buyer and the Seller. Each Trade Item will usually be associated with a particular product and will include details such as product code, quantity and unit price etc. In the case of cross-border orders each product will also have an associated Customs tariff code.

- A single Trade Item cannot be split across Shipments
- Trade Items are aggregated by Tariff Code/Packaging into Consignment Items

Shipment

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 (Transport Service Order)

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
- A Consignment is made up of one or more Customs Items for reporting to Customs
- A Consignment can have one or more Customs UCRs

Consignment Item

A separately identifiable quantity of products grouped together by Customs tariff code or packaging for transport purposes. A Consignment Item is the lowest level of information within a Consignment. In the case of cross-border consignments each Consignment Item must have only one associated Customs tariff code in order to satisfy Customs requirements.

- A Consignment Item can contain one or more Trade Items
- A Consignment Item can only have one associated Customs tariff code

Import/Export Customs Declaration

Documents by which consignments of goods are declared for either export or import Customs clearance, conforming to the layout key set out at Appendix I to Annex C.1 concerning outright exportation to the Kyoto convention (WCO). A Customs tariff code must be provided for each Consignment Item within a consignment. The Customs tariff code, also known as the commodity code, specifies the goods classification under the Harmonised Commodity Description and Coding System of the World Customs Organisation (WCO).

- An Export or Import Declaration can contain one or more Customs Items
- An Export or Import Declaration can have only one UCR

Customs Item

A Customs Item is a Consignment Item, a Trade Item or an aggregation of Consignment or Trade Items with distinct Customs tariff code for reporting to Customs.

- A Customs Item can only have one associated Customs tariff code
- A Customs Item can refer to one or more Trade Items
- Each reported Consignment may contain one or more separately reported Customs Items

Customs Cargo Report

Documents by which movements of goods are reported to Customs at a place of export, import or transit.

- A Customs Cargo Report reports on one Transport Movement of goods
- A Customs Cargo Report reports on one or more Consignments