UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

UNITED NATIONS CENTRE FOR TRADE FACILITATION
AND ELECTRONIC BUSINESS (UN/CEFACT

BUSINESS REQUIREMENTS SPECIFICATION
(BRS)

International Forwarding & Transport
Version 1.0

Date: 8 April 2008

UN/CEFACT Forum Mexico City

TBG3 Transport Group

C O N T E N T S

1. Preamble

This International Forwarding & Transport Business Requirements Specification is developed by the ITIGG subgroup of UN/CEFACT's International Transport Work Group (TBG3) and it is based on international standards and on best business practice.

- TBG3 Terms of Ref
- TBG3 & ITIGG IFTM UN/EDIFACT history
- International Supply Chain Reference Model
- UMM & CCTS compliant with BRS 1.5

2. References

- The International Supply Chain Reference Model version 0.8
  UN/CEFACT

- United Nations Trade Data Elements Directory edition 2005 (ISO 7372)
  International Organization for Standardization (ISO TC154)

- ITIGG IFTM Principles and Rules 2000
  UN/CEFACT

- IFCSUM and the IFTM set of UN/EDIFACT UNSMs (IFTMBP, IFTMBF, IFTMBC, IFTMIN, IFTMCA, IFTMCS, IFTMAN)
  UN/CEFACT

- United Nations electronic Trade Documents version 2.0 in preparation (UNeDocs) Project
  UN/CEFACT

- United Nations Layout Key (UNLK) (ISO 6422)
  United Nations Centre for Trade Facilitation and electronic Business (UN/CEFACT)

- UN/CEFACT Modelling Methodology N090 Rev.10
  UN/CEFACT

- UN/CEFACT Core Components Technical Specification v2.01 (ISO TS 15000-5)
  UN/CEFACT

3. Objectives

To standardise the business processes, the business transactions and the information entities for the multimodal international transport and logistics domain by producing a syntax neutral business process model and a corresponding data model (class diagram) covering forwarding and transportation, incorporating current and developing standards and positioning this within the International Supply Chain Reference Model.

The business processes for forwarding and transportation consist of cargo booking, transport ordering including consignment instructions, despatch of goods, status reporting, cargo consolidation and deconsolidation.

4. Scope

This section describes the extent and limits of the forwarding and transportation related business processes within the international supply chain being described in this document.

The scope of The International Supply Chain Reference Model is:

'to cover all stages following the recognition of need by a Customer for a product or service to the fulfilment of an order by a Supplier and the resulting financial settlement. It incorporates any necessary activities carried out by Intermediaries and Authorities'.

The scope of the forwarding and transport BRS can be expressed as a subset of the scope of The International Supply Chain Reference Model covering the forwarding and transportation of goods from any origin to any destination regardless of route or prevailing commercial practice. The processes include cargo booking, transport ordering including consignment instructions, despatch of goods, status reporting, cargo consolidation and deconsolidation.

The business information entities described in the class diagram have been developed such that they can be reusable across all industries and modes of transport.

- It is recommended that each mode of transport and or each industry sector should base the development of their more specific forwarding and transportation BRS on this multimodal multi-sectoral BRS in order to satisfy their particular business requirements.
- It is also strongly recommended that this BRS should be used as a key reference point during the development of any transport related BRS especially the data model (class diagram).

Categories	Description and Values
Business Process	International Forwarding and Transportation
Product Classification	Provision of transport and transport related services to all industry sectors
Industry Classification	Domestic and international multimodal transport
Geopolitical	Global
Official Constraint	International cargo transport conventions & regulatory instruments
Business Process Role	Transport Services Seller, Transport Services Buyer, Consignor, Consignee, Carrier, Pick-up Party, Delivery Party
Supporting Role	Seller, Buyer, Freight Forwarder, Carrier Agent, Customs, Customs Broker, Ship From Party, Ship To Party
System Capabilities	UNLK physical restrictions for paper convention requirements

Table 1

5. Business Requirements
5.1 Business Requirements Views

The BRS for International Forwarding and Transport is included in the 'Ship' part of the International Supply Chain Model (see below).
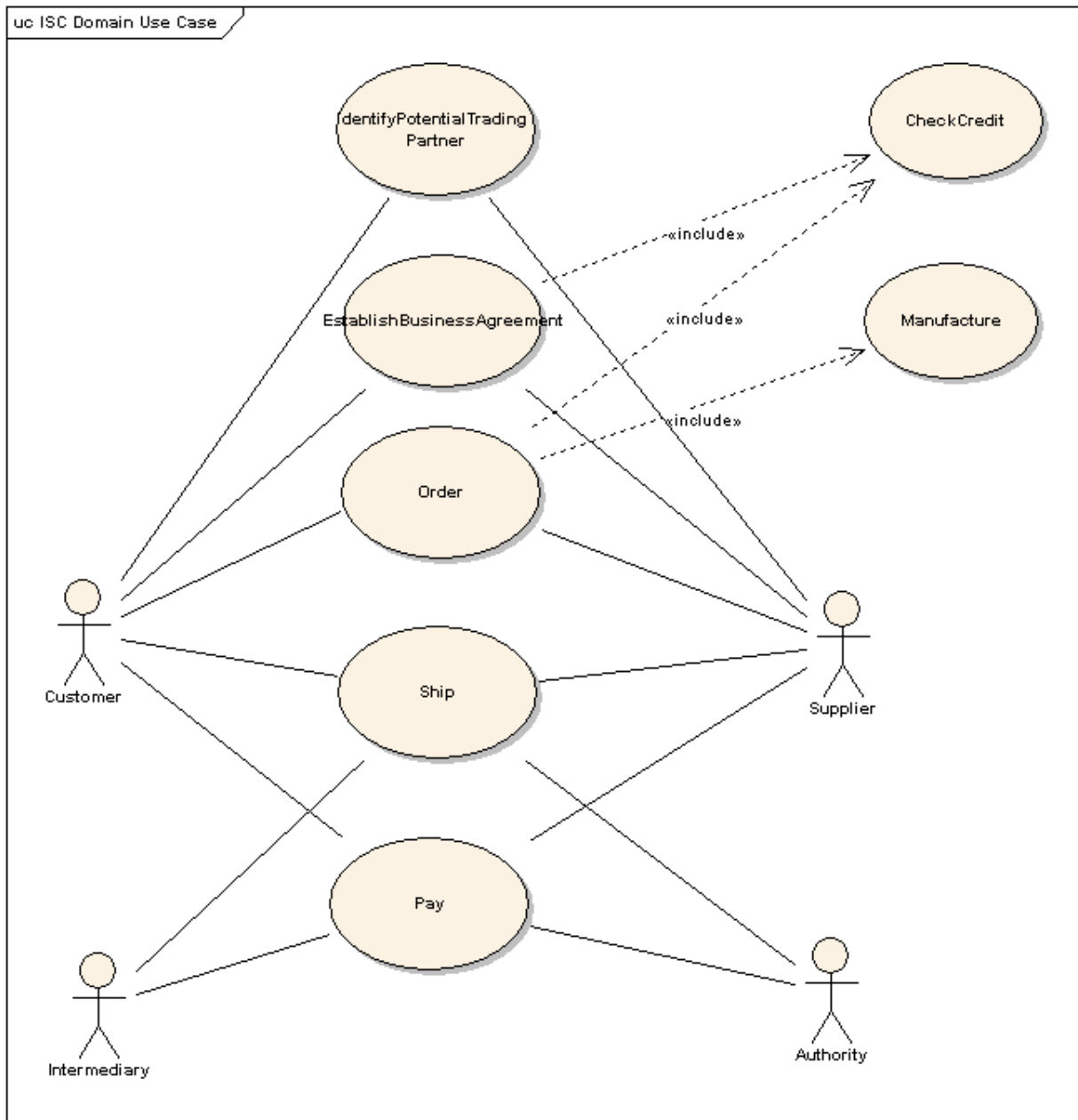
Use Case Diagram International Supply Chain Model

Figure 1

Figure 1 illustrates the scope of the forwarding and transport processes by overlaying it upon the Use Case Diagram - Purchase & Supply Internationally diagram in The Reference Model. This diagram shows that only the Ship use case is within the scope of this BRS.

In International Forwarding and Transport the Customer can have the roles of Consignee and/or Transport Services Buyer. The Supplier can have the roles of Consignor and/or Transport Services Buyer.

