UN/CEFACT – SHIP/MMT-RDM – P1024

UNITED NATIONS
CENTRE FOR TRADE FACILITATION AND ELECTRONIC BUSINESS (UN/CEFACT)
1   SHIP PROGRAMME DEVELOPMENT AREA (SHIP-PDA)
2   TRANSPORT AND LOGISTICS DOMAIN (T+L)

3   **Multi Modal Transport Reference Data Model**

SOURCE: MMT Project Team
ACTION: Draft for Public Review

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1 Document History

2

3	February 2015	Version 1.0 developed from cf_09_18E - MMT and BSP BRS
4		2007
5	March 2016	Updated for internal project review

4 Table of Contents

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 (UNTDED/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

90 # 7 Scope - Positioning MMT in relation to the
91 International Supply Chain Reference
92 Model

93
94 This section describes the aspects of the international purchase and supply
95 chain covered by the MMT project and relates them to the UN/CEFACT
96 Reference Model of the International Supply Chain (ISCRM).

97
98 The extent and limits of the business processes described in this document
99 have been developed in such as way that it allows application of the MMT
100 Business Standard for implementations of national, regional or modal specific
101 cross-border scenarios. In addition, only the high-level process descriptions
102 are described in this BRS in order that the detailed process analysis of the
103 subset scenarios can provide the detailed process requirements in further
104 subset Business Requirements Specifications (BRSs).
105

106 ## 7.1 Scope Comparison

107
108 The ISCRM Reference Model covers the processes following the recognition of
109 need by a Customer for a product or service up until the fulfilment of an order
110 by a Supplier and the resulting financial settlement. In addition to the business
111 processes associated with cross-border trading it also incorporates the
112 necessary logistical and cross-border regulatory activities which may be
113 required by Intermediaries and Authorities.
114
115 This is illustrated in the following use case diagram.
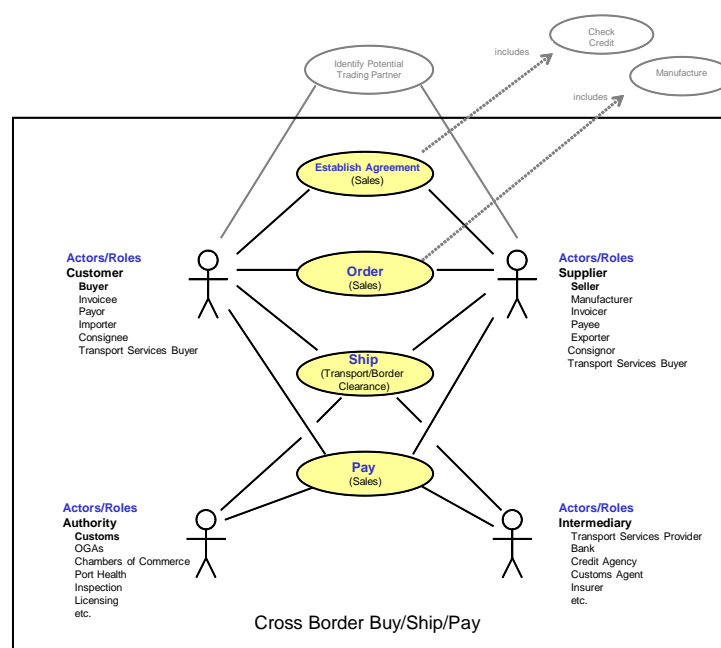
116
117 *Figure1. Use case Diagram-International Supply Chain Model*

118

119 *7.2 Scenario introduction*

120

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

126

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

INTERNATIONAL TRADE TRANSACTION PROCESSES
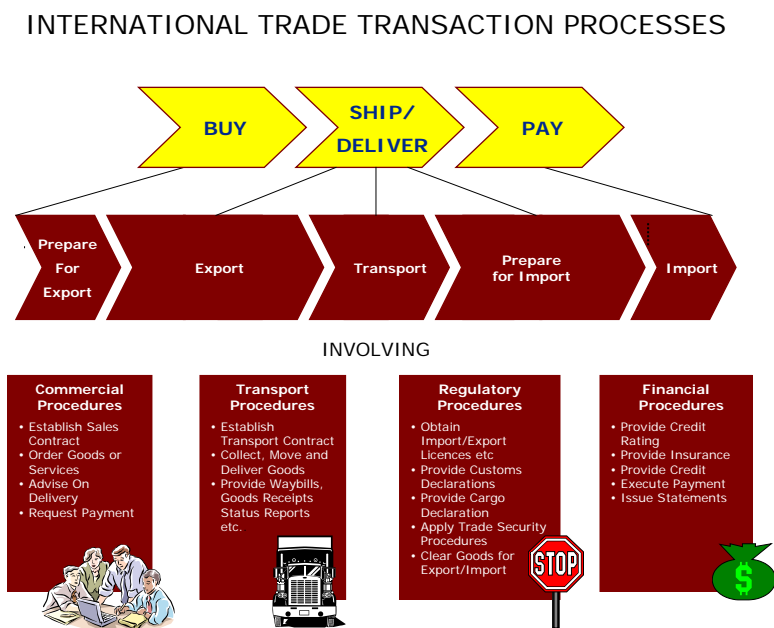
132

133 *Figure 2. Business processes within the four main Business Areas*

International Supply Chain Processes and Procedures

134

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

136 # 8 Business requirements

137 ## 8.1 "Business requirements" views

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

The Sales Order Contract

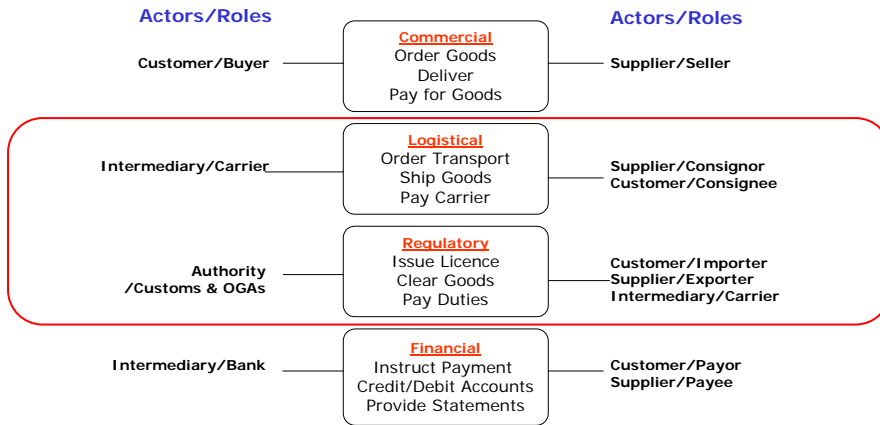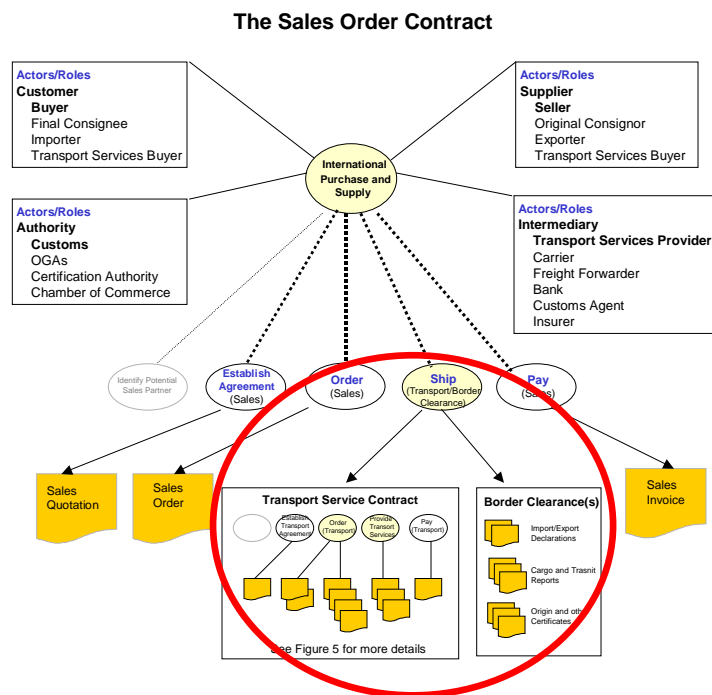| Actors/Roles	Actors/Roles
Customer	**Supplier**
Buyer	**Seller**
Final Consignee	Original Consignor
Importer	Exporter
Transport Services Buyer	Transport Services Buyer