5.1.1 Business Process Elaboration

Overall Use Case International Forwarding and Transport:
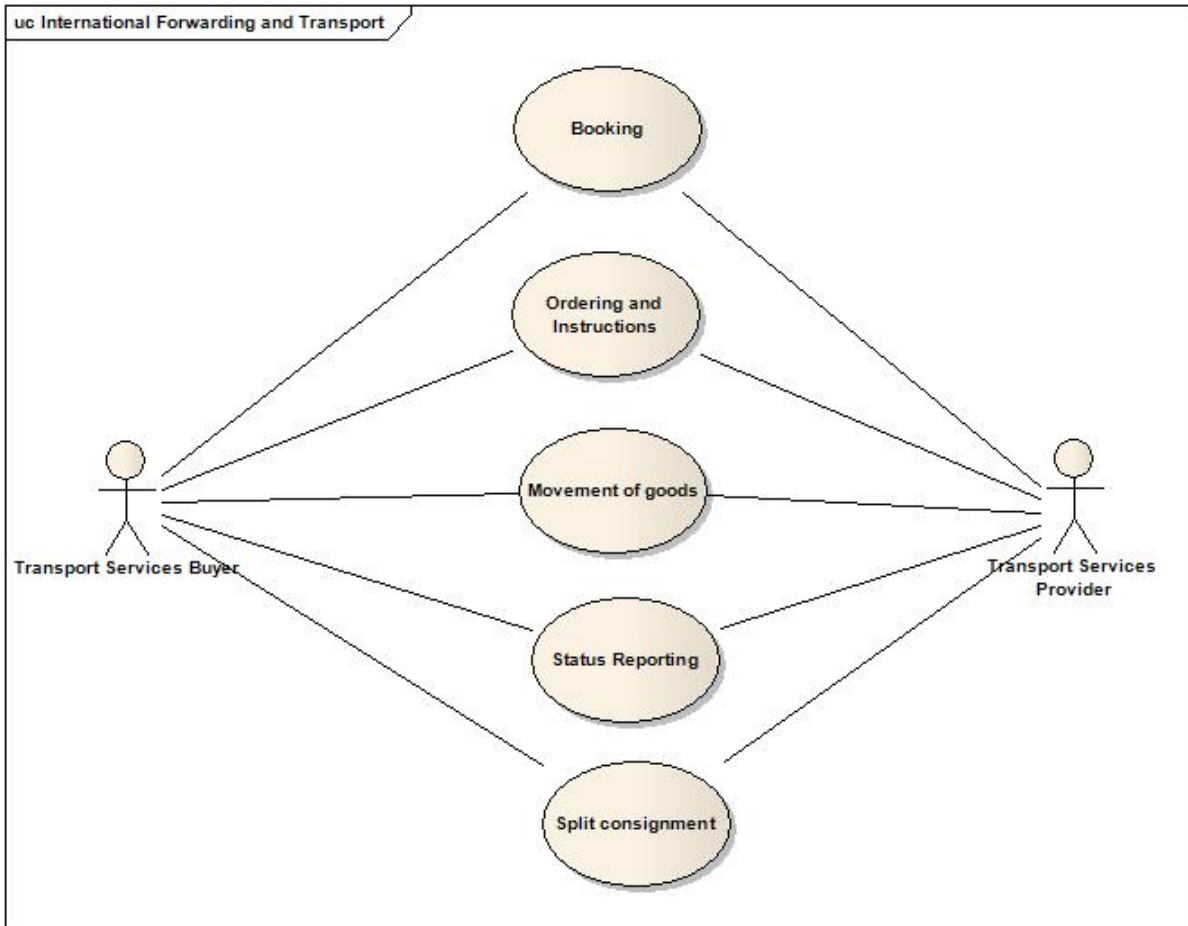
Between Transport Services Buyer and Transport Services Provider a number of processes can be performed:
- Booking space on a means of transport and booking a consignment
- Ordering transport and providing detailed instructions
- Moving the goods from consignor to consignee
- Reporting the status of the consignment
- Reporting the eventual splitting of the consignment

5.1.1.1 Use Cases - Booking (space booking and consignment booking)
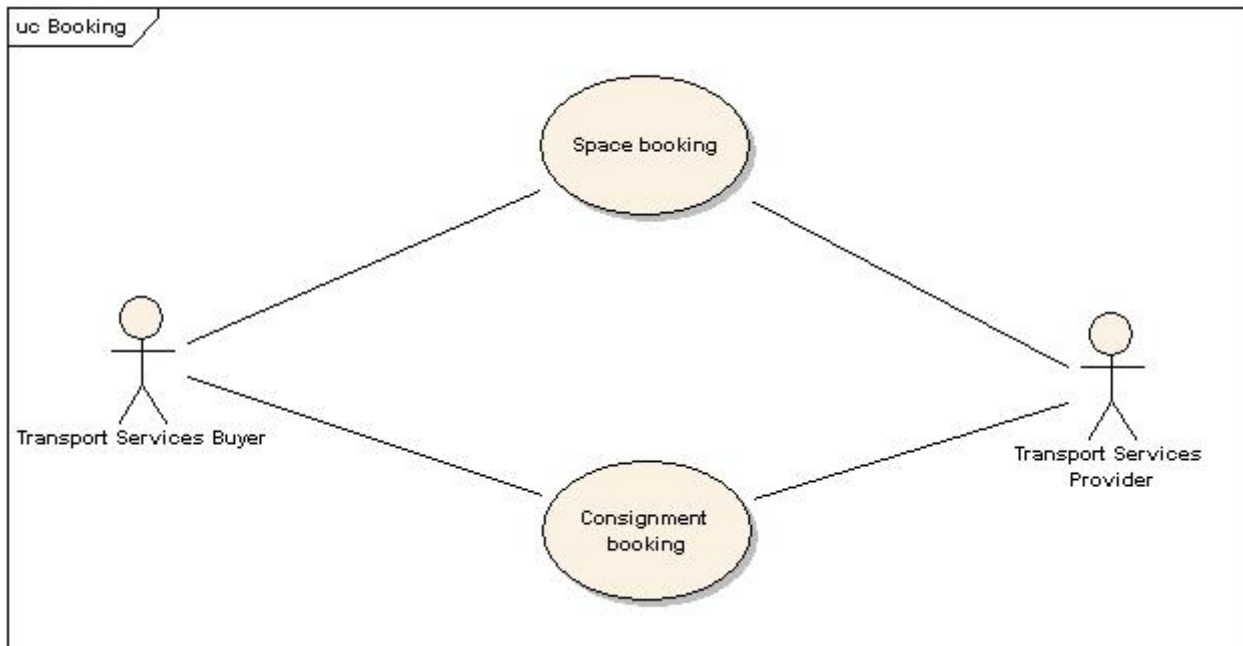
Bookings can be made for space on a means of transport and for a specific consignment.
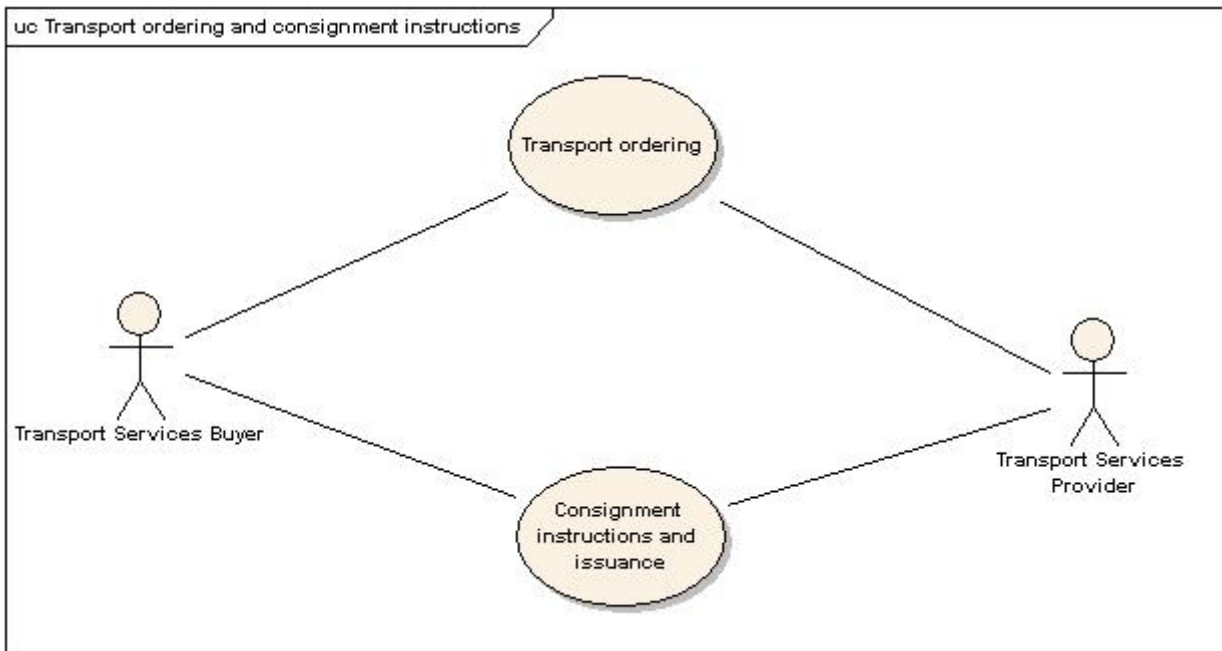
5.1.1.1.1 Use Case Description – Space Booking

Business Process Name	Space Booking
Identifier	
Actors	Transport Service Buyer Transport Service Provider (Seller of Transport Service)
Description	The Transport Service Buyer requests the Transport Service Provider to reserve space on a means of transport for one or more consignments to be transported together.
Pre-condition	The Transport Service Buyer has one or more consignments to be transported and knows the mode of transport and the type of means of transport at which it needs to be transported on. The Transport Service Provider has space available on a means of transport. The Transport Service Buyer and the Transport Service Provider have a relationship.
Post-conditions	The Transport Service Buyer and Transport Service Provider have or have not come into a commercial agreement on the requested space booking. An agreement has been made between the Transport Service Buyer and the Transport Service Provider on the next steps (to be further defined)
Scenario	The Transport Service Buyer sends a request to the Transport Service provider to reserve space on a means of transport for one or more consignments to be transported together. The Transport Service Provider checks the availability of the requested space booking on the means of transport and either confirms the space booking and gives additional information or does not accept the space booking (and possibly supplies an option to the space booking). The Transport Service Buyer either accepts (which may be implicit) the reply to the space booking or not.
Remarks	

5.1.1.1.2. Use Case Description – Consignment Booking

Business Process Name	Consignment Booking
Identifier	
Actors	Transport Service Buyer Transport Service Provider
Description	The Transport Service Buyer requests the Transport Service Provider to book the transport of a specific consignment.
Pre-condition	The Transport Service Buyer has a consignment to be transported and knows the mode of transport and the type of means of transport required for its transportation. The Transport Service Provider has space available on a means of transport. The Transport Service Buyer and the Transport Service Provider have a relationship.
Post-conditions	The Transport Service Buyer and Transport Service Provider have or have not come to a commercial agreement on the requested consignment booking. An agreement has been made between the Transport Service Buyer and the Transport Service Provider as to whether or not final transport instructions and/or transport arrangements are required and what will be the next steps to take in either case.
Scenario	The Transport Service Buyer sends a request to the Transport Service provider to make a booking for a consignment. The Transport Service Provider checks the availability of space for the requested booking on the means of transport and either confirms the consignment booking and gives additional information or does not accept the consignment booking (and possibly supplies an option to the consignment booking). The Transport Service Buyer either accepts (which may be implicit) the reply to the consignment booking or not.
Remarks	

5.1.1.2.1. Use Case Description – Transport Ordering

Business Process Name	Transport Ordering
Identifier	
Actors	Transport Service Buyer Transport Service Provider
Description	The Transport Service Buyer prepares the order to transport a consignment and submits it to the Transport Service Provider, who may accept or reject it.
Pre-condition	The Transport Service Buyer has a consignment to be transported and knows the mode of transport and the type of means of transport required for its transportation. The consignment has been or will be loaded into one or more specific pieces of transport equipment. The Transport Service Provider has space available on a specific means of transport. The Transport Service Buyer and the Transport Service Provider have a relationship.
Post-conditions	A transport contract is finalised between the Transport Service Buyer and the Transport Service Provider, on acceptance of the Transport Order.
Scenario	The Transport Service Buyer prepares a Transport Order and sends it to the Transport Service Provider. The Transport Service Provider accepts or rejects the Transport Order.
Remarks	On acceptance of the Transport Order a waybill is prepared in the Consignment Instructions process.

5.1.1.2.2. Use case description – Consignment instructions Issuance of waybill

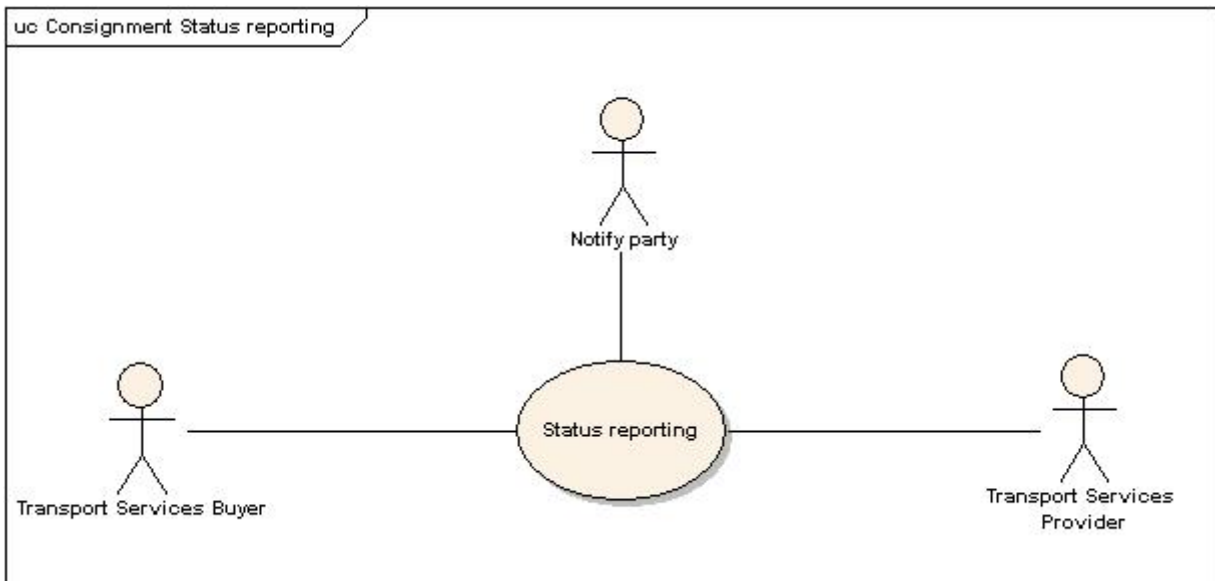| Business process name	Use Case - Consignment Instructions Issuance of waybill
Identifier	
Actors	Transport Service Buyer Transport Service Provider
Description	The Transport Service Provider prepares and when applicable issues a waybill for the transport of a consignment. (In a paper environment the waybill may be the signed original Transport Order from the Transport Service Buyer).
Pre-condition	The Transport Service Buyer has a consignment to be transported and knows the mode of transport and the type of means of transport required for its transportation. The consignment has been or will be loaded into one or more specific pieces of transport equipment. The Transport Service Provider has space available on a specific means of transport. The Transport Service Buyer and the Transport Service Provider have a relationship. The Transport Service Buyer has sent a Transport Order to the Transport Service Provider.
Post-conditions	A waybill is prepared and when applicable issued by the Transport Service Provider to be used during the movement of the goods.
Scenario	The Transport Service Buyer provides the detailed instructions and either the Transport Service Provider or the Transport Service Buyer issues a waybill for the transport of a consignment.
Remarks	The waybill varies per mode of transport for example Bill of Lading or Seawaybill (Maritime), Master Air Waybill (Air), CMR (Road), CIM (Rail), House Waybills (monoconsignment).

5.1.1.3. Use case - Movement of Goods

Either the Consignor or the Consignee can be the Transport Services Buyer. In the movement of goods the main roles are Consignor and Consignee (sender and receiver of the goods).