International Purchase and Supply

Actors/Roles	Actors/Roles
Authority	**Intermediary**
Customs	**Transport Services Provider**
OGAs	Carrier
Certification Authority	Freight Forwarder
Chamber of Commerce	Bank
	Customs Agent
	Insurer

Identify Potential Sales Partner · **Establish Agreement** (Sales) · **Order** (Sales) · **Ship** (Transport/Border Clearance) · **Pay** (Sales)

Sales Quotation · Sales Order

Transport Service Contract
Establish Transport Agreement · Order (Transport) · Provide Transport Services · Pay (Transport)
See Figure 5 for more details

Border Clearance(s)
Import/Export Declarations
Cargo and Trasnit Reports
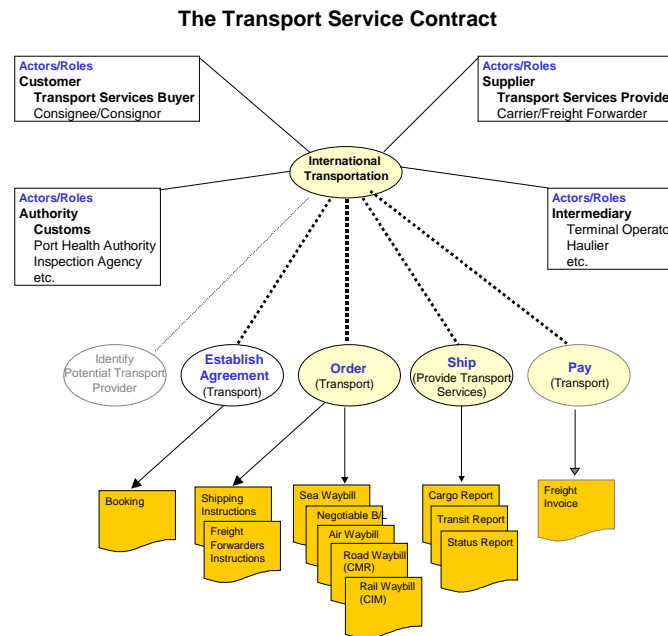Origin and other Certificates

Sales Invoice

147

148 *Figure 4. The Sales Order Contract view*

149

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

152

The Transport Service Contract

153

Figure 5. The Transport Service Contract view

155

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

8.1.1 Commercial Processes

164 Covers:
165 • Issuing of Quotation (out of scope of MMT),
166 • Confirmation of Sales Order (out of scope of MMT),
167 • Issuing of Despatch Advice and Packing List (out of scope of MMT),
168 • Sales Invoicing (out of scope of MMT),
169

8.1.2 Logistical (Transport) Processes

171 Covers:
172 • Booking of Cargo Space,
173 • Issuing of Shipping Instructions,
174 • Issuing of Transport Contract Document (AirWaybill, etc.),
175 • Transportation of Goods,
176 • Requesting and Issuing of Transport Status Reports, Smart Container
177   Device reporting etc.
178 • Pipeline input data exchanges
179 • Freight Invoicing
180