Use case description

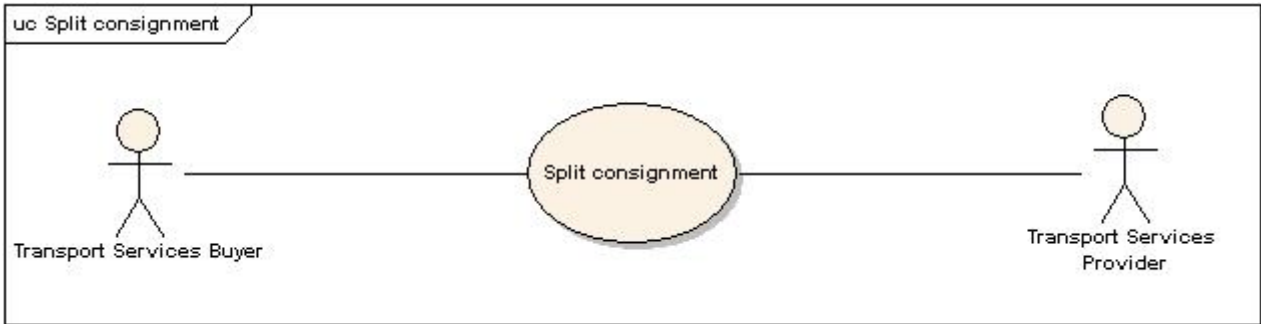| Business Process Name	Movement of Goods
Identifier	
Actors	Transport Service Provider, Consignor, Consignee
Description	The Transport Service Provider picks up or receives the consignment from the Consignor, moves it and delivers it to the Consignee.
Pre-conditions	The Transport Service Provider possesses a waybill and other required documentation for the consignment. The consignment is available to be transported from the Consignor.
Post-conditions	The consignment is delivered to the Consignee. The Proof of Delivery is collected from the Consignee by the Transport Service Provider.
Scenario	The Transport Service Provider picks-up or receives the consignment from the Consignor, takes over the consignment from the Consignor and if necessary receives additional documentation to be transported with the consignment. The Consignor informs the Consignee of the despatch of the consignment. The Transport Service Provider moves the consignment, delivers it to the Consignee and collects the Proof of Delivery from the Consignee. The Consignee informs the Consignor of the receipt of the consignment.
Remarks	Additional documentation may be sent electronically between Consignor and Transport Service Provider and or Consignee.

5.1.1.4. Use Case – Consignment Status Reporting

Use Case Description

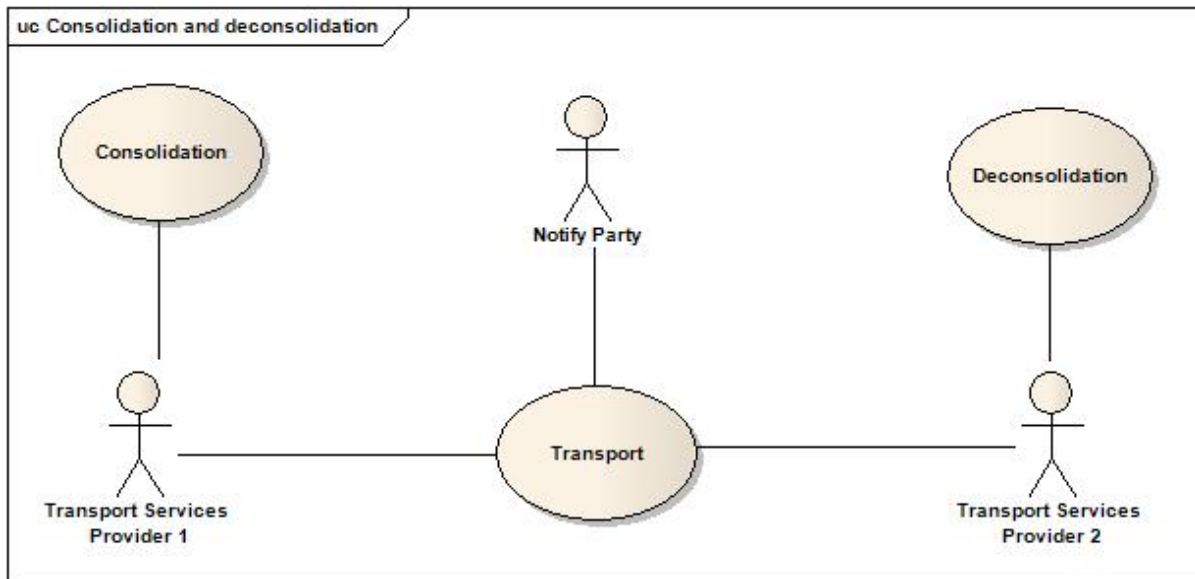| Business Process Name	Consignment Status Reporting
Identifier	
Actors	Transport Service Buyer Transport Service Provider Notify party (not being the Transport Service Buyer)
Description	The status of the movement of the consignment is requested by the Transport Service Buyer or the Notify party, and reported by the Transport Service Provider
Pre-condition	A Transport Contract exists between the Transport Service Buyer and the Transport Service Provider. The Transport Service Provider will pick-up or receive, move and deliver the consignment. The status of the consignment during its movement is requested to be reported.
Post-conditions	The consignment has been delivered. All requested statuses of the consignment during its movement have been reported.
Scenario	The Transport Service Buyer requests the Transport Service Provider, either through an individual specific request or through an agreed status reporting procedure, to report on the status of the consignment at specified stages. The Transport Service Provider reports to the Transport Service Buyer on the status of the consignment as requested. The Transport Service Provider may also report to the Notify Party and/or the Consignee of the status of the consignment.
Remarks	The Transport Service Buyer may be the Consignor or the Consignee.

5.1.1.5. Use Case - Split Consignment

Use Case Description

| Business Process Name	Split consignment
Identifier	Split Consignment
Actors	Transport Service Buyer Transport Service Provider
Description	The Transport Service Providers splits a consignment for the purpose of transportation and may inform the Transport Service Buyer.
Pre-condition	The consignment needs splitting for operational purposes of the Transport Service Provider.
Post-conditions	The consignment may be reconsolidated by the Transport Service Provider for delivery purposes.
Scenario	The Transport Service Buyer makes the consignment available to the Transport Service Provider. The Transport Service Providers splits the consignment across multiple pieces of transport equipment and or multiple means of transport for the purpose of transportation. The consignment is moved on multiple means of transport to the location for consolidation. The consignment may be reconsolidated by the Transport Service Provider for delivery purposes.
Remarks	

5.1.1.6. Use Case - Consolidation and Deconsolidation

uc Consolidation and deconsolidation

Consolidation

Deconsolidation

Notify Party

Transport

Transport Services
Provider 1

Transport Services
Provider 2

Use Case Description

| Business process name	Consolidation and Deconsolidation
Identifier	Consolidation and Deconsolidation
Actors	Transport Service Providers, Notify Party
Description	Consignments are consolidated into one Means of Transport and/or one piece of Transport Equipment by the sending Transport Service Provider and this consolidation of consignments is then transported to the receiving Transport Service Provider. The receiving Transport Service Provider receives the consolidated consignments, and may or may not deconsolidate the consignments after receipt.
Pre-condition	Multiple consignments at the sending end are consolidated for transport purposes.
Post-conditions	Multiple consignments at the receiving end may be deconsolidated for the purpose of delivery.
Scenario	The sending Transport Service Provider consolidates a number of consignments, as defined in individual House waybills, into one piece of transport equipment and or one means of transport for the purposes of moving the consolidation to the receiving Transport Services Provider. The sending Transport Service Provider prepares and issues a consolidated (Master) Transport Contract document for the movement of the consolidation. The consolidated consignment is transported to the receiving Transport Service Provider. The receiving Transport Service Provider may deconsolidate the consolidated consignment into the individual consignments for individual deliveries as defined in their respective House waybills. If required a Notify Party may be notified of the splitting of the consignment.
Remarks	The Transport Service Provider may be a carrier, a freight forwarder, a consolidator, etc. The Notify Party may be a carrier, authority, etc.

5.1.2 Activity diagrams

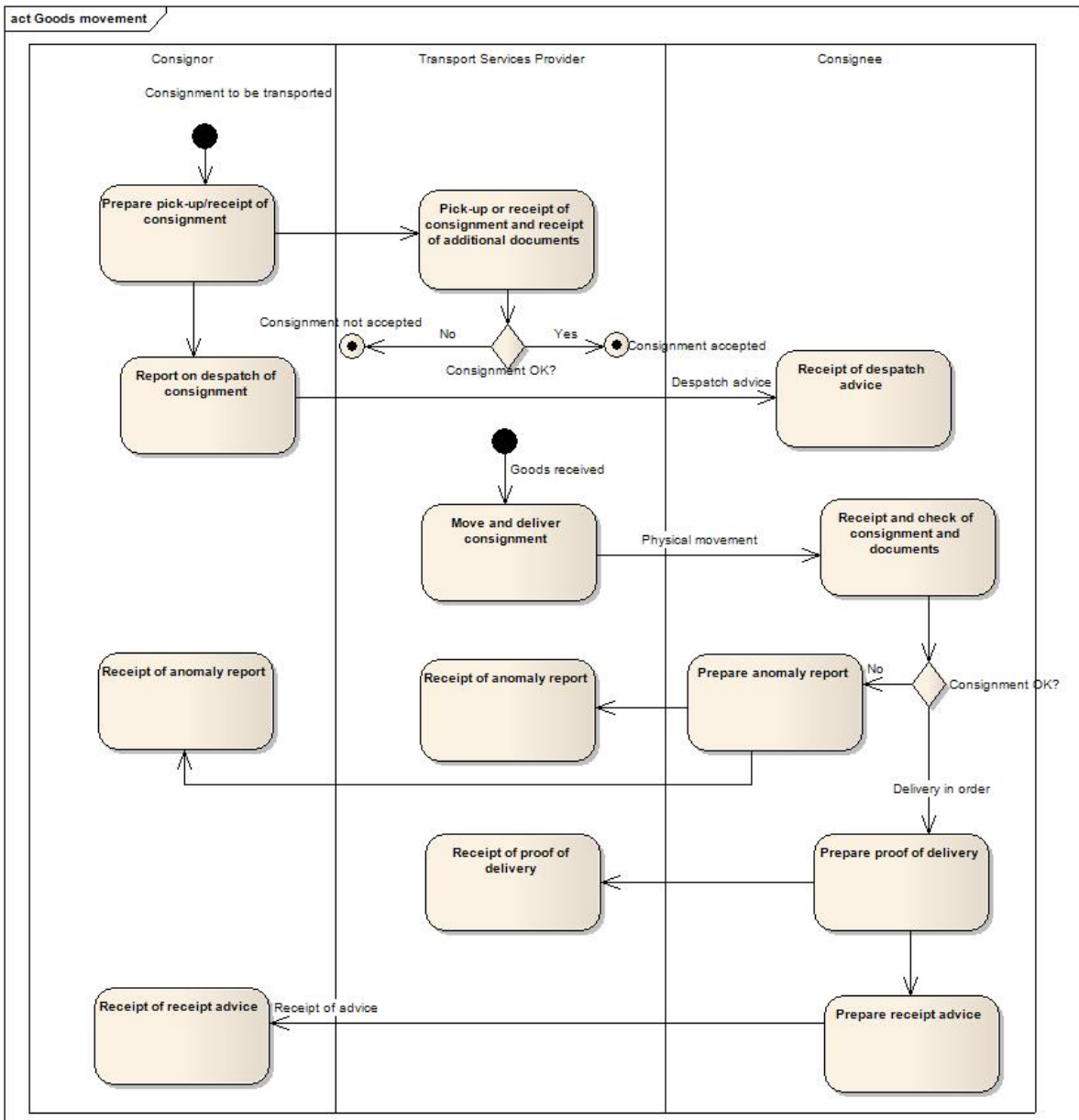A variety of flows is possible. A number of activity diagrams are given.