181 ### 8.1.3 Regulatory Processes
182 Covers reporting to Customs or appropriate Other Governmental Agencies:
183 - Import/Export Declarations,
184 - Cargo and Transit Reports,
185 - Cross-border Regulatory Data Pipeline
186 - Certificates of Origin,
187 - Phytosanitary Certificates,
188 - Dangerous Goods Declarations including OECD Hazardous Waste
189 notifications
190 - Pipeline output data exchanges
191 - etc.
192

193 ### 8.1.4 Financial Processes
194 Covers:
195 - Documentary Credit procedures (out of scope of MMT),
196 - Cargo Insurance
197

198 ## *8.2 Participating Parties*

199
200 There are potentially many parties participating in the cross-border
201 international supply chain. The key parties within sales order and transport
202 service contracts and their relationships are indicated in the table below:
203
204 **Trade/Transport/Customs Party Roles**
205

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.

206
207

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

213

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

218

219 **Invoicee**
220 The party to whom an invoice is issued.

221

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

227

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

233

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

238

239 **Invoice issuer**
240 The party who issues an invoice.

241

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

248

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

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

8.3 Business Entities and Business Rules

256

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

266

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

270

271 The following diagram and accompanying text describe the relationships
272 between the highest-level Business Information Entities reused across the
273 UN/CEFACT Buy/Ship/Pay, SCRDM and MMT Reference Data Models.
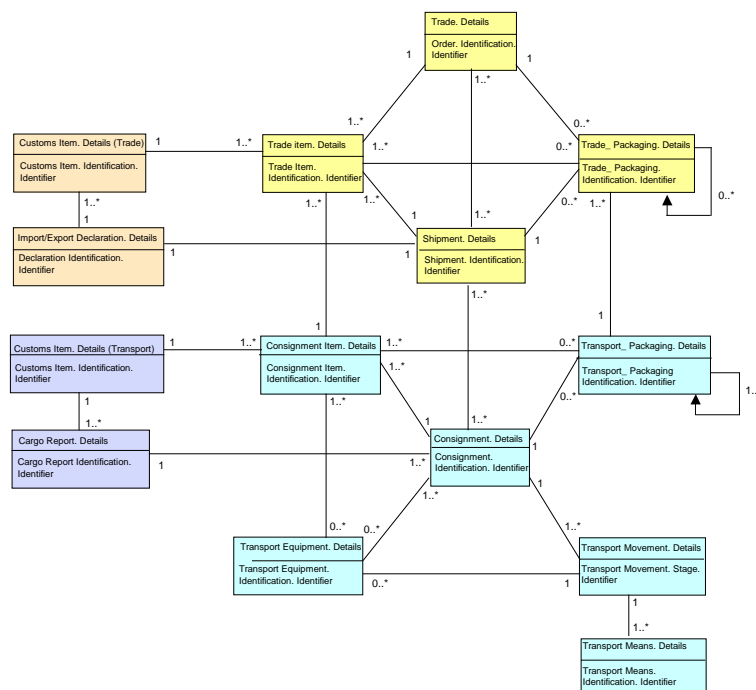
274
275

276 *Figure 6. High-Level Entity Relationships*

277
278 **Sales Order**
279

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

331   • A Consignment can be made up of some or all Trade Items (aggregated
332   into Consignment Items) from one or more Shipments
333   • A Consignment is made up of one or more Customs Items for reporting to
334   Customs
335   • A Consignment can have one or more Customs UCRs
336

337 **Consignment Item**

338

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

344

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

347

348 **Import/Export Customs Declaration**

349

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

357

358   • An Export or Import Declaration can contain one or more Customs Items
359   • An Export or Import Declaration can have only one UCR

360

361 **Customs Item**

362

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

366

367   • A Customs Item can only have one associated Customs tariff code
368   • A Customs Item can refer to one or more Trade Items
369   • Each reported Consignment may contain one or more separately reported
370   Customs Items

371

372 **Customs Cargo Report**

373

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

376

377   • A Customs Cargo Report reports on one Transport Movement of goods
378   • A Customs Cargo Report reports on one or more Consignments

379