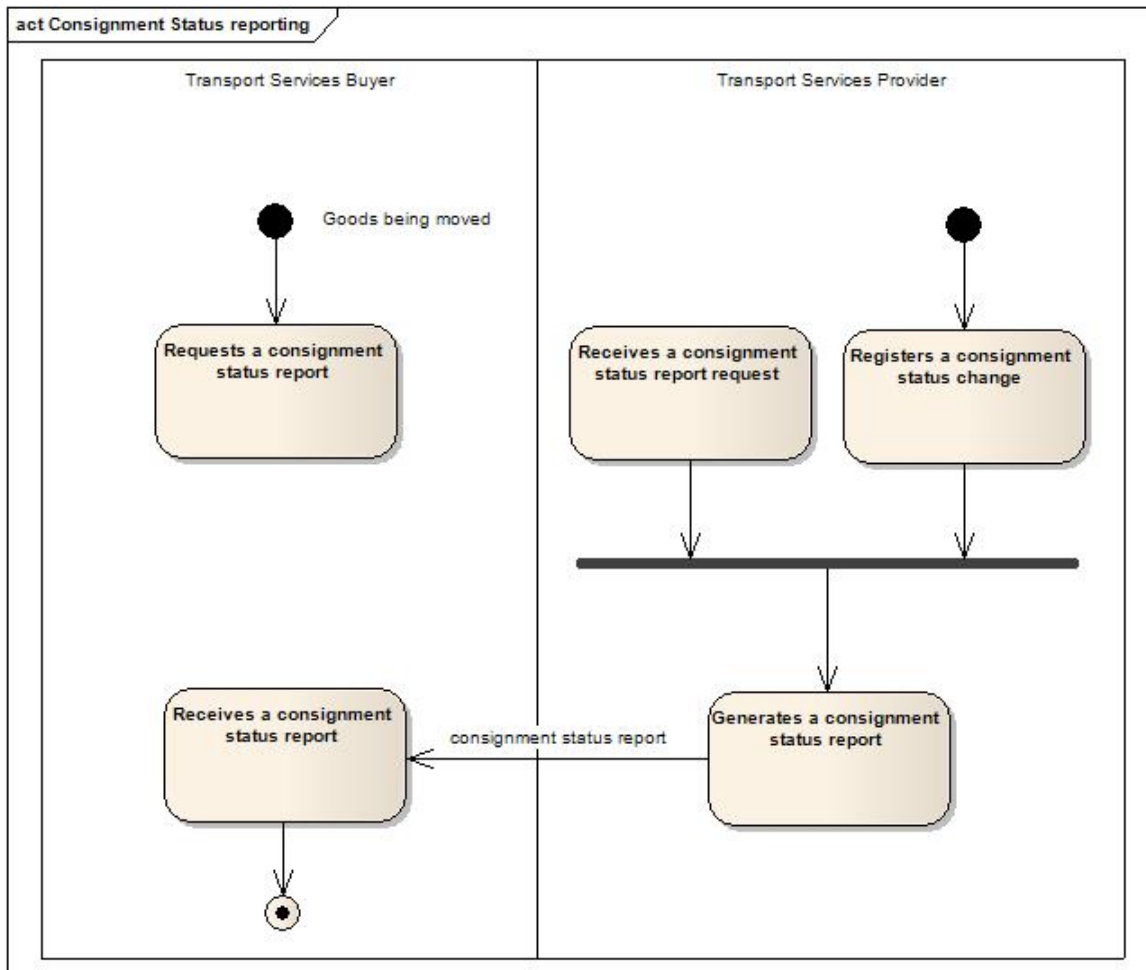*5.1.2.1 Booking activity diagram*
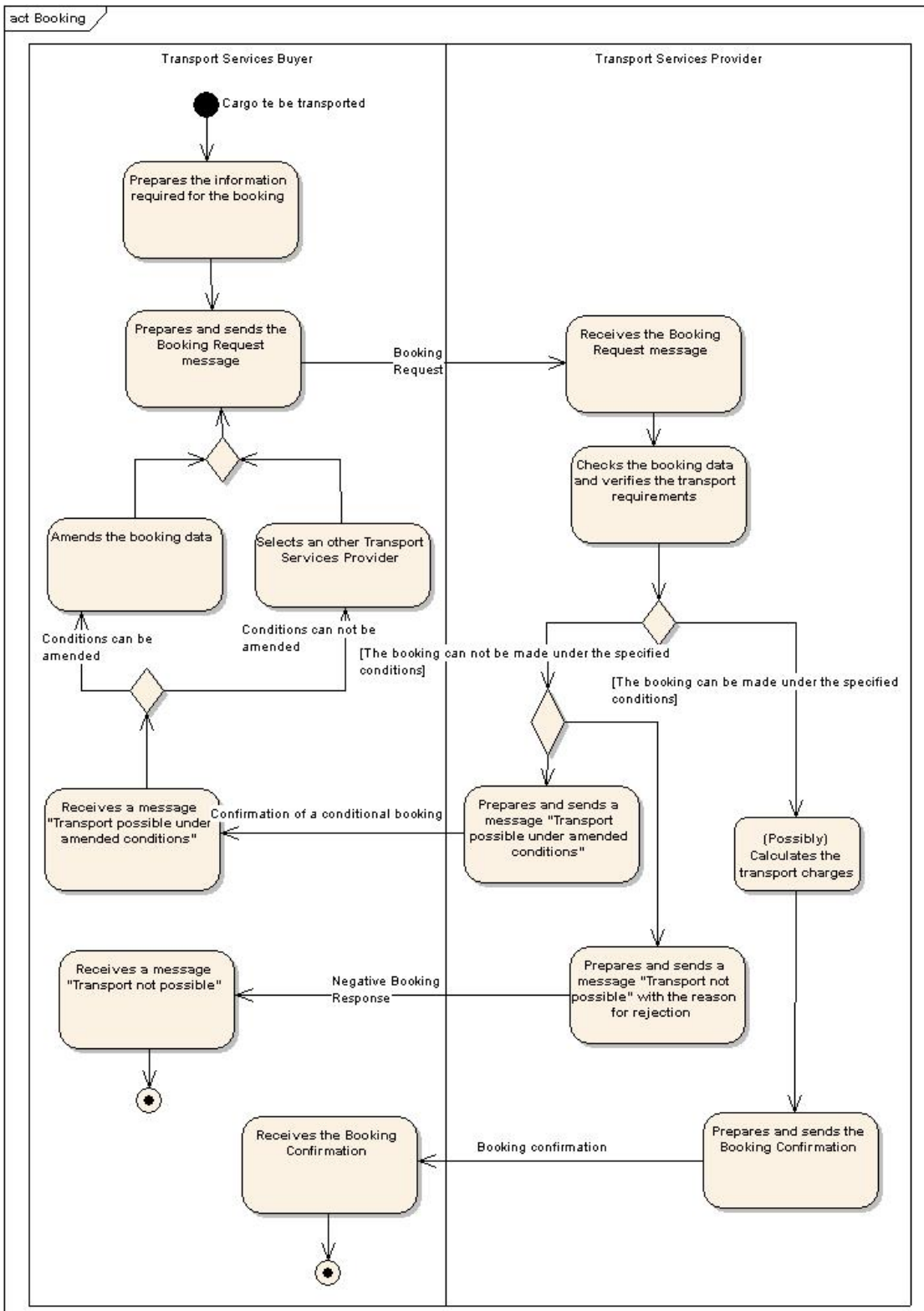
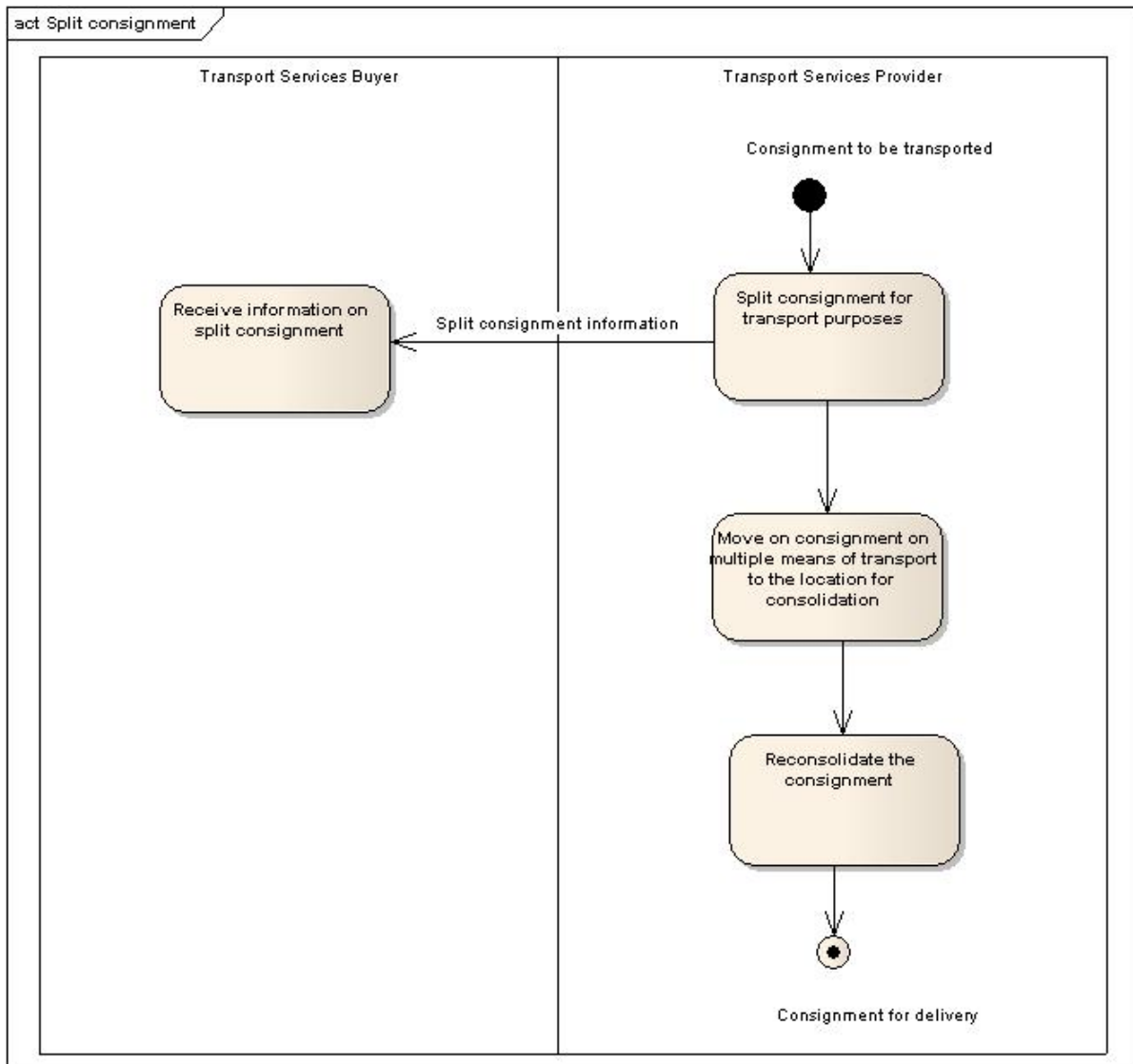*5.1.2.2 Transport Ordering and Instructions activity diagram*
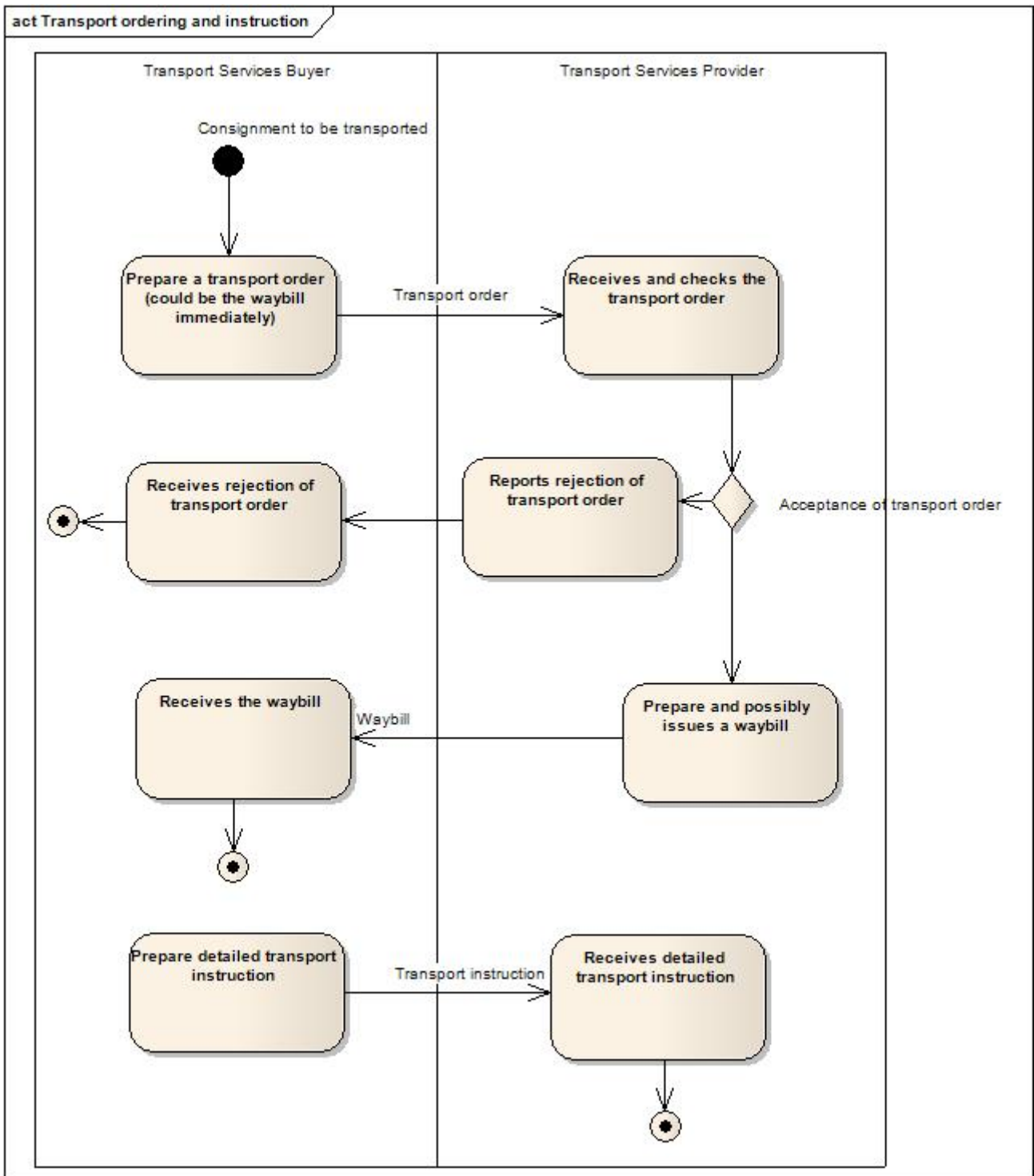
5.1.2.3 Goods Movement activity diagram

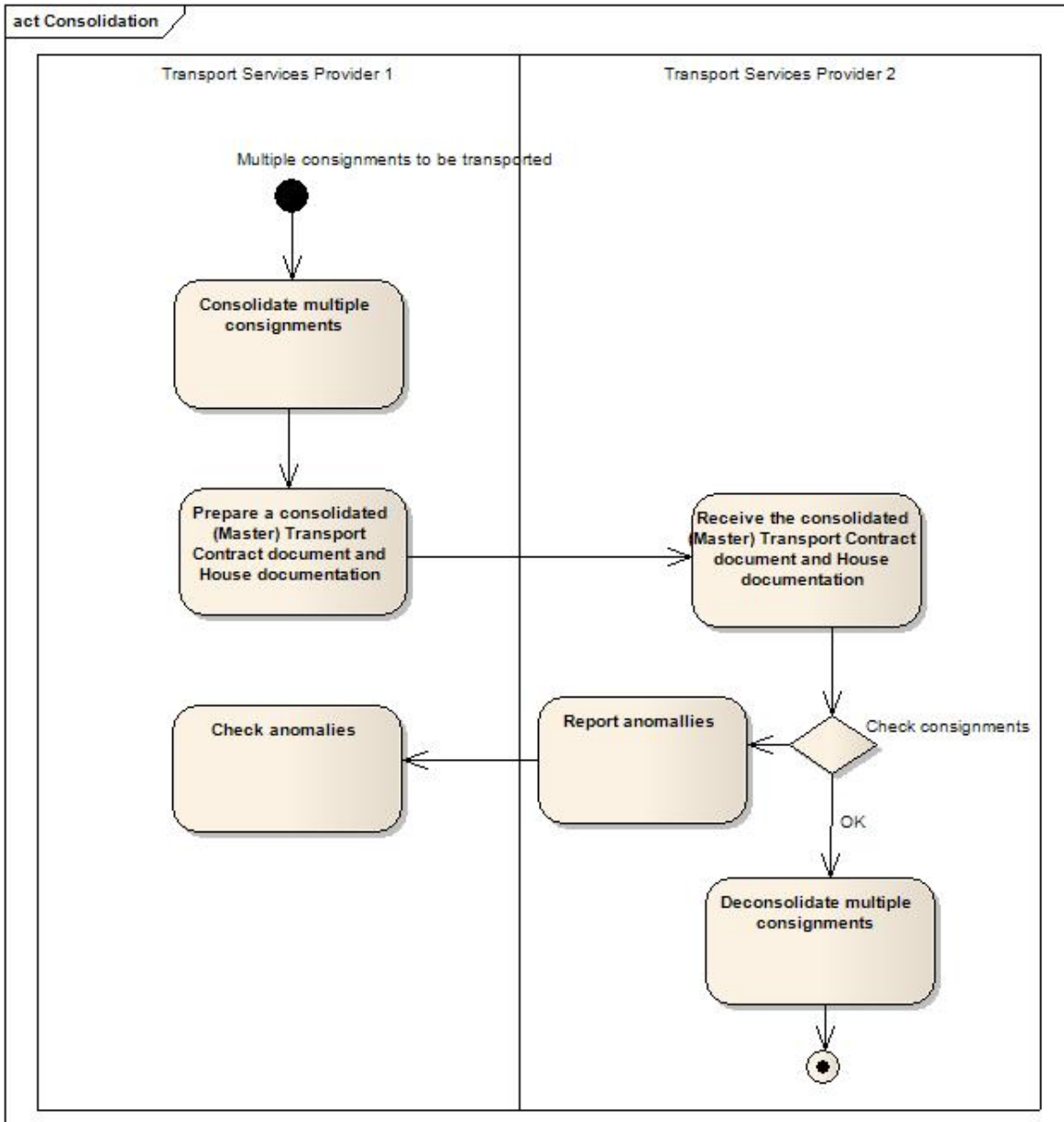## 5.1.2.4 Status reporting activity diagram

5.1.2.5 Split consignment activity diagram

act Split consignment

Transport Services Buyer | **Transport Services Provider**

Consignment to be transported

● → Split consignment for transport purposes

Split consignment for transport purposes → Split consignment information → Receive information on split consignment

Split consignment for transport purposes → Move on consignment on multiple means of transport to the location for consolidation

Move on consignment on multiple means of transport to the location for consolidation → Reconsolidate the consignment

Reconsolidate the consignment → ◉

Consignment for delivery

5.1.2.6 Consolidation activity diagram

5.2   Information Flow definition

5.2.1   Business Entities within the Information Exchange

This section provides the relationships between, and the definitions of, the key business information entities shared between the supply chain and transport scenarios.

The following diagram and (some of) the accompanying text is taken from the UNeDOCs BRS and describes the relationships between the highest-level Business Information Entities of the CCTS UNeDocs Data Model.
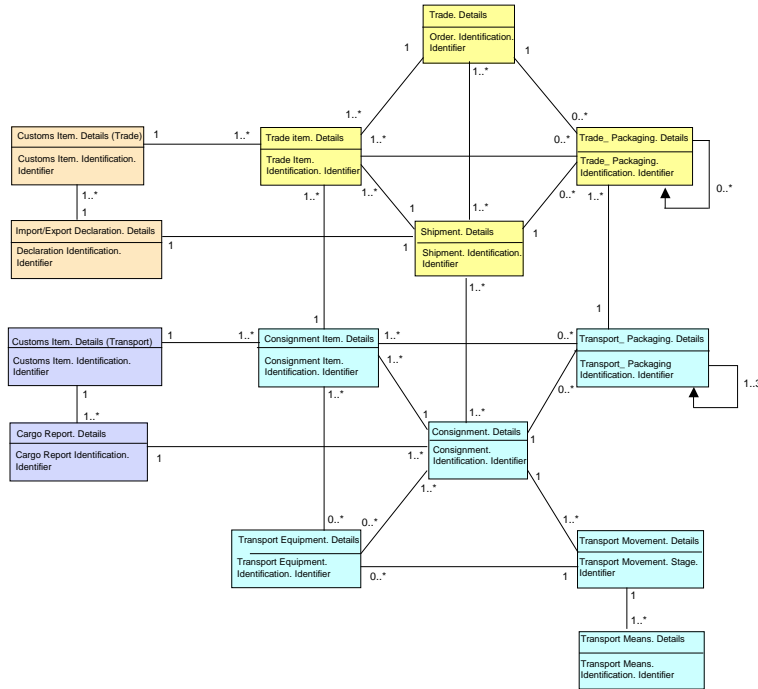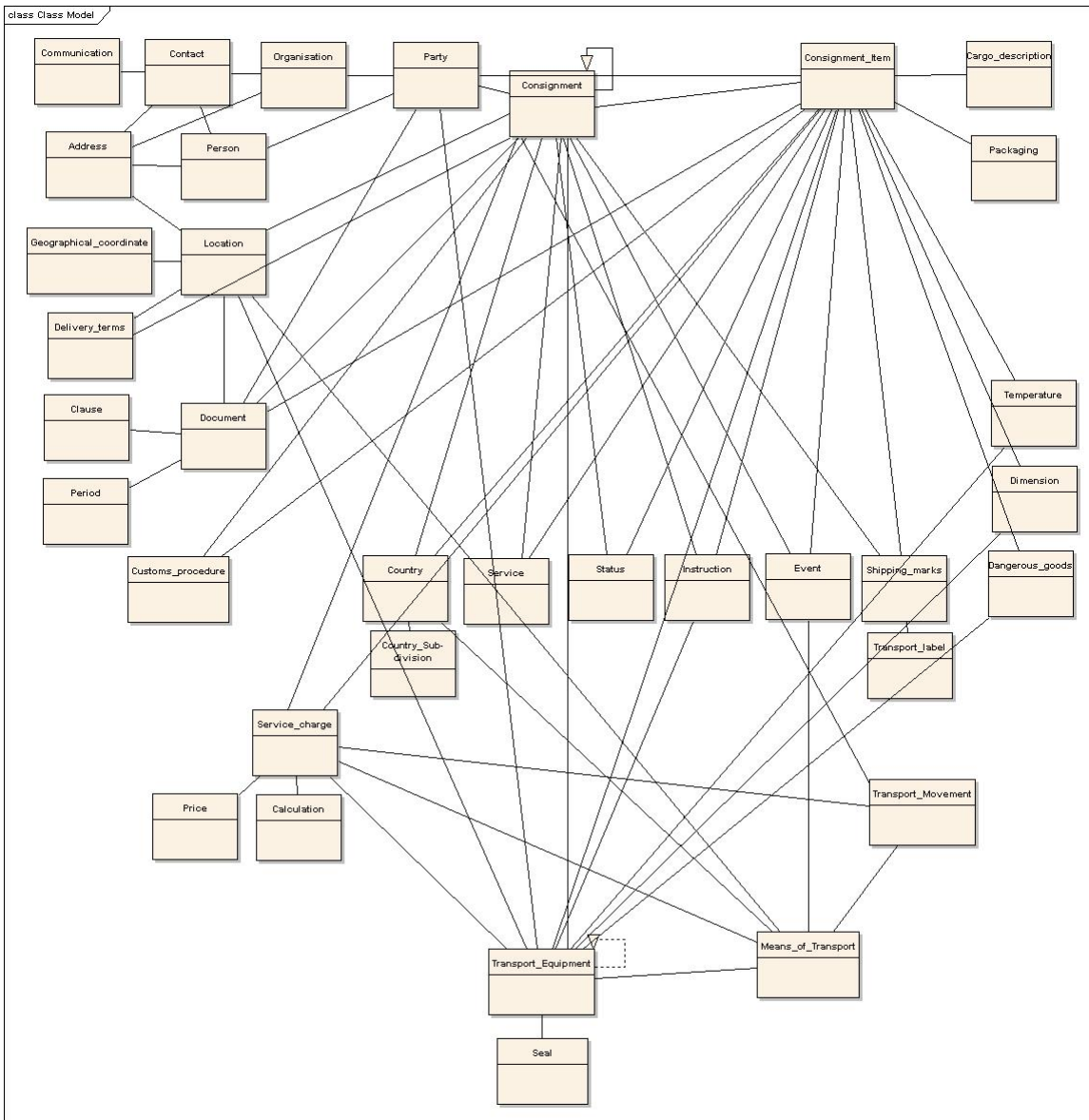

Figure . (UneDocs) High-Level Entity Relationships

5.2.2　Class diagram and data model

The class diagram gives an overview of which classes are used in business processes and which relations exist between these classes.

The precise relationship depends on the specific business process with the area of Transport and Forwarding.

5.3 Information Model definition

The business processes in the area of Forwarding and Transport use the following ACC's:
- Address
- Cargo description
- Clause
- Communication
- Consignment
- Consignment Item
- Country
- Country Sub-division
- Custom Procedure
- Dangerous Goods
- Delivery Terms
- Dimension
- Document
- Event
- Geographical Coordinate
- Instruction
- Location
- Organization
- Packaging
- Party
- Payment Means
- Payment
- Period
- Person
- Seal
- Service Charge
- Shipping Marks
- Status
- Temperature
- Transport Equipment
- Transport Label
- Transport Means
- Transport Movement

The transport specific information elements have been harmonised by TBG17 and are available from Core Components Library 08A onwards.

5.4 Business Rules

The operational transport roles of consignor and consignee relate to the contractual role of Transport Service Buyer, which can be either the consignor or the consignee.

The Transport Service Provider can be the carrier or the Freight Forwarder (if he is organising the transport independently and not as the agent of the Transport Services Buyer).

For transport operational reasons Transport Service Providers may consolidate and deconsolidate consignments.

5.5 Definition of main terms

Consignment (Transport 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 document.

- a **Consignment** can only have one **Transport Services Buyer**
- a **Consignment** can only have one **Transport Services Provider**
- a **Consignment** can only have one **Consignor**
- a **Consignment** can only have one **Consignee**
- the **Transport Services Buyer** can be either the **Consignor or the Consignee**
- a **Consignment** is made up of one or more **Consignment Item**
- a **Consignment** can be made up of one or more **Line Items** from one or more **Shipments** which are aggregated into **Consignment Items**

Consignment Items

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 **Line Items**
- a Consignment Item can only have one associated Customs tariff code

Participating Parties

There are potentially many parties participating in the international purchase and supply chain. The parties within the scope of this project, however, can be grouped into four main categories, also known as "actors". The definitions of these actors are outlined below.

Trade/Transport Actors (or authorised roles)

Trade Contract	Transport Contract	Definition
Seller/Supplier syn. Original Shipper	Original Consignor	The party selling goods or services
Buyer/Customer	Final Consignee aka Ultimate Consignee	The party to whom goods are sold
	Transport Services Buyer (Consignor or Consignee)	The buyer of transport services
	Transport Services Provider (Carrier or Freight Forwarder)	The provider i.e. seller of transport services
	Consignor	The party consigning goods as stipulated in the transport contract.
	Consignee	The party receiving a consignment of goods as stipulated in the transport contract.
	Carrier	A company which provides transport services
	Freight Forwarder	The party arranging the carriage of goods including connected services and/or associated formalities on behalf of a consignor or consignee
	Despatch Party	(3282) Party where goods are collected or taken over by the carrier (i.e. if other than consignor). Operational term 'Pick-up Place'.
	Delivery Party	(3144) Party to which goods should be delivered by the carrier. Operational term 'Place of Positioning'.
Ship From	Original Despatch Party	Identification of the party from whom goods will be or have been originally shipped.
Ship To	Final Delivery Party aka Ultimate Delivery Party	Identification of the party to whom goods will be or have been ultimately shipped.

Table 2

Buyer

The Buyer purchases goods through the international purchase and supply chain. The Buyer's other possible roles include the Consignee, Transport Services Buyer, Importer, Customer and Invoicee.

Consignee
The party receiving a consignment of goods as stipulated in the transport contract.

Transport Service Buyer (Consignee)

Customer
The party to whom goods are sold.

Importer
A 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.

Seller

The Seller supplies goods through the international purchase and supply chain. The Seller's other possible roles include the Consignor, Transport Services Buyer, Exporter, and Invoice Issuer.

Consignor
The party consigning goods as stipulated in the transport contract.

Transport Service Buyer (Consignor)
See Table 3

Exporter
A 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

Intermediary

Within the international purchase and supply chain, the Intermediary can be any party who provides services to either the Buyer or the Seller. The possible roles of the Intermediary include the Transport Service Provider (e.g. Carrier, Freight Forwarder), Financial Institutions (where they may act as Consignee) Customs Agent or, if different from the Buyer or Seller, could also include the Consignee or the Consignor.

Authority

An Authority provides authorisation for the trading of goods within the international purchase and supply chain. The possible roles of the Authority include border control authorities (e.g. Customs), permit/licensing issuing authorities and port authorities.

Note that the principal authority within the scope of this project is Customs.